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2nd International Science Congress

ISC-2012

8th - 9th December-2012

SOUVENIR

Science and Technology - Challenges of 21st Century

Venue

Bon Maharaj Engineering College

Vrindavan, Mathura, UP, INDIA

Organized by

International Science Congress Association

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Prof. Dr. Dipak Sharma
Editor-in-Chief and Director
dipaksharma07@yahoo.com

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E-mail: **contact@isca.co.in**

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ISC- 2012 Inaugural Ceremony

Saturday, 8th December 2012, Time 10:00 am

Inauguration By

Prof. MacDonald Idu
Vice Chancellor,
Benson Idahosa University, Benin City, Edo State, Nigeria, West Africa

Prof. P. B. Sharma
Vice Chancellor,
DTU, Founder Vice Chancellor, Delhi Technological University, Delhi-110042, India

Prof. Madhu Sudan Sharma,
Vice Chancellor,
Kota University, Kota, Rajasthan, India

Dr. G. S. Mukherjee
Scientist-F/ Additional Director,
DRDO Knowledge Management, Defence Scientific Information & Documentation Centre,
Defence Research & Development Organization (DRDO), Ministry of Defence, Govt. of India, India

ISC-2012 Valedictory Ceremony

Sunday, 9th December 2012, Time 03:00 pm

Dr. Habeeb S. Naher
Professor
Medical Microbiology-Bacteriology, College of Medicine, Babylon University, Iraq

Dr. Tlek Ketegenov
Institute of high technology, National atomic company "Kazatomprom"
Almaty, Kazakhstan

Dr. Anely Nedelcheva
Professor
Department of Botany, Faculty of Biology, Sofia University "St. Kliment Ohridski"
Blv. Dragan Tzankov, Sofia, Bulgaria

Dr. Yunus Dogan,
Professor
Department of Biology, Buca Faculty of Education
Dokuz Eylul University, Buca, Izmir, Turkey

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Science and Technology-Challenges of the 21st Century: Phytomedicine in Focus

Idu MacDonald
Vice Chancellor, Benson Idahosa University, PMB 1100,Ugbor road, Benin City, Edo State, NIGERIA

Abstract: Since the advent of the earliest forms of science and technology,unprecedented strides have been made so much so that it is increasingly becoming apparent that the edges/boundaries of limitations realy do not exist. Information and communication technology (ICT) has shrunk the world into a global;Biotechnology has lead to the tremendous boost in Agriculture with its added promise of cure and management of ravaging diseases such as cancer, biabetes, high blood pressure,sickle cell, HIV/AIDS and malaria. This field has found useful application in phytomedicine/medicinal plant research in the areas of drug development, phytochemical analysis, standardization and safety evaluations of herbal drugs. However ethical issues as well as political sovereignty pose major challenges to the development and proper utilization of the product/practice of science and technology. Other challenges such as food security, disease control, global warming, accessible and affordable health care which has lingered in the past still pose greater challenges in the 21st century. Our way of thinking and approach to the practice of science and technology require radical change with clarity of intentions in order to continue to bask in the euphoria and comfort that the technology advances, as the alternative potends unquantifiable doom.

Science for Sustainable Society

Mukherjee G.S.
Defence Scientific Information and Documentation Centre,
Defence Research and Development Organization, Metcalfe House DRDO Complex, New Delhi-110054, INDIA

Abstract: Since last few years UN General Assembly as a matter of policy declares on regular basis some *Special Year* dedicated to specific subjects of science for celebration with a purpose to create awareness among the people around the globe. For example, year 2005 was declared as the *International year of Physics*; whereas year 2009 was declared as the *International Year of Science"* to commemorate the achievements of two stalwarts of science – one is Galileo and other is Darwin who made the landmark discoveries for human civilization – one in the area of astronomy and the other in the area of understanding the evolution of species respectively, both of which are equally and extremely eventful. In fact, the anniversaries of these two important discoveries of diverse dimensions speak volumes of the significance of year 2009. Year 2009 was also important because one more eminent personality none other than Abraham Lincoln who has left indelible marks in the society by his signal contributions and whose 200th birth anniversary was also celebrated in the same year. Year 2009 will be remembered as very special year where three unique minds of Galileo, Darwin and Lincoln - the hallmarks of natural and social sciences will always inspire the generations of human society to develop the culture of amalgamation of natural science with social science for a scientific society and humanity at large. Likewise Year 2011 was celebrated as *International Year of Chemistry* to highlight and remember the major events and milestones of achievements of chemistry to appreciate and reciprocate its role and knowledge in our day to day life.

In the current year 2012, the call is "*Sustainable Energy for All (SE4ALL)"* in global scale. And the initiative is led by the Secretary-General of the United Nations, Ban Ki-moon to achieve universal energy access, improve energy efficiency, and increase the use of renewable energy. On the other hand, Year 2012 is declared as the 'National Mathematical Year' in India to commemorate the 125th year of birth anniversary of the mathematics wizard Srinivasa Ramanujan. More interestingly, Year 2013 has been declared as the "*International Year of Mathematics of the Planet Earth"* to emphasize on the fact that m*athematics plays key role in understanding the complex processes which constantly affecting the planet earth as a result of the human activities. In fact, human activity has increased to the point where it influences the global climate, impacts the ability of the planet to feed itself and threatens the stability of these systems. Issues such as climate change, sustainability, man-made disasters, control of diseases and epidemics, management of resources, and global integration have come to the fore.*

*It is universally accepted fact that all human activities are guided by energy which is the most important of all issues of global concern. From societal standpoint, s*ustainable energy is the driving force for fulfillment of the needs of the present society without compromising the requirements for the future civilizational survival. In the existing world of economics, the increasing preference for commercial energy has led to a sharp increase in the demand for electricity from fossil fuels. But the use of fossil fuels has resulted in emission of huge quantity of carbon dioxide causing serious environmental damages which lead to contemporary concern for the climate change as a result of proliferation of carbon emission in the atmosphere. Global CO_2 emissions are currently at 4.4 tons per capita. Climatologists think that this

number must be cut down to its half by 2050 to maintain CO_2 levels in the atmosphere around 470 ppm to control the temperature not to rise beyond 2°C else it will cause disaster to human societal survival. However, there is a silver lining; studies report that an average home solar system is capable to eliminate 18 tons of greenhouse gas (GHG) emissions from the environment each year. Overflowing solar energy can be the most promising sustainable source of electricity. There is more than enough power available from the sun to meet the global need. There are two major methods such as *photovoltaic technology* and *solar thermal energy technology*. Solar cells for photovoltaics (PV) are currently attracting much attention as potential energy source. PV systems can contribute substantially to mitigate the problem of disaster because they are modular and can be tailored to a wide range of electrical loads and locations.

Sun is the source of photon or light energy which is nothing but a form of electromagnetic energy. Photovoltaic technology is a methodology for direct conversion of such photon electromagnetic energy into electrical energy. Thus, photovoltaic technology is currently enjoying substantial growth and investment. This has created an opportunity for engineering innovation through the development of new generation hi-tech materials based on inorganic and/or organic resource items. Emergence of conjugated, semi-conducting polymers has created a new class of materials that combines the processing advantage of polymers coupled with their ability to afford functional semiconductor properties. Polymeric materials can be applied to design solar cells and solar paints for photovoltaic purpose to generate electricity from the natural resource of solar energy. The prospects of production of light weight and flexible organic polymeric solar cells have made the subject of materials research all the more interesting and challenging.

Year 2012 was declared as the *International Year of Sustainable Energy for all.* In this backdrop in the centenary year of celebration of 2nd International Science Congress in the holy place Vrindaban, I have made an effort to highlight how the attention has been shifted from the traditional inorganic materials to the new generation material based on polymer and their nano-composite systems to help meeting the future challenges of photovoltaic technology. But it must be noted that mere generation of electricity is not sufficient, what is equally important is to evolve systems for storage of electrical energy and evolve the devices which consumes less power. Solar systems have very little impact on the environment, and they can play an important role in the country as India is endowed with ample solar insolation exposure with about 301 clear sunny days in a year.

Sun is completely free source of energy for all, unrestricted by geographical boundaries; nobody owns the Sun - it is the property of all nations and individuals. Thus, focus on the solar energy technology is truly the ideal approach to implement the ideas and aspirations of the contemporary cause of "*International year of sustainable energy for all*".

At the end I express my sincere thanks and gratitude to the organizer who invited me for inaugurating the 2nd International Science Congress in the holy city of *Vrindaban during 8-9 Dec. 2012. I*n the backdrop *of the above, I appreciate the effort of the organizer of* this Congress for providing the platform for scientists working in different fields to present, discuss the issues of science towards arriving at novel solutions.

ISCA-ISC-2012-1AFS-01

Impact of Invasive Alien Insects on Agriculture Production

Sujay Y.H., Giraddi R.S., Shyamrao Kulkarni, Vanishree S. and Zaheer Ahmed B.
University of Agricultural Sciencs, Raichur, Karnataka, INDIA

Abstract: Invasive alien species have invaded and affected native biota in virtually every ecosystem of the earth. They occur in all major taxonomic groups, including viruses, fungi, algae mosses, ferns, higher plants, invertebrates, fish, amphibians, reptiles, birds and mammals. Invasive species can transform the structure and species composition of ecosystems by repressing or excluding native species, either directly by out-competing them for resources or indirectly by changing the way nutrients are cycled through the system. Alien species are non-native or exotic organisms that occur outside their natural adapted habitat and dispersal potential. Many alien species support out farming and forestry systems in a big way. However, some of the alien species become invasive when they are introduced deliberately or unintentionally outside their natural habitats into new areas where they express the capability to establish, invade and outcompete native species. The spread of Invasive Alien Species (IAS) is now recognized as one of the greatest threats to the ecological and economic well being of the country. These species are causing enormous damage to biodiversity and the valuable natural agricultural systems upon which we depend. Direct and indirect health effects are increasingly serious and the damage to nature and environment is often irreversible. The impact on the environment and agricultural production of invasion of a pest species is tremendous. Such impacts can be minimized with international cooperation through exchange of information on invasive pests and their natural enemies. There is a need for interdisciplinary coordinated work among scientists, in identifying invaded organisms and in assessing their ecological problems, environmental concerns in different ecosystems, economic damage and methods of control. The impact on the environment and agricultural production of invasion of a pest species is tremendous. Such impacts can be minimized with international cooperation through exchange of information on invasive pests and their natural enemies. There is a need for interdisciplinary coordinated work among scientists, in identifying invaded organisms and in assessing their ecological problems, environmental concerns in different ecosystems, economic damage and methods of control.

Keywords: Invasive alien species, agriculture production, ecosystem, economic damage.

ISCA-ISC-2012-1AFS-02

Land and Cropping Utilization Pattern in Solan Himachal Pradesh, India

Sanjay Kumar[1] and Deepak Prashar[2]
[1]Dept. of Economics, Govt. College Dharampur, Mandi, HP, INDIA
[2]Dept. of Pharmaceutical Sciences, Vinayaka College of Pharmacy, Kullu, HP, INDIA

Abstract: The present paper reveals the issues like land use and cropping pattern in district Solan of Himachal Pradesh. In this district, during last few decades noticeable changes have taken place in the land use and cropping pattern on account of agrarian policy of the government of the state and sharp fluctuations in farm prices. The growing awareness among the farmers to run farming simply on the business point of view has also encouraged them to reorganize their farming practices. This could enable the farmers to get higher production and maximum profit. The result of the study clearly indicates that farmers of the area are shifting towards commercial cropping and significant changes in cropping pattern have been observed. Area under non food crops has shown increased trend for cash crops. Study also depicts that area under pulses have declined whereas, in case of vegetables it has increased significantly. Agricultural diversification is determined by change in cropping pattern as an integral part. The process of agricultural diversification reduces the risk and increases the returns to farms. Therefore, it has immense effect on the development of agriculture and also helpful in alleviating rural poverty. Agro-climatic condition of Himachal Pradesh is conducive for growing various agricultural and horticultural crops. So, this state can emerge as the modal of agricultural diversification in India. For effective planning and policy making, it is desirable to study the existing use of land, which is a limited resource.

ISCA-ISC-2012-1AFS-03

Effect of *Pongamia pinnata* and *Nerium indica* on S*itophilus oryzae* adults (Coleoptera: Curculionidae)

Shukla P. and Sharma S.
Centre for Rural Development and Technology, Indian Institute of Technology, New Delhi, INDIA

Abstract: Storage of grains is part of the post-harvest system through which food material passes on its way from field to consumer. It is generally accepted that 5–15% of the total weight of all cereals, oilseeds, and pulses is lost after harvest. Rice weevils (*Sitophilus oryzae*) are considered a primary stored-grain insects in warm climate areas. They cause significant losses to stored grains, especially cereals, at conditions favorable to their development (25–35°C and low RH).*Sitophilus oryzae* **L.**, a storage pest of wheat grains is normally managed by the application of chemical pesticides which, however, remains in the wheat grain, even after cleaning and affects human health. Therfore, the present study was conducted to investigate the efficacy of two indigenous plants extracts impact on the adult of *Sitophilus oryzae*. Extracts from leaf of *Pongamia pinnata* and *Nerium indica* were tested under laboratory conditions for their efficacy to protect stored grain from damage by *Sitophilus oryzae* **L.** Five concentration levels 5%,4%,3%,2%,1% (wt/wt) were used. Extracts of both plant species reduced insect damage of the grains even at the lowest concentration level of 1%. However, the *Pongamia* oil was found better protectant than extracts.100% mortality was achieved in 10hat with 5% concentration of oil. The detailed results will be presented at the conference and at the paper.
Key words : Sitophilus oryzae, pongamia pinnata, nerium indica.

ISCA-ISC-2012-1AFS-04

Effects of Sowing Density on yield and Quantitative Characteristics of soybean

Shamsi Keyvan and Kobraee Soheil
Dept. of Agronomy, Kermanshah Branch, Islamic Azad University, Kermanshah, IRAN

Abstract*: In order to investigate the effects of different densities on yield and yield components in soybean, an experiment was* conducted in a factorial based on randomized complete block design with three replications at research farm, Islamic Azad University of Kermanshah at 2007-2008. Cultivars factor were placed in the blocks at 3 levels including M7, M9 , and Gorgan3 and density factors at 3 levels including plant were placed on 3,5,7cm intra rows spacing(53,32 and 23 plant.m^{-2}) in the blocks. The end of growth stage and harvesting time, the grain yield and yield components were determined. The results showed that density of 23 and 53 plant.m^{-2} had highest and lowest numbers of branches per plant ,respectively.The highest number of node per plant and 100 grain weight per (main stem,branches and plant) related to M7 cultivar and highest number of pod per(branches and plant) related to Gorgan3 cultivar.also M7 and Gorgan3 had highest number of grain per plant and number of grain per branches ,respectively. A significant correlation coefficient were found between grain yield with plant height(r=0.71**),number of grain per plant(r=0.73**),100 grain weight(r=0.43**),biological yield(r=0.85**) and harvest index(r=0.34**). Gorgan3 had highest yield than two cultivars, M7 and M9. The highest yield related to density of 23 of plants.m^{-2}**.**
Keywords: Soybean , sowing density, grain yield, cultivar, quantitative characteristics.

ISCA-ISC-2012-1AFS-05

Development of genotype specific RAPD derived SCAR markers and SSR analysis of cultivated and wild Sesame for Marker Assisted Breeding

Prasad R. and Gangopadhyay G.
Division of Plant Biology, Bose Institute, 93/1 Apc Road, Kolkata – 700009, INDIA

Abstract: As a prelude to the improvement of Sesame, an important age old oilseed crop through Marker Assisted Breeding (MAB) in Indian context, twenty three cultivated (*Sesamum indicum* L.) and three wild Sesames (*Sesamum prostratum* Retz., *S. mulayanum* Nair and *S. occidentale* Regel & Heer. having resistance against pod shattering, *Antigastra* infestation and drought condition respectively) were characterized using PCR based molecular techniques – Random Amplification of Polymorphic DNA (RAPD) and Simple/Short Sequence Repeat (SSR) analysis. The RAPD derived genotype specific polymorphic bands were subsequently converted to SCAR (Sequence Characterized Amplified Regions) markers followed by submission to NCBI for procurement of GenBank accessions. Significant allelic demarcation was noted between amplicons of cultivated and wild genotypes using ten Sesame specific SSR primers. The molecular information obtained using RAPD and SSR primers was employed for cluster analysis and phenogram construction. The relative proximity between cultivated and wild Sesames was analyzed for future hybridization programme.
Keywords: Cultivated and wild Sesame, molecular markers.

ISCA-ISC-2012-1AFS-06

Effect of Blending on Functional Characteristics of Pure Kinnow Juice

Mishra Vigya and Sharma K.D.
Dept. of Food Sci. and Tech., Dr Y S Parmer University of Horticulture and Forestry, Nauni, Solan -173 230, HP, INDIA

Abstract: The single most hindrance in the popularity and processing of Kinnow mandarin juice is the development of bitterness immediately after extraction of the juice. Kinnow juice is also low in antioxidant activity, vitamin C, total phenolics and deficient in anthocyanins. The present study was therefore conducted to evaluate the effect of blending of different fruit juices on the functional properties of Kinnow juice. The proportions of fruit juices were standardized by mixing the juices in different proportions followed by sensory evaluation. Sensory evaluation of blends indicated that the bitterness of Kinnow juice decreased significantly on blending with papaya and red grapes. The best blends were further analyzed for different functional parameters *viz*., antioxidant activity, ascorbic acid, total carotenoids and total phenolics. A significant increase was recorded in antioxidant activity of Kinnow juice as an effect of blending. It increased by 173% after blending with red grapes juice. A random trend was recorded in the ascorbic acid content of juice after blending. Total carotenoids content of Kinnow juice increased from 2.39mg/100g to 3.21mg/100g when blended with papaya pulp in the proportion of 80: 20. Blends were further stored at ambient and refrigerated storage conditions to study their shelf-life. A gradual decrease in functional parameters was recorded during storage however, changes were more at ambient storage. Thus blending of juices could be an economic requisite to utilize the fruits which otherwise have unfavourable taste and poor nutritional quality.
Key words: Kinnow, blending, antioxidants, aonla, red grapes.

ISCA-ISC-2012-1AFS-07

Evaluation of Functional Characteristics of Honey lemon Ice Tea

Sharma Surabhi, Devina Vaidya and Mishra Vigya
Dept. of Food Science and Tech., Dr Y S Parmar University of Horticulture and Forestry, Nauni, Solan, H.P., INDIA

Abstract: Tea is one of the popular non-alcoholic beverages in the world. It has specific characteristics, such as taste, aroma, and is reported to have health effects. Different types of tea have different composition of phenols and antioxidants. Tea polyphenols have been known for their antioxidant activity, antimutagenic and anticarcinogenic properties. These properties can be effectively utilized for the preparation of beverages like honey lemon ice tea. This drink is refreshing with the beneficial effects of honey, lemon and high antioxidant activity of tea extract. Therefore, present investigation was carried out to develop honey lemon ice tea with different types of tea available in the Indian market. Two concentrations of tea extract i.e. 0.5 per cent and 1 per cent were used for the preparation of ice tea. The total phenolic content ranged between 17.6 mg/100g to 58.6 mg/100g. The antioxidant activity was highest in 1 per cent green tea (92.89%) whereas the lowest was observed in 0.5 % red label (86.6 %). No significant difference was recorded in the sensory scores of the different ice teas. Therefore, ice tea with one per cent green tea was adjudged best, so this can be commercialized to add variety in the category of functional beverages with high antioxidant activity.
Keywords: Ice tea, honey, lemon.

ISCA-ISC-2012-1AFS-08

Effect of Different Stages of Harvest on Physico-Chemical Characteristics of Nectarine Cvs. May Fire, Snow Queen, Silver King and Red Gold

Thakur K.S. and Abrol Ghan Shyam
Dept. of Food Science and Tech., Dr Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, HP, INDIA

Abstract: Nectarine fruit (*Prunus persica* var. *nucipersica* Schneid.) is a smooth-skinned peach of the family Rosaceae. Genetically nectarines differ from peaches at only one gene for texture. Nectarine taste very similar to peaches, but are a bit more acidic. They are good source of dietary fibers and vitamin A and C. They are highly perishable and have a short storage life. Fruit growers of Himachal Pradesh have turned to the cultivation of nectarines only recently and there is a dearth of scientific information regarding maturity indices for the quality of fruits. Therefore, present study was carried out to standardize appropriate time of harvest for good quality of nectarine fruits for table purpose. May Fire, Snow Queen and Silver King and Red Gold cultivars were taken for the study as these cultivars observed with different maturity time in Himachal Pradesh. It was observed that the fruits harvest earlier than the proper maturity undergo shriveling while late harvested fruit undergo soft decay after 7 days of maturity. The nectarine cultivar Silver King showed the maximum size and volume among the different cultivars taken. However, high PLW rate indicated the highly perishable nature of Silver King cv. in comparison to other cultivars. The lowest PLW and highest total phenols was recorded in Snow Queen thus making it the best among these all. Due to high functional properties and longer shelf-life this cultivar can be best used for the table purpose.

Keywords: Nectarine fruit, Size, PLW, Total Carotenoids and Total Phenols etc.

ISCA-ISC-2012-1AFS-09

Effect of Low Cost Drying Technology on Quality Characteristics of Banana Dlices

Devina Vaidya[1], Sharma Ambika[1]*, Abrol Ghanshyam[1] and Vaidya Manoj[2]
[1]Dept. of Food Science and Tech., Dr Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, HP, INDIA
[2]Department of Social Sciences, Dr Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, HP, INDIA

Abstract: Table bananas are among the largest grown fruit in India and it has been part of human's diet for many years. As ripe bananas contain 80 per cent moisture and therefore is very susceptible to post harvest losses. Due to its bulky nature and reduction in weight and losses, it is very difficult to transport the fruits. Storage of banana for long term is not possible as such thus drying it with low cost technology is one of the options for storing its quality for future use. Thus, the present study was conducted to standardize the best pretreatment for drying of bananas with better retention of quality characteristics. Therefore, the pretreatments used were 0.2% citric acid dip and the other was blanching for 3 minutes. These were then compared with control in which no treatment was given to the banana slices. Sensory analysis was conducted by the panelists for different parameters like colour, taste, texture and overall acceptability. However, colour retention was found better in both the treatments as compared to the control one. Effect of drying on different parameters like moisture content, rehydration ratio and starch content were also analysed. Drying of bananas slices in poly tunnels with these pretreatments has been found cost effective and an easy method to reduce the bulk of the crop and increase its shelf life.
Keywords: Banana, drying, pretreatments.

ISCA-ISC-2012-1AFS-10

Influence of *Aloe vera* (L.) Herbal Formulation on the Larval Characters and Economic Paramateres of Silk Worm (*Bombyx mori* L.) (Race : PM x CSR_2)

Khyade Vitthalrao. B.[1] and Gaikwad Dhanashree R.[2]
[1]Shardabai Pawar Mahila College, Shardanagar, Baramati, Dist. Pune – 413115, MS, INDIA .
[2]College of Agriculture, Shardanagar, Baramati, Dist. Pune – 413115, MS, INDIA

Abstract: The effect of the dietary supplementation of *Aloe vera* (L) herbal formulation (containing principally the extract *Aloe vera*) on the larval growth and the cocoon (economic) parameteres of the mulberry silkworm *Bombyx mori* L. commercial cross breed race: PM x CSR2 during its fifth instars was experimented. Treating the mulberry leaves with the aqueous solution of Aloe herbal formulation and feeding the fifth instar larvae, in general, elicited better response of the growth and the cocoon characteristics of this silkworm. Specifically, the *Aloe vera* L. at 2.0 % concentration resulted higher larval growth and increased the weight of cocoon. The mean larval weight, relative growth rate, effective rearing rate, larval consumption index of the final instar larvae of silk worm, *Bombyx mori* L. increased with the supplementation of *Aloe vera* tonic. The average pupal weight and mother moth weight also increased as a result of this supplementation. Maximum shell weight and shell ratio were noted in the group of larvae fed with *Aloe* treated mulberry leaves. The fibroin content of the cocoon shell produced by this silkworm in response to the dietary supplementation of *Aloe vera* tonic treatment also showed significant increase over control. The overall performance of *Bombyx mori* in response to the *Aloe vera* herbal treatment observed in the present study and the evaluation index values worked out showed that the growth and the cocoon parameters could be improved with the supplementation of *A. vera* herbal formulation.
Keywords : *Aloe vera*, *Bombax mori*, herbal formulation.

ISCA-ISC-2012-1AFS-11

Community Radio (CR) – Participatory Communication Tool for Rural Women Development - A Study

Siva K. C. Balan and Selvin Jebaraj Norman
Thanthai Roever Institute of Agriculture and Rural Development, Perambalur, Tamil Nadu, INDIA

Abstract: Radio was identified as the most accessible mass communication tool for grass root people. The radio as a medium, can easily reach the rural mass in short span of time. The technology is simple and easy to use. The advantage of radio is literacy is not needed for the users, while incurring lower investment cost. The concept of Community Radio (CR) is gaining momentum in recent period. Community Radio is a process. It is not simply about producing radio programme, to put on air.CR is by the community and for the community.CR is giving opportunity for the people

representation for different ethnic, social and religious backgrounds and gender. The community participation in all aspects of the radio station from establishment to management, from administration to financing. The modern concept of development gives emphasis to human and social development does not end with economic development only. For social development, empowering the Women at grassroots and their capacity building is the major concerns. Community Radio (CR) can emerge as a future tool for rural women development. CR is a platform for bringing accountability of the development process, ultimately making the system more transparent and ensuring good governance**.** CR ensures the participation of the community, along with community ownership and control. Thus speedy transfer of technology is need of the hour for second green revolution. The research for finding future tools for rural women development is inevitable.CR will play a major role in identifying and addressing local infrastructure needs, grass root development by means of participatory communication.
Keywords: Community Radio, technology, social and religious backgrounds.

ISCA-ISC-2012-1AFS-12

Effect of Bypass fat on the Performance of Crossbred Cows

Kumar Sandip and Jain Rupesh
Krishi Vigyan Kendra Tikamgarh -472001, J.N.K.V.V., Jabalpur, MP, INDIA

Abstract: Twenty lactating Holstein friesian cross bred cows with more or less similar milk yield, same parity and in early lactation phase were selected and divided in to four groups with five cows each. The body weight was 450±30. The feed ingredients and fodder offered to them was unchanged during the period of trial and test group was offered bypass fat supplement at 100g, 200g and 300g once in a day per cow. During the first week the average milk production per day ranged from 92±0.51 (control group) to 100±0.32 (test group) and fat percentage from 3.96±0.08 to 4.42±0.04, in the second week the production ranged from 93±0.40 to 103±0.25 and fat percentage from 3.86±0.06 to 4.40±0.07, in the third week the production ranged from 90±0.63 to 102±0.25 and fat percentage from 3.88±0.04 to 4.38±0.04, in the fourth week the production ranged from 97±0.40 to 106±0.38 and fat percentage from 3.84±0.04 to 4.54±0.02, in the fifth week the production ranged from 94±0.38 to 105±0.45 and fat percentage from 3.98±0.06 to 4.62±0.04, in the sixth week the production ranged from 91±0.73 to 101±0.20 and fat percentage from 3.84±0.02 to 4.48±0.04, in the seventh week the production ranged from 98±0.51 to 107±0.68 and fat percentage from 3.94±0.05 to 4.58±0.04, in the eighth week the production ranged from 93±0.25 to 108±0.51 and fat percentage from 4.06±0.02 to 4.60±0.03 respectively.
It was concluded that supplementation of rumen protected fat in cross bred cows during early lactation significantly increased milk yield and milk fat percentage.
Keywords: Cross bred cows, feed ingredients, milk production, milk fat percentage.

ISCA-ISC-2012-1AFS-13

Genetic Variability of *Macrophomina phaseolina* Affecting Sesame: Phenotypic traits, RAPD Markers, and Interaction with the Crop

Martínez-Hilders A., Mendoza Y., Peraza D. and Laurentin H.
Universidad Centroccidental Lisandro Alvarado, Barquisimeto, VENEZUELA

Abstract: *Macrophomina phaseolina* is a fungus which affects more than 500 cultivated species. It is one of the most important biotic stresses on sesame (*Sesamum indicum* L.). A successful control strategy, especially plant resistance management, depends on comprehensive knowledge about genetic variability for both fungus and plant. To evaluate genetic diversity of *M. phaseolina* affecting sesame in the most important crop production region of Venezuela, seven isolates were characterized by means of morphological traits, growth rate, and RAPD markers. Four of these isolates were used for evaluating the interaction with four sesame genotypes in two ways: interaction *in vivo* by inoculation, and effect of root and stem extracts on fungus growth. Variability for growth velocity (0.70-0.93 mm h^{-1}) (Pd”0.05), microsclerotia production (18-56 in 100 ì L) (Pd”0.05), and aerial mycelium presence was observed. Mycelium color was dark grey for all the isolates. Ten out of the 13 primers used were able to amplify the DNA, generating 81 bands (100% polymorphic). Phenogram and principal coordinates analysis displayed a similar pattern for grouping the 7 isolates. There was not a consistent relationship between geographical origin and grouping based on RAPD, however there was a trend to separate isolates according to the margin of Acarigua River (main river of the zone) from where they were collected. For *in vitro* evaluation, plantlets were growing into a substrate mixed with fungus mycelia and microsclerotia. Lesion length on plantlets and germination percentage were quantified. Length lesion did not show statistical differences, but germination percentage did (Pd”0.01). One sesame genotype reduced up to 40% of germination percentage (averaged on the four fungus isolates) as compared to control. One of the fungus isolates reduced up to 30% average germination

of the four sesame genotypes. For evaluating effect of root and stem ethanolic extracts on fungus, 96-wells-ELISA microplates were used. In each cell were put plant extracts and microsclerotia. Optical density at 550nm was recorded each 12 h in each well during 7 days. Root extracts inhibited up to 82% mycelial growth of two isolates. Stem extracts had a trend to promote fungus growth, but this response was variable for sesame genotype and also for fungi isolates. Metabolic characterization of extracts resulted in higher concentration of alcaloids in roots than in stems, but the contents were variable depending on sesame genotype. For stems, flavonoids were prevalent. No correlation was found for metabolic content of the extracts and effect of extracts on fungus growth. These results indicate it is difficult to manage charcoal rot by means of obtaining resistant cultivars because of the fungus variability. For generating this kind of cultivars could be necessary stratification of the area according to genetic variability of the fungus.
Keywords: *Macrophomina phaseolina,* fungus, microsclerotia.

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Quantification of Soil Quality using Remotely Sensed Indicators

Sinha Nishant K.[1], Chopra Usha K.[2], Sahoo Rabi N.[3] and Singh Anil K.[4]
[1]Indian Institute of Soil Science, Bhopal, INDIA
[2]Division of Agricultural Physics, IARI, New Delhi, INDIA
[3]Division of Agricultural Physics, IARI, New Delhi, INDIA
[4]NRM, ICAR, New Delhi, INDIA

Abstract: One of the key reasons for the decline in current rate of growth of crop production is the deterioration in soil quality. Soil quality index (SQI) is a tool to quantify the capability of soil to perform for crop production. Several soil indicator measurements are required to compute SQI. The conventional methods to measure the soil indicators are time consuming, laborious and require several facilities. The objective of this study is to predict soil quality indicators through remote sensing technique and to test their suitability for SQI estimations. A weighted nonlinear soil quality index was used to evaluate the soil quality under various cropping systems in different agro ecosystems (AES). The index integrates thirteen physical, chemical and biological soil indicators namely bulk density, total porosity, mean weight diameter, saturated hydraulic conductivity, pH, electrical conductivity, organic carbon, available potassium, available phosphorous, nitrate nitrogen, ammonical nitrogen, microbial biomass carbon, and dehydrogenase activity. Using the laboratory measured hyperspectral visible-near infra-red (VIS-NIR) spectral data, six indicators namely pH, electrical conductivity, organic carbon, available potassium, available phosphorous, and ammonical nitrogen, could be predicted with good predictive efficiency. These six predicted indicators were used along with other seven measured indicators to develop a hybrid soil quality index (HSQI) for overall soil quality. The comparison of HSQI with SQI showed non-significant differences for all cropping systems. The remotely sensed chemical quality index (RCQI), where all indicators predicted from hyperspectral data were used, was also found to be statistically comparable with the conventional chemical quality index (CQI). The validity of these results under varied agro ecosystems indicate the potential use of remotely sensed predicted indicators in soil quality index estimations.
Keywords: Crop production, soil quality index, agro ecosystems.

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Traditional Knowledge of Coastal Tribes in Curbing Climatic Change: A Case of Alibag, Maharashtra, India

Mishra Manish, Jadhav P.A. and Sinha Rajshree
Area of Ecosystem Management & Tech. Forestry, Indian Institute of Forest Management, Bhopal, MP, INDIA

Abstract: Katkari tribes of Alibag (Raigad district) acquire a unique understanding of plant genetic diversity needed to fight plant and animal diseases and their know how to breed varieties that can cope with stressed environments. Raigad district is located in the Konkan region state of Maharashtra. Katkars living in and around district posse's enough knowledge about wild varieties of edible plants. They eat several NTFPs, medicinal plants, wild roots, rhizome, seeds, fruits and mushrooms at the time of severe draught and natural calamities like flood, frost etc. They use stored wild tubers mostly Geethkanda Suran, Karonda, banana, Tikhur, etc. to fulfill their food, medicinal and nutritional requirements particularly in harsh climatic conditions. They eat various wild vegetables, bhaji like Bakli, kurdu, kevla bhaji, umber bhaji, tembur bhaji, khadsing, vajkand, Rankedi bhaji, gad fruit, Tikhur etc. during famine conditions. They also drink Kokum sharbat (liquid), Peg made of Mahua flowers etc. Indigenous practices of Katkari community of Alibag and their coping strategies to fight adverse environmental conditions were discussed in the paper.
Keywords: Indigenous, tribal, katkari, tubers, famine, environment.

ISCA-ISC-2012-1AFS-16

Occurrence of white grubs in Ground Nut growing area of Khed Taluka, Part of Northern Western Ghats (MS), India

Theurkar S.V.[1], Ghadage M.K.[2], Madan S.S.[3], Bhor G.L[4]. and Patil S.B.[1]
[1]JJT University, Rajasthan, INDIA
[2]Hutatma Rajguru Mahavidyalaya, Rajgurunagar, INDIA
[3]Dept. of Zoology, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, INDIA
[4]Life Sciences Dept., JJT University, Jhunjhunu, Rajsthan, INDIA

Abstract: The white grubs are destructive and troublesome insect pest all over the world. White grubs are called "Chaffer beetle" or "May- June beetle". White grubs have been defined as larvae of Melolonthidae (Wolcott 1933). White grubs found in Khed Taluka particularly *Holotrichia serrata* and *Holotrichia fissa.* Crop survey on farm research organized as per Tran Huy Tho, Pham Thi Vuong, Nguyen Thi Mao, Nguyen Chuc Quynh and Pham Chi Hoa (2001) during the past (Anitha 2000) and (Ranga Rao 1995). Western region of Khed Taluka is major groundnut growing area. We find the occurrence of *Holotrichia serrata* in said area, in the commercial crop growing area we observed occurrence of *Holotrichia serrata* and. *Holotrichia fissa.* The attempt has been made to observed occurrence of white grub found in Southern region of Taluka. The southern regions occupy industries area. Around this region we observe the occurrence *Holotrichia serrata* is more as compared to *Holotrichia fissa.*
Keywords: Occurrence, White grubs, Northern Western Ghats.

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Genetic Diversity for Yeild and its Components in Blackgram (V*igna Mungo l.*)

Singh M., Swarup I., Billore M. and Chaudhari P.R.
Department of Plant Breeding and Genetics, College of Agriculture, Indore, MP, INDIA

Abstract : Eventy five genotypes of blackgram were subjected to genetic divergence by using D^2 statistic. The genotypes were grouped into seven clusters by D^2 analysis. Cluster V consisted maximum accessions (21) followed by cluster VI (19) and VII (13) and cluster I consisted only 1 accession. The inter-cluster distances were greater than intra-cluster distances, revealing that considerable amount of genetic diversity existed among the accessions Cluster II had highest mean value for number of pods per plant, 1000-seed weight and seed yield per plant, cluster IV had highest value for number of seeds per plant and number of seeds per pod. The accessions IU-65-2-1 and IU-73-2-1 may serve as potential parents for hybridization programme in the improvement of yield.
Keywords: Divergence, Yield attributes, black gram.

ISCA-ISC-2012-1AFS-18

Knowledge Level of Hybrid Rice Growers in UP, India

Srivastava J.P.[1], Verma Pankaj Kumar[2] and Singh Pushpendra[3]
[1]Department of Agricultural Extension and Communication SHIATS, Allahabad UP, INDIA
[2]Dept. of Genetics and Plant Breeding, SHIATS, Allahabad UP, INDIA
[3]KAPG College Allahabad, UP, INDIA

Abstract: A study was conducted to ascertain the level of knowledge of the farmers with respect to hybrid rice (HR) production in U.P. (Sitapur and Gorakhpur districts) by KAPG College, Allahabad in the year 2009. Growers were selected a total number of 100 hybrid rice and 50 inbred rice (IR) from each district. It was found that the maximum hybrid and inbred rice grower belonged in the medium level of knowledge about varieties, nursery raising, seed sowing time, transplanting, irrigation and weed management in both the districts. The hybrid rice growers have had more knowledge as compared to inbred rice growers.
Keywords: Knowledge, hybrid rice grower and inbred rice grower.

ISCA-ISC-2012-1AFS-19

Knowledge and Training Needs of Dairy Entrepreneurs

Kumar Ajay[1] and Srivastava J.P.[2]
[1]KVK, SHIATS, Allahabad, UP, INDIA
[2]Dept. of Agricultural Extension and Communication, SHIATS, Allahabad, UP, INDIA

Abstract : The District Allahabad was purposely selected because of sufficient number of dairy entrepreneurs that existed in the District. The District consists of two regions i.e. Yamunapar and Gangapar. Two blocks from each region, i e. Chaka

and Karchana from Yamunapar, Phulpur and Bahadurpur from Gangapar were selected purposely. The 200 respondents were selected randomly from 40 villages (ten villages from each blocks) that out of these four blocks during 2009-10. Descriptive cum evaluatory research design was followed in the study. The study inferred that dairy entrepreneurs had medium level of knowledge about milk products processing and about technical aspects of dairy business. The 44.50 per cent respondent showed their inclination towards much needed training for ghee making followed by 42.50 percent rasgulla making 42.00 per cent paneer making and 38.50 per cent khoa making. Skill trainings were felt necessary in commercial quality milk products by the respondents in order to enhance their income.
Keywords: Dairy entrepreneur, knowledge about milk product.

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Ecological Impact of Genetically Modified Crops

Kansal Megha and Sangha Gurinder Kaur
Department of Zoology, Punjab Agricultural University, Ludhiana, Punjab, INDIA

Abstract: Despite the potential benefits of transgenic crops, they are also concerned regarding the possible environmental and agronomic impacts. The biosafety implications of the field release of transgenic crops have attracted global attention also. Research for analyzing the short and long term effects of transgenic crops on the environment is one of the major challenges for its safe release in developing countries which are rich sources of genetic biodiversity. Horizontal transfer of genes between soils microorganisms may be facilitated by vector DNA from genetically engineered plants resulting in disturbances in the functioning of organism that affects the soil ecology and fertility. There is a need of in depth study to address the effect of transgenic plant on non-target animals, plants and other organisms. Considering the potential impact of transgenic crops on genetic diversity, pragmatic decisions should be taken by the policy-makers not to release these crops into centers of origin, delicate ecological zones and the pockets rich in biodiversity. Therefore, the challenge will be to use scientific tools and knowledge to attempt to predict problems and solve them before they happen.
Keywords: Genetically modified crops, biodiversity, agriculture, non-target organisms.

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Capacity Building of Rural Farm Women through Training on Fruit and Vegetable Preservation in Tikamgarh District of Bundelkhand Region, India

Gautam S.S., Bisht Kamini, Sahu B.L. and Singh S.P.
Krishi Vigyan Kendra and College of Agriculture, Tikamgarh-472001, MP, INDIA

Abstract: The study was carried out to assess the effectiveness and usefulness of the training programme as perceived by the participants and gain in knowledge and skill by the rural women during training programme on fruit and vegetable preservation conducted at KVK, Tikamgarh (Madhya Pradesh). The result revealed that factors like expectations of developing knowledge and skills related to fruit and vegetable preservation motivated the participants to join the programme. Participants were satisfied with the structure and content of the training programme, training method, training schedule and level of the curriculum as well as facilities provided to them. There was substantial improvement in the knowledge level of the trainees on fruit and vegetable preservation as an outcome of the training programme.

ISCA-ISC-2012-1AFS-22

Marketing Problems of Soybean Growers in Tikamgarh District of Madhya Pradesh and their Remedial Measures, India

Singh S.P.[1], Shukla K.C.[1], Uma[2], Bisht Kamini[1] and Singh V.K.[1]
[1]J.N.K.V.V, College of Agriculture, Kundeshwar Road, Tikamgarh-472001, MP, INDIA
[2]R.B.S.College, Bichpuri, Agra-283105 UP, INDIA

Abstract: India's economy is based on the Agriculture. As the Agriculture is backbone of the economy. Agricultural reforms, introduction of new high yielding varieties, new innovations and generation of improved Agriculture production-protection technologies results in bumper Soybean production in M.P. Higher production is not the criteria to get better money returns. Well organized market facilities are the prime need. The present investigation carried out to know the marketing problems encountered by Soybean growers of Tikamgarh District of M.P. For this purpose various primary &

secondary data were collected and analyzed using proper statistical methods. The results of the study indicated that poor market facility is the prime cause of less returns. There is also the problem of middle man or brokers which cause hindrance to get appropriate price of their produce. Therefore, it can be concluded that government agencies should create well organized and high-tech market facilities, where soybean growers can sale their produce and there should be proper loan facilities for the soybean growers with nominal interest to enable the farmers.

ISCA-ISC-2012-1AFS-23

Migration: Cause and Remedial Measures- A case study of Tikamgarh District of Madhya Pradesh, India

Singh S.P.[1], Shukla K.C.[1], Uma[2], Tyagi P.K.[1] and Bisht Kamini[1]
[1]J.N.K.V.V, College of Agriculture, Kundeshwar Road, Tikamgarh -472001, MP, INDIA
[2]R.B.S.College, Bichpuri, Agra-283105 UP, INDIA

Abstract: In India 23.00 percent of population migrated for the employment in the year 1980 while in the year 2000, 31.00 percent population migrated for the same, this effect shows the increasing trends of migration. According to the Indian Institute of Human settlement, and approximately 31 crores of people will migrate for the jobs in India. From the district Tikamgarh maximum rural population migrated to Punjab, Haryana and Delhi states for their livelihood security. Therefore, to know the cause behind this migration a study was carried out in Tikamgarh district of Madhya Pradesh. Derived schedules well through the furnished with the personal interview with the farmers. Analyzed data shows that there were so many factors which were responsible to the migration i.e. small size of holdings, higher prices of inputs of the farming, scarcity of the irrigational facility, less price of the produce, lower laborers wages at local level and unavailability of employment round the year. Looking to the aforesaid constraints remedial measure may be the establishment of the well organized market, proper maximum support price of the farms production and the training programmes should be focused on low input cost production-protection technologies, soil and water conservation, small scale processing units, women empower through development of self help group on different commodities, development of medical and educational facilities at local level.

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Application of Supercritical Carbon Dioxide in Inactivation of Microorganism in Food Industry- A Practical study

Zarena A.S.[1] and K. Udaya Sankar[2]
[1,2]Department of Microbiology, University of Mysore, Mysore-570006, INDIA
[2]Food Engineering Departments, Central Food Technological Research Institute, Mysore- 570020, INDIA

Abstract: In food consumption, food borne pathogens are a serious concern around the world resulting in major loss in the food and to the food industry. Thermal sterilization methods have long been an effective way of inactivating microorganisms; however, they damage not only the microorganisms but also any heat-labile nutritive components of the food. As a consequence, novel non-thermal processes are being sought to produce high-quality foods and one such alternative technology is Supercritical carbon dioxide (SC-CO_2). Supercritical CO_2 is regarded as GRAS (Generally Recognized as Safe) by the United States – Food and Drug Administration. Using SC-CO_2 as a sterilizing agent has several potential benefits. Carbon dioxide is a non-toxic, non-inflammable and inexpensive gas and has mild critical properties (Pc = 7.38 MPa and Tc = 31ºC) and ensures food preservation, without the use of preservatives, maintaining the nutritional value and organoleptic characteristics of food. Many studies have shown the inactivation efficiency of SC-CO_2 on natural microorganisms in food materials especially in fluid foods, seafood and dairy product. SC-CO_2 exhibits antimicrobial activity toward a wide range of Gram-positive and negative foodborne pathogens, such as *Listeria monocytogenes, Staphylococcus aureus,* viruses, spores, *Saccharomyces cerevisiae, Escherichia coli and Pseudomonas aeruginosa*. The mechanism involved in microbial inactivation is related to CO_2 concentrations which cause cytoplasmic pH decrease, cell rupture, and inactivation of key enzymes and modification of cell membrane. The system has shown to be a robust, reliable and efficient solution potentially applicable at industrial scale.
Keywords: Supercritical carbon dioxide, food pathogens, sterilization.

ISCA-ISC-2012-1AFS-25

Utilisation of Interpersonal Channels in Disseminating Agricultural Innovation

Singh M.P.[1] and Srivastava J.P.[2]
[1]SMS (Ag. Ext.) KVK, Kaushambi, UP, INDIA
[2]Professor Emeritus, SHIATS, Allahabad, INDIA

Abstract: Communication is the inevitable input for development. It serves as nervous system in the community. It is also an essential bridge for the transfer of technology. The present study was conducted in one village of one block of Kaushambi district. Personal interview schedule was used for collecting the relevant information. The study revealed that people scored low to medium their communication behaviour, very few persons were found to be preferred as their opinion leader and other had very low frequency of contact. However, SMS of KVK was the most contact person as against the Gram pradhan. Interpersonal contact was found to have significant negative correlation of the size of land holding.

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Wood Characterization Studies on *Melia dubia* cav. for Pulp and Paper Industry at Different Age Gradation

Saravanan V., Parthiban K.T. and Kumar P.
Department of Tree Breeding, Forest College & Research Institute, Tamil Nadu Agricultural University, Mettupalayam - 641301, Tamil Nadu, INDIA

Abstract: The study was carried out at Forest College and Research Institute, Tamil Nadu, India using five different age gradations viz., one, two, three, four and five year old M. dubia wood samples. The samples were collected from the farm plantations raised at Kollegal, Samraj Nagar District, Karnataka to evaluate the pulpwood properties. Five age gradations of M. dubia were subjected to physical and chemical analysis coupled with strength properties in order to recommend suitable rotation age for pulp and paper production. All the five age gradations exhibited considerable differences for physical, chemical and strength properties. Considering physical properties viz., bulk and basic density, the fifth year was best. Similarly proximate analysis of five age gradations indicated the difference in chemical properties due to age. In the chemical analysis, the lignin content was moderate for all the age gradation and hence proved their suitability. Holocellulose content also differed significantly for five age gradations, holocellulose constitutes the cellulose and hemi-cellulose which is essential property for pulp and paper production. The pulp yield and kappa number analysis indicated the dominance of fifth year wood due to higher pulp yield (50.00 %) and moderate kappa number (22.00). The strength properties of five age gradation revealed the superiority of fifth year in terms of tensile index, burst index and tear index of bleached pulp. Considering all the parameters into account, the fifth year wood proved superior in terms of pulp yield, kappa number and strength properties. Hence this study recommended five year rotation for pulpwood plantation.
Keywords: *M. dubia*; Physical; Chemical; Strength properties; Age gradation; rotation age.

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Genetic Variations among Open Pollinated Families of Selected Better Trees in Melia Dubia

Kumar P.*, Parthiban K.T. and Saravanan V.
Department of Tree Breeding, Forest College & Research Institute, Tamil Nadu Agricultural University, Mettupalayam - 641301, Tamil Nadu, INDIA

Abstract: Twenty open pollinated families in Melia dubia were selected and evaluated for growth attributes and genetic divergence. The experiment was conducted at Forest College and Research Institute, Tamil Nadu Agricultural University; Mettupalayam situated at 11° 19' N longitude, 76°56' E latitude at 300 MSL during January - December 2010. The study indicated significant differences among the selected families for various growth attributes. Among 20 open pollinated families evaluated, three families viz., FCRIMD 11, FCRIMD 14 and FCRIMD 15 exhibited consistent superiority over growth periods for height, basal diameter and volume index. Genetic divergence studies resulted in grouping of the selected families into six clusters which indicated the existence of adequate genetic divergence. Among the clusters, cluster I was the largest with 10 open pollinated families. While the maximum intra cluster distance was recorded in cluster II. The intra and inter cluster distance revealed that maximum inter cluster distance was recorded between cluster I and VI which indicated the presence of wide genetic distance between Melia dubia open pollinated families. Among the various growth attributes,

volume index contributed maximum towards genetic divergence followed by plant height. These two characters could act as a reliable indicator for future improvement programme in this economically important species. Genetic analysis of the families indicated adequate variability in the population. The PCV and GCV estimates exhibited superiority of volume index followed by basal diameter and plant height. Whereas, plant height and volume index exhibited moderate heritability. The genetic advance was high for volume index followed by plant height which indicated the reliability of these two parameters for inclusion in future improvement programme.

Keywords: Melia dubia – Open pollinated families genetic divergence inter and intra cluster distance variability heritability.

ISCA-ISC-2012-1AFS-28

Technological Developments in Agriculture and Forestry

Sakargayen Mayuri[1] and Sakargayen Mohini[2]
[1]MediCaps Institute, Indore, MP, INDIA
[2]G.D.C., Khandwa, MP, INDIA

Abstract: This research paper basically deals with the technological developments in the field of agriculture and forestry. In terms of development there has been nothing but positive feedback all around the world in this field. Did you know that popular websites like www.ebay.com sell tractors, fencers, movers, livestock supply and the likes online? In terms of development we could not find any better example. And let's not forget biotechnology. Most biotechnological processes use microorganisms such as bacteria, yeasts and filamentous fungi, but vascular plants, algae and even animal tissue. Classical biotechnological processes have been used for ages in the production of food and beverages such as bread, cheese, beer and wine. The most significant work is done in treating wood. Processes like bio-pulping, bio-bleaching, enzymatic deinking, improvements in paper making, control of microbial fouling etc. The term "Green biotechnology" is biotechnology applied to agricultural processes. Various insecticides and pesticides are used for prevention of crops through microbial attack. Also the main advantages are increase in crop yield, reduced vulnerability of crops to environmental stresses, increased nutritional qualities, reduced dependence on fertilizer, pesticides and other agrochemicals. Information technology (IT) has two functions – (a) as a tool for direct contribution to agricultural productivity, and (b) as an indirect tool for empowering farmers to take informed and quality decisions. These have a positive impact on the way agriculture its other activities are conducted. Precision farming mainly uses IT to make contributions to agricultural productivity. The techniques of remote sensing using satellite technologies, geographical information systems, and agronomy and soil sciences are used to increase the agricultural output. This approach is useful where large areas of land are involved. Therefore, it is more suitable for farming taken up on corporate lines. The other benefits of IT in empowering Indian farmer are significant and remain to be exploited. The Indian farmer urgently requires timely and reliable sources of information inputs for taking decisions. At present, the farmers depend on decision inputs from conventional sources which are slow and unreliable. The changing environment faced by Indian farmers makes information not merely useful, but necessary to remain competitive. And for the education of farmers, there are various awareness programs held by governments of all the major countries. Besides this, there are separate colleges and universities for agriculture, forestry and fisheries. And universities of all the countries have their separate research and development departments whose main work is to find ways of incorporating science in this field. With this agriculture and forestry division plays an important role in import and export.

ISCA-ISC-2012-1AFS-29

Association and PCA in Chickpea (*Cicer arietinum* L.) for different dates under Irrigated Condition for Kymore Plateau and Satpura Hills, India

Shukla Niharika and Babbar Anita
Department of Genetics and Plant Breeding, Jawaharlal Nehru Agriculture University Jabalpur-482004, INDIA

Abstract: The associations of yield and its components offer important information in breeding plants. The study was conducted during *Rabi* 2010-11 under AICRP at Breeding Farm, College of Agriculture JNKVV, and Jabalpur (M.P). Correlation and path coefficient analysis were done with 30 chickpea genotypes over two seasons (early sown on 19th Nov. and late sown 24th Dec.) to find out association among characters and to assess the direct and indirect contribution of thirteen characters on seed yield. The result concluded that days to 50% flowering (0.2485*), total number of pods per plant (0.5883**), Primary branches (0.3628**), secondary branches (0.2844*) effective pods per plant (0.4926**), and biological yield (0.6842**) showed highly significant positive relationship with seed yield per plant. Likewise, under late sown characters like plant height (0.3235*), days to 50% flowering (0.625**), days to pod initiation (0.2566*),

biological yield (0.6218**) and harvest index (0.3684**) would facilitate for high seed yield. Therefore, these traits should be given due importance while developing varieties for timely and late sowing conditions in chickpea respectively whereas PCA was carried out at genotypic and phenotypic level by taking seed yield as the dependent variable in all the three environments and in pooled analysis in order to see the causal factor. The genotypic direct and indirect effects were found slightly higher in magnitude as compared to phenotypic effect direct and indirect effects.

ISCA-ISC-2012-1AFS-30

A Study on Technological and Psychological Constraints Facing by Rural Youth Regarding Agricultural Activities

Mourya Neelima[1] and Meena S.C.[2]
[1]National Food Security Mission, Khandwa, MP, INDIA
[2]AERC, JNKVV, Jabalpur Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, MP, INDIA

Abstract: There are 49 districts in Madhya Pradesh, out of which Rewa district was purposively considered for this study and Rewa block was purposively selected because Rewa block has maximum rural population (29.21%) in all over district and this study based on rural youth. The random sampling method was used in the selection of villages. Total 204 villages come under Rewa block. Out of which 6per cent or 12 villages were selected randomly on the basis of agricultural occupation in majority. The 12 villages are Sakarvat, Bankuiya, Bara, Kathar, Bamhori, Chipta, Mohni, Hardisankar, Bahuribaandh, Tikar, Bashara and Karhaiya. The data were collected with the help of a well structured interview schedule during the year 2010 – 11 and were analyzed into percentage frequency and average the relation was determined with chi-square test and correlation was assessed through correlation coefficient. Majority of respondent were between the age group of youth (24-29 years), majority of respondents belong to OBC caste followed by SC/ST. Majority of the rural youth belonged to rural families. Majority of the rural youth had medium (6-10 members) size family. Mostly rural youth were married. Majority of the rural youth had average (5-10 years) farming experience. Mostly of the respondents was medium (12000-50000 Rs.) annual income. Majority of the rural youth posses medium size of land holding. Majority of the rural youth have less source of information. Majority of the rural youth had low mass media exposure. More than half of the total youth had less contact with extension agent. Most of the rural youth had favourable attitude towards agriculture. Majority of the rural youth had high level of aspiration. Most of the rural youth had medium risk orientation. Majority of the rural youth had medium economic motivation. Most of the rural youth was firstly faced technical constraints followed by economics, other social and psychological constraints.Constraints regarding participation in agricultural activities was significantly associated with age, Marital status, type of family, size of family, mass media, contact with extension agents, attitude towards agriculture, risk orientation and level of aspiration, loan procedure should be made easy is the main suggestion given by rural youth to enhance their participation.

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Emerging Trends in Indian Agriculture

Singh Rajvir, Shahi Sudhir Kumar, Mishra D.J. and Mishra U.K.
Janta College, Bakewar, Etawah, UP, INDIA

Abstract: Green revolution has been the major success story of free India and India has been the major success story of green revolution. From a nation that was frequently plagued by famines and chronic food shortage, we are today in position where we are contending with the problem of surplus. From a food grain production around 55 million tons at the time of independence, we now boost of production of more than 250 million tonnes of food grain(2011). Agriculture has been a source of livelihood for more than two thirds of our population. Unlike developed nation, agriculture still remains the backbone of our country. To free India from its reliance on the developed nations for its food need, agriculture was promoted in a big way. Agriculture in India is not merely a business enterprise; it is more a way of life. Indian agriculture is undergoing rapid transformation since the introduction of green revolution technology. The recent policy of liberalization and globalization has opened up new avenues for agriculture modernization. This has not only stressed on improving agricultural inputs, infrastructural facilities in rural areas but liberalizing inputs reducing subsidies, loosening ceiling laws and generating agricultural surplus for home and international markets. In view of the increasing prosperity in the rural areas demands are being raised for agricultural taxation and according industry status to agriculture.
Keywords: globalization, green revolution, liberalization, self sufficiency, sustainability.

ISCA-ISC-2012-1AFS-32

Role of Bio-Fertilizer in Organic Agriculture

Mishra D.J. , Singh Rajvir, Mishra U.K. and Shahi Sudhir Kumar
Janta College, Bakewar, Etawah, UP, INDIA

Abstract: Biofertilizer is one of the best modern tools for agriculture. It is a gift of our modern agricultural science. Biofertilizers are applied in the agricultural field as a replacement to our conventional fertilizers. Conventional fertilizers contain compost; household wastes and green manure. Those are not as effective as chemical fertilizers. So farmers often try to use chemical fertilizers in the field for crop development. But obviously the chemical fertilizers are not environment friendly. They are responsible for water, air and soil pollution and can spread cancer causing agents. Moreover, they may destroy the fertility of the soil in a long run. Scientists have developed Biofertilizers to prevent pollution and to make this world healthy for everybody in a natural way. Biofertilizer contains microorganisms which promote the adequate supply of nutrients to the host plants and ensure their proper development of growth and regulation in their physiology. Living microorganisms are used in the preparation of biofertilizers. Only those microorganisms are used which have specific functions to enhance plant growth and reproduction. There are different types of microorganisms which are used in the biofertilizers. Biofertiliser being essential components of Organic farming play vital role in maintaining long term soil fertility and sustainability.
Keywords: Azospirillum, biofertilizer, cropgrowth, sustainability, VAM.

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Strategies for Sustainable Dairy Farming in India

Shahi Sudhir Kumar, Singh Rajvir, Mishra U.K. and Mishra D.J.
Janta College, Bakewar, Etawah, UP, INDIA

Abstract: Livestock production is the vital sector which action a major source of income to the impoverished rural households throughout the world. Live stock equip people with food, income, draught power and fertilizer and act as the major livelihood means of millions of our country, where crop farming faces challenges India is one among the fastest growing economics of the world and mainly depends on the agrarian sector as a tool for progress. Dairy sector is emerging as the highest contributor to the agricultural wealth of India, surpassing even cereals. India is the highest milk producing country in the world contributing 17% of the world production. The annual Milk production in India has reached 121.50 million tonnes in 2011 against the 17 million tonnes in 1951 and the annual growth rate in this sector is 4 % which is nearly three times that of the world. Sustainable dairy farming is an interaction of many factors that influence production and reproduction environment, longevity of live and input management.
Keywords: Dairy farming, livelihood, livestock, sustainable.

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Mulching: A soil and Water Conservation Practice

Patil Shirish and Bhalerao Satish A.
Environmental Sciences Research Laboratory, Department of Botany, Wilson College, Mumbai – 400007, INDIA

Abstract: India being an agriculture country should have a good respect towards conservation strategies especially of water. Already we are suffering from a great stress of water scarcity. Each and every drop of water is important for us but unfortunately because of carelessness, we often waste huge amount of water. One of such practices is over and excessive irrigation. Mulching is a soil and water conserving and weed management practice through soil solarisation also in which any suitable material is used to spread over the ground between rows of crops or around the tree trunks. This practice helps to retain soil moisture, prevents weed growth and enhances soil structure. There are various types of mulching such as surface mulching, vertical mulching, polythene mulching, pebble mulching, dust mulching live vegetative barriers, straw mulching etc. Mulching proves to be beneficiary though increment in soil moisture, reduction in soil erosion, maintenance of soil temperature etc. It helps in improvise in soil structure, soil fertility and soil biological regime. Though also mulching is having many advantages it shows some limitations as it may harbour some pests and diseases. It is not so appreciable in wet conditions. It is little bit difficult to get even mulching on steep lands. Some grass species used as mulch can root and become a weed problem. The present review deals with the discussion of every aspect of mulching and how it has beneficiary effect.
Keywords: Mulching, conservation, weeds, improvement of soil structure.

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Antimicrobial Activities of Indian Weed *Tridax procumbens* – An in vitro Study

Girase M.S.[1], Bholay A.D.[2] and Pawar K.R.[2]
[1]K.S.K.W. Arts, Science & Commerce College, CIDCO, Nashik, Maharashtra, INDIA
[2]K.T.H.M. College, Nashik-422005 Maharashtra, INDIA

Abstract : Aim of the present study was to investigate antimicrobial activity of organic solvent extracts of common Indian weed *Tridax procumbens* L.(Asteraceae) against phytopathogens. Sequential Petroleum ether and Methanol extraction of leaves of *Tridax procumbens* using Soxhlet apparatus was done. Extracts were evaluated for antibacterial activity against *Xanthomonas campestris, Pseudomonas aeruginosa* and for antifungal activity against *Aspergillus niger, Alternaria alternata, Fusarium oxysporum* and *Rhizopus oryzae.* In vitro antimicrobial activity was checked by agar well diffusion method. *Tridax procumbens* petroleum ether and methanol extracts were tested at various concentrations. Petroleum ether extract showed highest antibacterial activity against *Xanthomonas campestris* and little Antibacterial activity against *Pseudomonas aeruginosa.* It also showed little Antifungal activity against *Alternaria alternata* and *Rhizopus oryzae* while no activity against *Aspergillus niger* and *Fusarium oxysporum.* While *Achyranthes aspera* methanol extract showed highest antibacterial activity against *Pseudomonas aeruginosa* and *Xanthomonas campestris.* It also showed Antifungal activity against *Fusarium oxysporum, Rhizopus oryzae* while little activity against *Aspergillus niger* and *Alternaria alternata.* The responses were in graded manner, as concentrations decreased Antimicrobial activity also decreased. The results of the present study suggests Petroleum ether and Methanol extract of the *Tridax procumbens* leaves can be used to control plant diseases instead of chemical pesticides and it can be a source to develop a novel antimicrobial agent.

Keywords: *Tridax procumbens*, biopesticidal activity, Petroleum ether extract, Methanol extract, Antimicrobial activity.

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Role of Information Technology in Agriculture

Bohra Pratibha and Kachhwaha Gitika
Mahila P.G Maha Vidyalaya, Jodhpur, Rajasthan, INDIA

Abstract: The field of agriculture seems to have many unique characteristics that present real challenges to the provision of effective information services and its applicability of information technology in this area. Lancaster & Beecher described this uniqueness of agricultural information with four main characteristics: extreme interdisciplinary nature, Universality, Need for diverse levels of treatment and presentation, Fugitive information sources, The key players for utilization of Information Technology in Agriculture, The broad information inputs required by farmers., How Information Technology in Agricultural production, Information Technology centers for Agricultural development.

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Entomo-Fauna as Observed in Light Trap Collections in an Agro-Ecosystem near Jhunjhunu, Rajasthan, India

Sima, Asif Parvez and Meera Srivastava
Laboratory of Entomology, Post Graduate Department of Zoology, Govt. Dungar College, Bikaner 334001, Rajasthan, INDIA

Abstract: The insects are estimated to comprise more than 75% of the known species of animals and approximately 0.9 million species of insects have been described throughout the world. The insect fauna is one of the most diversified biological components of any habitat. A cropland field represents an agro-ecosystem which is the most assured food source for insects. In an agro-ecosystem insect pollinators, natural enemies, earthworms and soil micro-organisms are key biodiversity components. The role and significance of biodiversity in the functioning of agricultural systems is being recognized only recently. The agro-ecosystem in the Thar desert are specific in a number of features viz., extremes of daily annual temperatures, long sunshine hours, fewer cloudy days, shallow soils, low moisture content, dry violent winds, high evapo-transpiration rate, poor fertility of soil and in general saline nature of soil and water-logging. Insects play a significant role as pests, predators, pollinators and nutrient transformers in such a system. The present work was undertaken to study the diversity and abundance of insects trapped through light trap using 260 Watt mercury bulb in an agro-ecosystem near Jhunjhunu lying between 27º5'-28º5'N latitudes and 75º-76ºE longitudes situated in the desert region of Rajasthan. Seasonal crops are cultivated in the field and the farm is irrigated by well water. The insects collected were transferred to killing bottles, killed, preserved and identified using pertinent literature. The count of insect fauna was expressed as No./trap/night. In all, 54 insect species were documented in light trap collections. These belonged to order Coleoptera, Lepidoptera, Hemiptera, Hymenoptera, Diptera, Dictyoptera, Orthoptera, Neuroptera and

Embioptera. Based on their number, of the 15 coleopteran species observed 6 were dominant, 7 were frequent and 2 were rare forms; among 20 lepidopteran species only 2 were dominant, 11 frequent and 7 were rare forms ; the 7 hemipteran species documented were all frequently observed; of the 3 hymenopterans, 2 were dominant and one was rare; among 3 dipterans, 2 were frequent and one was a rare form; one dictyopteran was rarely observed; one orthopteran was frequently observed; of the three neuropterans, one was frequent while, the other 2 were rare forms and the only embiopteran collected through light trap was a frequent form.

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A current Scenario of Implementation of Integrated Pest Management Techniques to Combat Global Warming

Sharma Pawan Kumar, Kumar Uttam and Surabhi Shrivastava
Govt. P.G. College, Kota, Rajasthan, INDIA

Abstract : Global warming has recently been highlighted as a major threat for all the living beings on earth. In the current scenario the agriculture ecosystem significantly plays a role in global warming, indirectly, because of heavy quantities of chemical fertilizers and pesticides used to increase the yield. Through the increasing use of nitrogen fertilizer, which is added at a rate of 1 billion tons per year presently to the already existing amount of reactive nitrogen, nitrous oxide (N_2O), has become the third most important greenhouse gas after carbon dioxide and methane. For reducing above mentioned problem in agriculture ecosystem, IPM (Integrated Pest Management) is one of the most suitable programme which establishes chemical use on a need basis only. The Current study based on chickpea crop field for controlling *Helicoverpa armigera (Hub.)* through some IPM techniques during 2009-2010, revealed that first appearance of *Helicoverpa armigera* larvae in IPM treated plot was in the 2nd week of February while in control plot (with net) it was in 2nd week of January. The total grain yield in IPM plot was 15.20 q/ha whereas in control plot (with net) it was 10.12 q/ha recorded. The maximum number of larvae/10 plants in control plots (with net) was 24.0 but in IPM treated plot the maximum number of larvae/10 plants recorded as only 9.5. Hence we can combat with global warming through IPM techniques by minimizing the quantity of chemical insecticides and fertilizers.
Keywords: Integrated Pest Management, *Helicoverpa armigera,* Global warming.

ISCA-ISC-2012-1AFS-39

The Viable Count of Selected Microorganisms Using Lignite and Silver

Richa Banoria
S.N. P.G. College, Khandwa M.P., INDIA

Abstract: Isolation and screening of agriculturally important microorganism from soil and to increase the viable count of phosphate solubilsing bacteria inoculation in carrier based biofertilizer using lignite and silver earth.

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Flower numbers, pod production, pollen viability are reduced with flower and pod abortion increased in chickpea (*Cicer arietinum* L.) under heat stress

Shukla Niharika
Department of Genetics and Plant Breeding, Jawaharlal Nehru Agriculture University Jabalpur 482004, INDIA

Abstract: In chickpea (*Cicer arietinum* L.) the sowing time may vary in different locations depending on the temperatures experienced at different stages of crop development. It is well adapted within temperature range of 30/15^{0}C (day maximum and night minimum) for optimum growth and pod filling. The crop often experiences abnormally high temperature (>35^0 C) and atmospheric heat stress during reproductive stage. A large number of germplasm were physiologically characterized for thermo tolerance and screening techniques developed based on flower drop %, and pollen fertility. The objective of this research is to study the effect of high temperature during pre- and post-anthesis stages of flower development on pollen viability, flower number, pod abortion, pollen tube growth and pod set. The plants were evaluated under two contrasting environments viz., normal and late planting. For which thirty promising genotypes were grown under three replications in RBD. High temperatures reduced pod set by reducing pollen viability and increased the flower drop percentage. Pollen from tolerant promising lines (ICC 3325 and JG 21) was fully viable at 35/20°C. The result obtained from present investigation suggested that selection for physiological traits such as pollen viability could not only improve the heat tolerance of chickpea but can also boost up the crop production under climate change, in addition to pod abortion, flower abortion is an important factor limiting yield in chickpea.

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Morphostructural damage in food spoiling bacteria due to folk medicinal plant (*Cymbopogon citratus*) oil and its vapour

Tyagi Amit Kumar and Malik Anushree
Applied Microbiology laboratory, Centre for Rural Development and Technology, Indian Institute of Technology Delhi, New Delhi, INDIA

Abstract: In this study, antimicrobial activity and morpho-structural damages due to the *Cymbopogon citratus* oil and its vapour against *Escherichia coli* strains were investigated. Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) of *C. citratus* oil were determined by broth dilution method to be 0.288 mg/ml and 0.567 mg/ml, respectively. Further, Zone of inhibition (45 mm) due to the vapour phase antimicrobial efficacy evaluated using disc volatilization assay was compared with disc diffusion assay (direct assay) in liquid phase (i.e. 13.5 mm for the same dose of oil). The Chemical analysis of the *C. citratus* oil and its vapour has been done by Gas chromatography-Mass spectrometry (GC-MS) and Solid Phase Micro Extraction Gas chromatography- Mass spectrometry (SPME GC-MS), respectively. GC-MS analysis revealed that *C. citratus* oil was dominated by oxygenated monoterpenes (78.2 %); á-citral (36.2 %) and â-citral (26.5 %), monoterpene hydrocarbons (7.9 %) and sesquiterpene hydrocarbons (3.8 %). In *C. citratus* oil vapour, a total of 13 compounds being b-myrcene (23.7 %), á-pinene (19 %), á-citral (8.3 %), â-citral (7.7 %), a-terpinolene (3.9 %), a-cyclocitral (1.4 %), b-citronellal (1.3 %), and cineole (1.1 %) were identified. The percentage of monoterpene hydrocarbon varied in *C. citratus* oil and *C. citratus* oil vapour. The morphological and ultrastructural alterations in *C. citratus* oil and *C. citratus* oil vapour treated *E. coli* cells were studied using Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM) and Atomic Force Microscopy (AFM). In SEM observation, *C. citratus* oil treated cells appeared to be aggregated and partially deformed while *C. citratus* oil vapour treated cells lost the turgidity and the cytoplasmic material completely leaked from the cells. In TEM observation, extensive internal damage (intra-cytoplasmic changes) and various abnormalities were observed in *C. citratus* oil vapour treated cells than *C. citratus* oil treated cells. Significant variations in the height (i.e. 450 nm, 14 nm and 7 nm) and root mean square (rms) values (i.e. 1.86 nm, 2.33 nm and 3.32 nm) of untreated, *C. citratus* oil and *C. citratus* oil vapour treated *E. coli* cells were noticed by AFM. Present results indicate that *C. citratus* oil is highly effective against *E. coli* in vapour phase.
Keywords: *Cymbopogon citratus*; *E. coli*; SPME GC-MS; GC-MS; SEM; TEM; AFM**.**

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Role of soil fungus in the enhanced biodegradation of pinoxulam, a rice herbicide in agricultural soil

Sondhia Shobha[1] and Rajpur Smita[2]
[1] Senior Scientist, *Department of Chemistry,* Directorate of Weed Science Research, Indian Council of Agricultural Research, Jabalpur 482004, M. P., INDIA
[2] Student, *Department of Microbiology,* Mata Gujri Women's College, Jabalpur M.P., INDIA

Abstract: Penoxsulam(3-(2,2-difluoroethoxy)-N-(5,8-dimethoxy[1,2,4]triazolo[1,5-c]pyrimidin-2-yl)-á,á,á-trifluorotoluene-2-sulfonamide) is a new acetolactate synthase (ALS) inhibitor herbicide for post emergence control of weeds in rice crop. Owing to soil residual phytotoxicity of ALS inhibitors in number of crops and higher persistence in soil, present investigation was proposed to isolate and identify pyrazosulfuron-ethyl degrading fungi from agricultural soil. Pinoxulam degrading soil fungi were isolated from field soil where the herbicide had been sprayed to control weeds in rice field. Two fungi, *Aspergilus niger* and *A. flavus*, were identified, as pinoxulam degradating fungi. Pinoxulam was gradually degraded by *Aspergilus niger* and *A. flavus* in the soil under field and laboratory conditions. The rate of pinoxulam dissipation was higher in unsterilized soil than sterilized soil, showed important route of degradation of pinoxulam by microbes. Microbial route of degradation of pinoxulam by *Aspergillus niger* and *A. flavus* was characterized. Degradation of pinoxulam by fungi yielded several major and minor metabolites which were further identified and characterized by LC/MS/MS. Therefore, this study demonstrated that selected fungi could be used to bioremediate contaminated soil.
Keywords: Biodegradation, pinoxulam, herbicide, *Aspergillus niger*, *A. flavus*p.

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Enhanced biodegradation of pyrazosulfuron-ethyl in soil of rice field

Shobha Sondhia[1], and Uzma Khan [2]

[1] Senior Scientist, *Department of Chemistry,* Directorate of Weed Science Research, Indian Council of Agricultural Research, Jabalpur 482004, M. P., INDIA

[2] Student, *Department of Microbiology,* Mata Gujri Women's College, Jabalpur, (M.P.),

Abstract: Due to phytotoxicity of some of sulfonylurea class of herbicides in number of sensitive crops and higher persistence in soil, present investigation was proposed to isolate and identify pyrazosulfuron-ethyl degrading fungi from rice field. Pyrazosulfuron-ethyl (Ethyl-5-[(4,6-dimethoxypyrimidin-2-ylcarbamoyl)sulfamoyl]-1-methylpyrazole-4-carboxylate) degrading soil fungi were isolated from soil of rice field. *Penicillium chrysogenum* and *Aspergillus niger*, were identified, as pyrazosulfuron-ethyl degradating fungi. Pyrazosulfuron-ethyl was gradually degraded by *P. chrysogenum* and *Aspergillus niger*, in the soil under rice field and laboratory conditions. The rate of pyrazosulfuron-ethyl dissipation was higher in unsterilized soil than sterilized soil, showed important route of degradation of pyrazosulfuron-ethyl by microbes apart from chemical degradation. Microbial route of degradation of pyrazosulfuron-ethyl by *P. chrysogenum* and *Aspergillus niger* was characterized. Degradation of pyrazosulfuron-ethyl by *P. chrysogenum* and *Aspergillus niger*, yielded several major and minor metabolites which were further identified and characterized by LC/MS/MS in positive and negative mode. Study demonstrated that selected fungi or mixed microbial consortium could be used for soil bioremediation.

Keywords: Biodegradation; pyrazosulfuron-ethyl; herbicide; *Penicillium chrysogenum; Aspergillus niger.*

ISCA-ISC-2012-2AVFS-01

Effects of Dietary Phytase from Different Bacterial Sources on Growth and Phosphorus Utilization of tilapia *Oreochromis mossambicus*

Rande B. Dechavez[1] and Augusto E. Serrano[2]
[1]College of Fisheries, Sultan Kudarat State University, Kalamansig, Sultan Kudarat 9808, PHILIPPINES
[2]Inst. of Aquaculture, College of Fisheries and Ocean Sci., Uni. of the Philippines Visayas, Miag-ao 5023, Iloilo, PHILIPPINES

Abstract: This study was conducted at the Institute of Aquaculture Hatchery and Biology Laboratory, University of the Philippines Visayas, Miag-ao, Iloilo. This aims to determine the effects of different bacterial phytases from *Bacillus* spp. supplemented to tilapia diet on growth, feed utilization and nutrient deposition of tilapia mossambica fingerlings under laboratory conditions for 60 days. Diets were supplemented with 500 FTU kg^{-1} of *B. pumilus*, *B. megaterium* and *B. licheniformis* phytases while diet without supplementation and the commercial diet served as negative and positive controls, respectively. Results of the study showed that growth of fish fed diets containing bacterial phytases was superior to those of the negative and commercial diets, although no significant differences were observed. Fish fed diets supplemented with *B. megaterium* phytase displayed the highest FCE, PER and protein retention than did fish fed the other diets. Fish fed diets containing different bacterial phytases exhibited higher ash, P, Ca and Mg concentrations in scales, bone and vertebrae than those fish fed diets without supplementation and the commercial diet. Fecal P concentrations were lower in fish fed the supplemented diets which could consequently reduce the estimated excretion of P effluent by 36% and 29% compared to fish fed diets without supplementation and commercial diet. Phytase from *B. megaterium* was the most effective in improving bioavailability of phytate P in sex reversed tilapia and may possibly reduce or eliminate the use of P_i supplementation in their diets.
Keywords: Phytic Acid, phytase, phosphorus, enzyme, *Bacillus spp.*

ISCA-ISC-2012-2AVFS-02

Morphological Analysis of Mudcrab (*Scylla sp.*) in Southern Mindanao

Julie E. Albano
Sultan Kudarat State University Kalamansig, Sultan Kudarat, PHILIPPINES

Abstract: Morphological evaluation of 76 mudcrab samples was conducted at the Institute of Fisheries field laboratory of Sultan Kudarat Polytechnic State College to identify and evaluate the degree of morphological differences of *Scylla* sp. and identify and compare variations among different species from different sources and evaluate feeding behavior and meat quality of the different species of mudcrab (*Scylla sp).* Morphological analysis, based on the qualitative (color and shape of the carapace and pigmentation of the cheliped) and quantitative traits (length of carapace, length of swimming leg, length of paddle and width of the carapace) were used to analyze the samples. Results of the morphological evaluation identified 3 species namely *Scylla serrata*, *Scylla olivacea* and Scylla *tranquebarica*. These species were found in Cotabato, General Santos, and Lebak, Sultan Kudarat. *Scylla tranquebarica* was absent in Davao while only one species thrives in Surigao del Sur. For sensory evaluation, mudcrabs from Lebak (regardless of spines) are generally more acceptable in terms of taste, odor and texture.In terms of feeding behavior, *Scylla serrata* was observed to have the highest weight gain with any of the feeds (Snail, Bivalve, Trash fish and combination of Snail and Bivalve). The mean size of the different mudcrab samples showed significant difference among species but not among sexes. This indicates that male and female of the same stage may display same sizes. The percent weight gain showed significant difference in terms of species response to the kind of feeds given. *Scylla serrata* showed the highest weight gain regardless of the kind of feed provided. This implies the species could be used as material for culture and production because of its fast growth and food preferences. Evaluation of sizes revealed that significant difference is manifested among species. *Scylla serrata* were found to be bigger when compared to the other two species. However, sizes in male and female do not show any significant difference. The highest rating (80%) of molted crabs is manifested in all species feed with combination of bivalve and snail. Result showed that species *Scylla serrata* as compared to *Scylla olivacea* and *Scylla tranquebarica response* faster to the given feed. This is attested by highest percentage of molting crabs. This indicates that combination of snail and bivalve could enhance growth of mudcrab regardless of species. Meat quality evaluation revealed that mudcrab collected from Lebak, are of better quality and was rated more acceptable in terms of texture, odor and taste, when compared to other sources. The high quality of mudcrab in Lebak could be attributed to the good water quality of the area. The area is characterized by absence of discharge of effluent and the abundance of shells as source of food.

ISCA-ISC-2012-2AVFS-03

Abundance and distribution of Shipworm, *Kuphus polythalamia* in Barangay Sta. Clara, Kalamansig, Sultan Kudarat

Julie E. Albano[1] and Emmanuel E. Albano Jr.[2]
[1]Sultan Kudarat State University, Kalamansig, Sultan Kudarat, PHILIPPINES
[2]Cebu Institute of Medicine, Cebu City, PHILIPPINES

Abstract: Large size shipworms identified as *Kuphus polythalamia* were found sprouting on the seafloor of the coastal barangay of Sta. Clara, Kalamansig, Sultan Kudarat. The unique size and habitat of these shipworms lead to the study of their abundance and distribution on November 2010. Three stations were set up in a 100 m x 100 m area. Selected physicochemical and biological parameters were measured using protocols adapted from Australian Institute of Marine Science (1994). The water's physicochemical factors were generally within normal ranges. The muddy substrate had pH that ranged from 6.93 – 7.20; a high average nitrogen content of 3.50% -3.83%, and low phosphorus content of 11.67 – 15.67 ppm. Abundance was highest at Station 3 with total of 95 individuals and lowest at Station 1 (15 individuals), with sizes ranging from 50 cm- 104 cm. Except for depth and abundance, there were no other significant differences across stations. Likewise, there were no significant correlations between abundance and physicochemical parameters. The results of this study were compared with a similar study done in an adjacent area. T-test results showed significant differences (á = 0.05) between the two study sites for nitrogen (p = 0.017), phosphorus (p = 0.003), soil pH (p = 0.001), bottom temperature (p = 0.003) and depth (p =0.001), but not for abundance. The non-significant and low correlation between the physicochemical parameters and abundance, within and between study areas, could mean that abundance and distribution of *K. polythalamia* were more influenced by the presence of wood in the substrate than by the physicochemical factors. For more conclusive results, a detailed sampling on the physicochemical and biological aspects is strongly recommended.
Keywords: Shipworms, *Kuphus polythalamia,* physicochemical, biological.

ISCA-ISC-2012-2AVFS-04

DNA fingerprinting and Quality Association of Mudcrab (*Scylla sp.*) in Southern Mindanao

Julie E. Albano[1] and Emma K. Sales[2]
[1]Sultan Kudarat State University, Kalamansig Campus, Kalamansig Sultan Kudarat, PHILIPPINES
[2]University of Southern Mindanao, Kabacan Cotabato, PHILIPPINES

Abstract: Morphological evaluation of 76 mudcrab samples was conducted at the Institute of Fisheries field laboratory of Sultan Kudarat Polytechnic State College to identify and evaluate the degree of morphological differences of *Scylla* sp. and correlate it to DNA analysis, identify and compare variations among different species from different sources and evaluate feeding behavior and meat quality of the different species of mudcrab (*Scylla sp).* Molecular analysis of mudcrab samples was conducted at the University of Southern Mindanao Genetics and Molecular Biology Laboratory, USM, Kabacan, Cotabato, to determine genetic characteristics of the different *Scylla sp.* Morphological analysis, based on the qualitative (color and shape of the carapace and pigmentation of the cheliped) and quantitative traits (length of carapace, length of swimming leg, length of paddle and width of the carapace) were used to analyze the samples. Results of the morphological evaluation identified 3 species namely *Scylla serrata*, *Scylla olivacea* and *Scylla tranquebarica*. These species were found in Cotabato, General Santos, and Lebak, Sultan Kudarat. *Scylla tranquebarica* was absent in Davao while only one species thrives in Surigao del Sur. For sensory evaluation, mudcrabs from Lebak (regardless of spines) are generally more acceptable in terms of taste, odor and texture. In terms of feeding behavior, *Scylla serrata* was observed to have the highest weight gain with any of the feeds (Snail, Bivalve, Trash fish and combination of Snail and Bivalve) The mean size of the different mudcrab samples showed significant difference among species but not among sexes. This indicates that male and female of the same stage may display same sizes. The percent weight gain showed significant difference in terms of species response to the kind of feeds given. *Scylla serrata* showed the highest weight gain regardless of the kind of feed provided. This implies the species could be used as material for culture and production because of its fast growth and food preferences. Evaluation of sizes revealed that significant difference is manifested among species. *Scylla serrata* were found to be bigger when compared to the other two species. However, sizes in male and female do not show any significant difference. The highest rating (80%) of molted crabs is manifested in all species feed with combination of bivalve and snail. Result showed that species *Scylla serrata* as compared to *Scylla olivacea* and *Scylla tranquebarica response* faster to the given feed. This is attested by highest percentage of molting crabs. This

indicates that combination of snail and bivalve could enhance growth of mudcrab regardless of species. Meat quality evaluation revealed that mudcrab collected from Lebak, are of better quality and was rated more acceptable in terms of texture, odor and taste, when compared to other sources. The high quality of mudcrab in Lebak could be attributed to the good water quality of the area. The area is characterized by absence of discharge of effluent and the abundance of shells as source of food. Molecular evaluation using SSR and AFLP markers showed similar bands for all the samples tested. This implies that these mudcrab samples tested are the same and cannot be classified into 3 species in contrast to the results of morphological evaluation. These conflicting results need a more thorough evaluation to confirm or negate either of the conflicting results. It is therefore recommended that additional marker system be employed.
Keywords: Morphological, *Scylla sp., sensory* evaluation, Molecular evaluation.

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A report of Mantid (Insecta : Mantodea) fauna in Mizoram, North East India

Harit Daya Nand
Department of Zoology, Government Champhai College, Mizoram-796 321, INDIA

Abstract: Mantids are commonly known as Praying Mantis, and are predaceous in nature, feed voraciously on other small insects of agriculture and forests significance. They have movable triangular head bearing large compound eyes. Antennae are long and filiform. They have biting type of mouth parts. Their prothoracic legs are raptorial and modified for grasping and capturing the pray. Mizoram is one of the North Eastern Hill states of India lies between $21^0$58'-$24^0$30'N and $92^0$16'-$93^0$25'E, with an area of 21,081 sq. km. having rich biodiversity and lies under the biodiversity hot spots of the world / India. There has been no report on mantid fauna of the area and also has not been included in Fauna of Mizoram, 2007, published by the Zoological Survey of India. It has therefore been decided to make an inventory on Mantid fauna of the area for the first time. This paper highlights the Mantid Fauna observed and recorded over a period of one year at Champhai district of Mizoram state, North East India.
Keywords: Mantids, biodiversity, Fauna.

ISCA-ISC-2012-2AVFS-06

Effect of Azodrin on the testes of the Earthworm Eudichogaster Kinneari (Stephenson): A Histological and Histochemical Profile

Lakhani Leena
Department of Zoology, Govt. Girls P.G. College, Ujjain, MP, INDIA

Abstract: Earthworms being terrestrial invertebrate animals generally live in upper surface of the earth, they are found in those places where organic food and moisture is present and have to face the effect of pollutants always with many others. Earthworms are of enormous ecological importance to mankind, particularly in his agricultural endeavors. They make significant contribution in the recycling of organic fertilizers, in this way they are helpful in maintaining soil structure, aeration and fertility. Pesticides used in gardens and on crop fields to control undesirable insects and diseases may be toxic to earthworms. Adult earthworms Eudichogaster kinneari were exposed to a safe concentration (0.05 ppm) of Azodrin for twenty days to evaluate the effect on different stages of spermatic follicles. Spermatogenesis was severely affected by exposure of above insecticide causing degeneration in tissues of spermatic follicles due to clumping, vacuolization and necrosis,. Changes in histochemical reaction and significant reduction in size of spermatic follicles ($p<0.001$) were also observed.
Keywords: Eudichogaster kinneari, Insecticide, Azodrin, Histomorphology, Histochemistry, testis.

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Effect of Withdrawing Long Day in the Subtropical Female Tree Sparrow

Singh Namram S. and Dixit Anand S.
Avian Endocrinology and Chronobiology Laboratory, Department of Zoology, North-Eastern Hill University, Shillong, INDIA

Abstract: Experiment was performed to study the effect of withdrawing long day on serum levels of estradiol- 17â in the subtropical population of female tree sparrow (*Passer montanus*). Photosensitive birds when transferred to 14L/10D (close to longest day length at Shillong) for 30 days showed increase levels of estradiol-17â. These birds were then divided into 3 groups and transferred to 12L/12D (Equinox day length), 9L/15D (close to shortest day length at Shillong) and a control (C) group was maintained under 14L/10D for another 90 days. Observations on estradiol levels in blood serum at 30 days intervals revealed increased and then decreased in the birds of control group and 12L/12D. On the other

hand, estradiol levels decreases upon their transfer to short days. These results clearly suggest the involvement of endogenous circadian rhythm and its interaction with the day length in timing reproduction in the female tree sparrow.

ISCA-ISC-2012-2AVFS-08

Plasma Progesterone Levels of Corpus Luteum during Pregnancy in Microchiropteran Bat *Hipposideros Speoris* (Schneider)

Watkar A.M. and Barbate M.P.
Department of Zoology, Bhalerao Science College, Saoner, Dist. Nagpur, Maharashtra, INDIA

Abstract: The peripheral plasma progesterone concentrations were measured by radio immunoassay during the complete life span of corpus luteum in the Microchiropteran bat, Hipposideros speoris (Schneider). Soon after the ovulation during mid December all the females in the colony become pregnant irrespective of their age. Hence the corpus luteum formed during estrus period itself forms corpus luteum of pregnancy. Due to sinistral dominance the ovulation was restricted exclusively to the left side of the ovary and consequently the corpus luteum was formed in the same ovary every time and the progesterone concentration found to be 16.8 ng/ml. Two types of corpus luteum intra-ovarian and extrovert have been observed. Some of the specimens collected during December and January showed an intra-ovarian large corpus luteum occupying major part of the ovary whereas in the other it was extrovert appearing as an umbrella during late December and the progesterone valus was elevated to 20.2ng/ml. During early January it reaches its maximum size just prior to implantation of the blastocyst, when it mushrooms out into a nearly spherical ball, with its main bulk projecting out from the ovarian surface and the progesterone level was 28.8ng/ml. It develops maximally by the time the blastocyst reaches the uterus (mid-January) and was nearly as large as rest of the ovary attached to it by small pedicle, the progesterone level was rose and remained high till the regression (30.3 ng/ml). The commencement of regression of the corpus luteum was synchronised with the formation of the early trophoblastic placenta with shrinkage in its size was noticed until it occurred as a small stump projecting from the surface of the ovary at the time when the chorio-vitelline placenta was well established during early and mid-February and a fall in the mean progesterone level was noted (3.1 ng/ml). The progesterone concentration rose steeply (30.1 ng/ml) and reached a plateau till March and April. Soon after the establishment of the chorio-allantoic placenta the corpus luteum became fibrous and was restricted to a corner. It was reabsorbed during mid-pregnancy (late March) and by late gestation (late April) it was completely lost in the stroma.
Key Words: Plasma progesterone, Hipposideros, corpus luteum, pregnancy.

ISCA-ISC-2012-2AVFS-09

Distribution of *Calliophis melanueus, Boiga trigonata, Coluber gracilis* and *Coronella brachyura* in Western Region of Khed Tahsil, India

Ghadage M.K.[1], Theurkar S.V.[2], Madan S.S.[2], Bhor G.L.[3] and Patil S.B.[1]
[1]JJT University, Rajasthan, INDIA
[2]Department of Zoology, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, INDIA
[3]Department of Life Science, Hutatma Rajguru Mahavidyalaya, Rajgurunagar, INDIA

Abstract: Reptiles are termed as cold blooded, meaning that their body temperature varies with the outside temperature reptiles have low metabolic rate & there for produce less heat than a mammals or birds of comparable size .they have poor body insulation and cooling mechanism as they lack sweat glands yet they have considerable capacity for regulating their body temperature (Daniel 2002). The Western region is commercial crop growing area of Khed Tahsil. The present study observed in which 04 species belonging to 01 Order, 02 Families of 04 Genera were recorded during June 2010 to May 2011. The *Calliophis melanueus, Boiga trigonata, Coluber gracilis* and *Coronella brachyura* species are rare in Khed Tahasil which is part of Northern western Ghats, Pune (MS).

ISCA-ISC-2012-2AVFS-10

Pathogenic Microorganisms in Excreta of Free-Living Common Birds of Agroecosystems

Kaur Navdeep*, Dhanju C.K. and Gangwar Madhurama
Department of Zoology, PAU, Ludhiana, INDIA

Abstract: Microbial species can interact with birds in many different ways. Some are commensals, some are beneficial while some are avian pathogens. The excreta of free living common bird species (blue rock pigeon, rose ringed parakeet, common myna, house crow, cattle egret and red wattled lapwing) of agroecosystems was tested for the presence of fungi

(moulds and yeast) and bacteria (*Enterobacteriacae* family). The excreta samples of all six species of birds contained pathogenic moulds. *Aspergillus* (especially *A. fumigatus*) was detected in all six species studied. The prevalence of *A. fumigatus* was highest (86.7%) followed by *A. niger*, *A. flavus* (46.7%) , *Alternaria* sp. (33.3%) and *Geotrichum* sp. (20%) in the diverse excreta samples studied. The yeast *Cryptococcus neoformans* was isolated from fresh and dry excreta of blue rock pigeon and fresh excreta of house crow only. 73% of excreta samples showed presence of *E.coli* and 64% were positive for *Citrobacter freundii, Enterobacter cloacae* and *Kleibsella pneumoniae*. Thus the excreta of these bird species contains pathogens which may be harmful (mould *Aspergillus*) to these animals themselves as well as others like yeast *C. neoformans,* bacteria *C.freundii, E. cloacae, E.coli* and *K. pneumoniae* which may be a source of infection to human beings as well as may be harmful to birds themselves.

Keywords: Microorganisms, fungi, moulds, yeast, bacteria, common birds, agroecosystems

ISCA-ISC-2012-2AVFS-11

Role of Cerebral Ganglia in the Rate of Oxygen Consumption of Freshwater Bivalve Mollusc, L*amellidens Corrianus* from Godavari River during Monsoon Season

Jadhav Mangesh[1], Bawane Vasant[2] and C.S. Deshmukh[2]
[1]Jeevan vikas Mahavidyalay, Shivoor, Tq Vaijapur Dist Aurangabad 431116, INDIA
[2]Sant Bahinabai college, Shivoor, Tq Vaijapur Dist Aurangabad 431116, INDIA

Abstract: Considering the importance of neuro endocrine regulation on the metabolic processes in Lamellibranch molluscs, from freshwater environments, we report here the role of cerebral ganglia in respiratory metabolism of freshwater bivalve molluscs, *Lamellidens corrianus* from Godavari river at Paithan near Aurangabad India. The adult bivalve molluscs, *Lamellidens corrianus* of 67-73 mm shell length and 9.992-11.798 gm body weight were subjected to (a) control (normal) (b) removal of both cerebral ganglia (c) injection of their cerebral extract to intact control as well as (d) injection of their extract to ganglia removal bivalves and (e) injection of ice- cold distilled water to normal control for 12 days. The rate of oxygen consumption in bivalves from all four groups (including control) was measured on 2nd, 7th and 12th day. The study revealed that, the rate of oxygen consumption was significantly increased in cerebral ganglia removed, as well as cerebral ganglionic extract injected to ablated group on 2nd, 7th and 12th day compared to control. The rate also showed significant increase in injection of extract to normal control 2nd, 7th and 12th day.

Keywords: Injection of cerebral ganglionic extract, oxygen consumption, freshwater bivalve, Godavari river, *Lamellidens corrianus* .

ISCA-ISC-2012-2AVFS-12

Biodiversity Conservation of National Chambal Sanctuary with Special Reference to Bhareh Site (Panchnada) Area, India

Tripathi Ashish and Gupta Manishi
Dept. of Zoology, Janta College, Bakewar, Etawah, INDIA

Abstract: Panchnada as the name indicates, is an unique natural site in northern india where five big and important rivers meet together viz. Yamuna, Chambal, Sindh, Quari and Pahuj. It is the tailpoint of national Chambal sanctuary declared by the government of India (1987). In the past two decades management and conservation of natural resources has been recognized as one of the most important human activities and goals so as it may yield sustainable benefits to the present generation while maintaining its potential to meet the needs of future generations.

Keywords: Biodiversity, Panchnada, Conservation, Natural resources.

ISCA-ISC-2012-2AVFS-13

Diversity of Spiders in Pohara Range of Hills in Amravati District, MS, Central India

Santape G.B. and Chikhale M.P.
Rajarshree Shahu Science College Chandur Rly Dist. Amravati, Maharashtra 444904, INDIA

Abstract: Pohara range of hills in Amravati district (Maharashtra) is located between 200 57 N and 770 57/ E. The total area is about 802 km. This includes five protected forests and six reserve forests. Pohara Malkhed Reserve forest encompasses 750 to 800 hect. From this forest 193.704 hec is a 'A' class forest and 424.506 hec. is 'C' class forest and is bordered from western side by Amravati city.There is urgent need to focus on biodiversity of Pohara range for long term conservation. In short period study, we documented a total of 98 samples were obtained 62 adult spiders were

collected representing 16 families, 34 genera and 41 species. The spider diversity was in the order of Araneidae > Salticidae>Oxyopidae>Thomisidae. Many threats to spider diversity have been documented, including habitat loss and degradation due to deforestation and grazing. The data generated in this investigation will help forest department for future management of biodiversity in Pohara range

Keywords: Spider diversity, Pohara range, Maharashtra, India

ISCA-ISC-2012-2AVFS-14

Bioaccumulation of Cadmium Chloride in *Lebistes reticulatus* (GUPPY)

Khan Sabiha
Department of Zoology, Govt. Colleg, Ajmer, INDIA

Abstract: The residual accumulation of heavy metal cadmium chloride in liver and kidney tissues of guppy was studied. The maximum accumulation of cadmium chloride was observed in liver and kidney tissues respectively. The rate of accumulation was positively related with concentration of the toxicant and the period of exposure.

ISCA-ISC-2012-2AVFS-15

Effect of Thuricide on Growth of *Diacrisia obliqua* (Lepidoptera: Arctiidae)

Gupta Lalit and Khattri S.N.
[1]Dept. of Zoology, Janta College, Bakewar Etawah, INDIA
[2]Dept. of Zoology, D.B.S. College, Kanpur, INDIA

Abstract: *Diacrisia obliqua* Walker (Lepidoptera: Arctiidae) is a phytophagous insect causing great loss to different crops. To control this pest different concentrations of Thuricide (a bacterial preparation) were administered by Leaf Dip Method (LDM) and Topical Method (TM). It was observed that thuricide reduces the biomass accumulation in larva, pupa and adults. It was also found that thuricide is more effective under LDM.

ISCA-ISC-2012-2AVFS-16

Occurence of Regular Echinoid from Bagh Beds, MP, India

Khatri Amrita[1], Pathrade Mamta[1] and Lakhani Leena[2]
[1]Department of Zoology, M.J.B. Govt. Girls P.G. College, Indore, MP, INDIA
[2]Department of Zoology, Govt. P.G. Girls College, Ujjain, MP, INDIA

Abstract: Collection of fossils from Bagh Beds of District Dhar, (M.P.) has been done. Among them some regular echinoid fossils have been observed. Echinoid inhabited sea since late ordovician period about 450 million years ago. They had circular profile, radial symmetry and test with tubercles. One of the collected but rare echinoids fauna "Cyphosoma''. The genus has been recorded for the first time from the new locality. The study deals about the mode of life and the environment in which they lived.

Keyword: Bagh Beds, Echinoid, Cyphosoma.

ISCA-ISC-2012-2AVFS-17

Biodiversity Conservation of Macro Invertebrate Fauna near Yamuna River at Dibholi ghat, Chakarnagar (Dist. Etawah), India with Special Reference to its Insect Population Dynamics

Gupta Manishi[1], Tripathi Ashish[1] and Kapoor Chetan[2]
[1]Dept. of Zoology, Janta College Bakewar, Etawah, UP, INDIA
[2]Dept. of Zoology, M.G.P.G. College, Firozabad, UP, INDIA

Abstract: Insects constitute the dominant group in the animal kingdoms and also a major part of global diversity. Because of their small size, aerial mobility, dispersal adoptability and evolved features of Insects they are found in all biogeogrphical regions and ecological zones and have a dominating influence on total biodiversity. Yamuna river is a big tributary of Panchnada area. Biodiversity of Dibholi ghat is totally untouched till now and it is also a touch point of National Chambal Sanctuary declared by Govt. of India (1987). During our regular survey various fauna were encountered including Arthropods (insect, crustaceans) and Molluscs near river Yamuna. It was observed that insects were more abundant species then other faunal diversity at our all selected sites and they play an important role to maintain river ecosystem.

Keywords: Yamuna river, Biodiversity, fauna, abundant species**.**

ISCA-ISC-2012-2AVFS-18

Accumulation of Arsenic in Muscle Tissue of Freshwater Fish

Hundal S.S. and Saini A.K.
Department of Zoology, Punjab Agricultural University, Ludhiana 141004, INDIA

Abstract: Fish is a useful bio-indicator of metal pollution with its muscle tissue being most frequently used for analysis as it is a major target tissue for metal storage and is the main edible part. High concentration of arsenic in groundwater of south-western provinces of Punjab, India has become a major cause of concern. Monitoring arsenic levels and their associated health effects in fish and other aquatic organisms would not only provide an insight into overall ecosystem health but may also act as a sentinel for potential impacts on human health. Freshwater fish was captured from natural sites with known constant elevated levels of arsenic of 12-13 µg/L and brought to laboratory with an objective to analyze fish muscle tissue for arsenic. Muscle tissue was taken and tested on AAS after being subjected to wet acid digestion. Highest level of arsenic recorded was 205 µg/g with a mean concentration of 172.3±22.4 µg/g as compared to average value of 93.3±13.1 µg/g in control. However, intensive study is required in terms of estimated weekly intakes before extrapolation of possible risks to human health.
Keywords: Arsenic, accumulation, muscle fish.

ISCA-ISC-2012-2AVFS-19

In vitro study of the spermatozoa motility in the lizard *Eutropis carinata*

Divya D. and M. Bhagya
Department of Zoology, University of Mysore, Manasagangotri, Mysore-570 006, INDIA

Abstract: An *in vitro* study was undertaken to observe the changes in the patterns of motility of the testicular spermatozoa incubated with luminal contents of different regions of the epididymis and the vas deferens in the lizard *Eutropis carinata* for the first time. Spermatozoa from the testis, different regions of the epididymis and the vas deferens exhibited 10 different patterns of motility (a-j). About 62.2% of testicular spermatozoa exhibited no movement (a). About 63.56% of anterior epididymal spermatozoa showed slow movement in the head region (b). In the middle epididymis, 34.70% of the spermatozoa showed fast movement in the head (c) and 28.48% of them showed wavy movement in the tail principal piece (d). Spermatozoa of posterior epididymis (84.34%) and the vas deferens (94.99%) showed rotating fast forward movement (h). The non motile spermatozoa from the testis exhibited different patterns of motility, when incubated with the luminal contents of different regions of the epididymis and the vas deferens. Testicular spermatozoa incubated with the anterior epididymal luminal contents, 52.77% showed slow movement in the head region (b) which was similar to that of the spermatozoa of the anterior epididymis. Testicular spermatozoa incubated with the middle epididymal luminal contents showed faster movement in the head region (c) (33.56%) and wavy movement in the tail principal piece (d) (55.23%) which were almost similar to that of the spermatozoa of the middle epididymis. Unlike the spermatozoa of the middle epididymis, testicular spermatozoa incubated with middle epididymal luminal contents did not show any slow forward movement as in case of middle region without incubation. In contrast to the spermatozoa of the posterior epididymis, none of the testicular spermatozoa showed any movement when incubated with the posterior epididymal luminal contents (d) (100%). Whereas 39.64% of testicular spermatozoa incubated with the vas deferens luminal contents showed movement in the head region (b) similar to spermatozoa of the anterior region but 48.68% of the spermatozoa showed no movement (d).

ISCA-ISC-2012-2AVFS-20

Role of the Renal Sex Segment Secretions on the Enhancement of Epididymal Spermatozoa Motility in the Lizard, *Eutropis Carinata*

Bhuvaneshwari M.S., Sonia Devi R., Narayanaswamy R., Divya D., Medini R. and Bhagya M.
Department of Zoology, University of Mysore, Manasagangotri, Mysore-570006, Karnataka, INDIA

Abstract: The renal sex segment found only in male squamate reptiles is a modified portion of the nephron involved in reproduction. An *in vitro* study was undertaken to investigate the role of renal sex segment (RSS) secretions on the enhancement of epididymal spermatozoa motility in the mature male lizard *Eutropis carinata* during breeding season (October- December) of the reproductive cycle. In this study the epididymal spermatozoa suspended in the saline as well as anterior, posterior and whole kidney homogenates were incubated at different time intervals and percent motile spermatozoa were observed. In all the incubates, the percent motile spermatozoa significantly increased upto first 30mins and gradually decreased. Among the epididymal spermatozoa incubated with the whole kidney contents, 67.38%

showed the motility. The epididymal spermatozoa incubated with anterior kidney contents, 80.05% exhibited the forward motility. When incubated with posterior kidney contents, 85.34% of the epididymal spermatozoa showed the motility. The highest percentage of motile spermatozoa was recorded when epididymal spermatozoa was incubated with posterior kidney homogenate. This shows the probable role of the RSS secretions in enhancement of motility of the epididymal spermatozoa. At the same time it can be concluded that RSS secretions may have a role in sperm sustenance, as the spermatozoa did not survive for a long time when incubated with the anterior and whole kidney contents.

ISCA-ISC-2012-2AVFS-21

Effect of Bromocriptine on the Ovarian Follicular Development in Prepubertal Rats

Ameen M.H.A. and Bhagya M.
Department of Zoology, University of Mysore, Manasagangotri, Mysore-570 006, Karnataka, INDIA

Abstract: Effect of bromocriptine (dopamine receptor agonist) on pre-pubertal ovarian follicular development and onset of puberty were studied. Fifteen days old female rats were administered bromocriptine (0.4mg/kg body weight) daily for 21 days and appropriate controls were maintained. The onset of puberty in immature female rats was delayed following bromocriptine treatment. There were significant increases in the body weight, weight and diameter of the ovary of controls and treated group over the initial controls. There was a significant decrease in the body weight, weight and diameter of the ovary of treated group compared to the controls. Ovary of the initial control consisted of primordial (type 2), primary (type 3a, 3b), pre-antral (type 4, 5a, 5b) and antral (type 6) follicles whereas, antral (type 7) and pre-ovulatory follicles (type 8) were not developed. Controls and treated group consisted of all types of follicles *i.e.* primordial to pre-ovulatory follicles. Primordial follicles were reduced in number significantly in the ovary of the controls and treated groups when compared to initial control, whereas there was no significant variation among the controls and the treated group. The mean number of primary, pre-antral and antral (type 6) follicles in the control and treated group increased significantly over the initial controls. However, there was a significant reduction in the mean number of these follicles in the treated group when compared to controls. The mean number of type 7 (antral) and type 8 (pre-ovulatory) follicles were reduced in the treated group when compared with controls. The number of atretic follicles of the primary, pre-antral and antral (type 6) follicles significantly increased in the control and treated group over the initial controls. When compared to controls the mean number of atretic follicles belonging to primary, pre-antral, antral (type 6 and 7) and pre-ovulatory category were significantly higher in treated group and the number of corpora lutea was significantly lower. The results indicate that bromocriptine effect results in loss of follicles by atresia and delay the onset of puberty in immature female rats.

ISCA-ISC-2012-2AVFS-22

Study on the Seasonal Variations in the Kidney Protein Profile of the Lizard, *Eutropis Carinata*

Samson S. and Bhagya M.,
Department of Zoology, University of Mysore, Manasagangotri, Mysore-570006, Karnataka, INDIA

Abstract: The renal sex segment found only in male squamate reptiles is a modified portion of the nephron involved in reproduction. One dimensional SDS gel electrophoretic pattern of the kidney proteins, weight and total protein content of the kidney as well as serum testosterone concentration of the male lizard, *Eutropis carinata* were studied during breeding (Oct. –Nov.) and nonbreeding seasons (Jun.-Jul) of the reproductive cycle. During breeding season 27 protein bands were found. There was a significant increase in the weight and the total protein concentration of the kidney as well as serum testosterone concentration. During non breeding season, the number of protein bands reduced to 24. Consistent with the decrease in the number of protein bands, there was a significant reduction in the weight and total protein concentration of the kidney as well as serum testosterone concentration. The results indicate that, there is a seasonal difference in the number of proteins secreted, quantity of proteins and weight of the kidney as well as circulating testosterone concentration. This is the first study in squamate reptiles that reveals the appearance of new proteins in the kidney. In the present study, the three new proteins appeared during breeding season may be secreted from the RSS and is androgen dependent as RSS is regressed and serum testosterone concentration reduced during non breeding season.

ISCA-ISC-2012-2AVFS-23

Superoxide Dismutase Activity in *Hyalomma a. anatolicum* and *Hyalomma dromedarii* (Acari: Ixodidae) Ticks and its Correlation with some Macro and Micro Elements

Ghosh Mayukh, Sangwan N., Paliwal N. and Sangwan A.K.

Dept. of Veterinary Physiology and Biochemistry LLR University of Veterinary and Animal Sciences, Hisar, Haryana, INDIA

Abstract: Ticks are obligate ectoparasites that exclusively feed on host blood. These hematophagus arthropods are constantly challenged with reactive oxygen species (ROS) generated from endogenous and exogenous sources. So, they require a complex mode of antioxidant defense during host-parasite interactions. Superoxide dismutase (SOD) is one of the major component of this antioxidant defense system that converts O_2^- to molecular O_2 and H_2O_2 which is subsequently scavenged by catalase, resulting in the production of water and molecular oxygen and thus protects the ticks from free radical damage. SODs are characterized by the presence of metal prosthetic groups and can be classified into two major families in insects: Cu/Zn-SOD (Sod1), located mainly in the cytosol; and Mn-SOD (Sod2), found in mitochondria. The current study was performed to evaluate the level of SOD in different species, organs & sex of *Hyalomma* ticks and its correlation with some macro and micro elements. This study was carried out in randomly selected engorging ticks collected from buffaloes and camels. The SOD activity was estimated in salivary gland & ovary extract of female *Hyalomma a. anatolicum,* salivary gland extract of male *Hyalomma a. anatolicum* and salivary gland extract (SGE) of female *Hyalomma dromedarii* ticks. Copper (Cu), zinc (Zn), manganese (Mn) and calcium (Ca) contents were estimated in salivary gland & ovary tissue of female *H. a. anatolicum* and salivary gland tissue of female *H. dromedarii* ticks. The activity was significantly higher ($p<0.05$) in SGE of female *H. dromedarii* than SGE of female *H. a. anatolicum* in all the different protein concentrations (0.25 mg/ml to 1.0 mg/ml) while the female SGE had shown higher activity than the male SGE and the ovary extract in *H. a. anatolicum.* Copper concentrations were positively correlated (R^2=0.96669) with SOD activity while the calcium concentrations were found to have negative correlation (R^2=0.93325). Zinc and manganese concentrations were found to have no significant correlation but the copper-zinc ratio was positively correlated (R^2=0.90503) with the activity. So, the cytosolic Cu/Zn-SOD (Sod1) may play the predominant role in SOD mediated antioxidant defense mechanism in ticks.

Keywords: Ticks, *Hyalomma a. anatolicum*, *Hyalomma dromedarii*, SOD, SGE, ROS, antioxidant

ISCA-ISC-2012-2AVFS-24

Electron Beam Irradiation – A Potential Inducer of Sperm Abnormalities in Swiss Albino Mouse Exposed to Median Lethal Dose

Akhila M.[1], Vijay Mala (Grover) Nair[1], Ganesh Sanjeev[2] and Prashantha Naik[3]

[1]Department of Applied Zoology, Mangalore University, Karnataka-574199, INDIA
[2]Department of Physics, Microtron Centre, Mangalore University, Karnataka-574199, INDIA
[3]Department of Biosciences, Mangalore University, Karnataka-574199, INDIA

Abstract: Electron beam a form of ionizing energy generated by acceleration finds applications in radiotherapy for various diseases. The responses of mammalian testicular cells in spermatogenesis process to electromagnetic ionizing radiations (gamma and X-rays) are well-known. However, there is no report documenting changes in sperm density and morphology in electron beam irradiated mouse. The assessment of sperm shape morphology is an important parameter for evaluating toxicity effects being an indicator of infertility, testicular cancer and teratogenicity. The present, a preliminary study on the survived mice exposed to median lethal dose using electron -beam were analyzed to record sperm head abnormalities following whole body irradiations. Sampling and scoring of sperms was done in post-irradiated (35-days) mouse by employing standard methods. The results suggest that electron -beam radiations induces dose-dependent significant ($P<0.001$) increase in the total number of abnormal sperms compared to the control group. The induced head deformities in irradiated mouse exhibited the presence of hook-less, banana shaped, folded, double-and triple-tailed, double-headed and amorphous sperms. The current study thus demonstrates that the whole body irradiation using electron -beam (at median lethal dose) induces radical toxic effects on sperm morphology in the mammalian system. However, a detailed study is warranted to pinpoint the impact of electron beam irradiation at sub-lethal / therapeutic dose which probably may be responsible in contributing factors leading to functional abnormalities in the male reproductive status.

ISCA-ISC-2012-2AVFS-25

An Account of the Postnatal Developmental Phases of the Oviduct from Day-old to Maturity in the Kuttanad Duck (Anas Platyrhynchos Domesticus)

Patki H.S. and Lucy K.M.
Dept. of Veterinary Anatomy and Histology, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala, INDIA

Abstract: Postnatal developmental pattern of the oviduct in the Kuttanad duck was investigated for tracing different phases of growth using 78 ducklings from day-old to 24 weeks of age. Accordingly two major classifications were done viz., based on coiling and condensation of the whole oviduct and secondly based on structural and functional differentiation of its constituent segments. According to first classification oviduct showed three different phases of development in postnatal period such as phase of uncoiled oviduct (from day-old to 10th week), phase of partially coiled oviduct (between 10th to 12th week) and phase of highly coiled oviduct (from 10th week to onset of egg laying). The second classification suggested existence of only two phases of development as phase of partial differentiation (from day-old to 12th week of age) and phase of complete differentiation (from 12th week to onset of egg laying). The existence of these phases suggested that their occurrence might follow a more species specific pattern so as to attain the functional maturity. Present study also indicated the synchronisation of the time of onset of phase of complete differentiation and phase of highly coiled oviduct.

ISCA-ISC-2012-2AVFS-26

Studies on the Responses of H. Fossilis to the Thermal Streeses

Tiwari Rakesh Kumar
Department of Zoology, V.G.P.G College Dibiyapur-Auraiya, INDIA

Abstract: Stress is fundamentally physiological process, the primary object of which is to maintain life and re-stabiles the normal state the conditions of stress have been known to produce various bio-chemical changes in the body fluids and tissues of animal. From small streams to large river and ponds to sea. The thermal stratification has been describe by number of ecologist, but this factor become important one whose rotation of water occur due to thermal change in density and evaporation, and quick temperature variation for comparative shallowness or in land water bodies. The fish is much thermo sensitive and hence number of "Homeostatic / stress response and adjustment are found to fallow. Acclimation is the compensatory response of organization placed in the laboratory condition where temperature variations are yet more pronounced. The fishes being poikilothermic, have a variation of their body temperature, in direct proportions whit their environment. The common Indian siluroid, *Heteropneutes fossilis* in habbits the bottoms confined fresh water bodies. The past experiments revealed same definite conclusion but yet continuum of studies does not stop. The experiment conduction is difficult when environment stress are caused to fish under laboratory.There work was undertaken to find out whether thermal stress applied for prolonged period continuously for twenty four hours could produced any effect on through latter is not expected to reveal much the biochemical parameters and the methodologies to be adopted will be detailed in chapter 3 and later on in respective chapters. The result were analyzed in both male and female specification separately to find out possible sex variation. The present study intends to find out responses involved during the heat and cold stress at a temp. of 33^0 C and 15^0 C respectively on *Heteropneutes fossilis*. This is because of the fact fish respond to temperature fluctuation to a great extent. It's a type of serious stress for the life of any cold blooded vertebrate, whether amniot or amamniote. Stress is the sum of all non specified change caused by fluctuation damage (Selye et. Al. 1955) This definition include the re-establishment of the normal resting state after discontinuation of treatment (recovery phase) or even during continued exposure (adaptation). This a state manifested by specific syndrome which consist of all non specifically induced. Change within a biological system (Selye 1956) The stress has been known to produce biological histo-chemical and histological change in the tissues and body fluid of animals.

Temperature related stresses are very importance environment stress, as during summer and winter there are excessive rise and fall in the environmental temperature more ever, thermal stress applied by earlier worker are in the form of acute stress by sudden transfer of the fish to varying temperature. Thus the amount lobe more as shock than stress Prosser 1984. The Magnitude of initial effect varies with the amount of temperature change. Generally Indian animals lives within a range of temperature from about 10^0 C to 45^0 C with in this range each species lives in a narrow range of tolerance where its life processes are not damaged. At temperature outside this zone of tolerance the species may resists condition for a periods but will be damaged through there is a preferred temperature with in a very narrow ranged with optimum for given species but its stand more realistic for poikilotherms (Hoar 1984). Thus there are beyond optimum range is higher or lower tolerance limits and transcendence still beyond from lethal. More ever thermal stress applied by

earlier worker was in the form of much acute stress shock by sudden transfer of fish to varying temp. in the present work both heat and cold stress work over a longer range of time required for change applied as chronic stress. In main following aspect are included in the present course.

ISCA-ISC-2012-2AVFS-27

Quantitative Analysis of Total Lipid in Different Developmental Stages of Life Cycle of Bivoltine race of *Bombyx mori l.*

Shrivastava Sushila
Govt. N.S.P. Sc. College., Indore, MP, INDIA

Abstract: Karnataka state occupies a prominent place in sericulture and in Indian silkworm collected from Central Silk Research And Training Institute (CSRTI) and work is done in CFTRI, Mysore. Total lipid extracted from different developmental stages of *Bombyx mori*. Total lipid percentages of fresh weight (%) of samples was examined .Lipid declined slowly during embryonic development , then abruptly decreased during hatching. Later on it increased upto adult stage except fifth instar newly ecdysed larva. Among different larval stages 5th instar late larval stage contained the highest amount of lipid. Male contained more lipid (29.93%) than the female (6.63%).

ISCA-ISC-2012-2AVFS-28

Nutritional Analysis of Freshwater Bivalves, *Lamellidens spp.* from River Tunga, Karnataka, India

Shafakatullah Nannu, Shetty Sowmyashree, Lobo Reema Orison and Krishnamoorthy M.
Department of Bio-Sciences, Mangalore University, Mangalagangothri-574199, Karnataka, INDIA

Abstract: The aim of this work was to investigate the size and seasonal variation of protein, carbohydrate, and lipid contents in freshwater bivalves Lamellidens spp. The bivalves were studied for a period of 12 months from January 2010 to December 2010 from river Tunga, in the Western Ghat region of Karnataka, India. The current study showed that bivalves accumulate proteins and lipids during the pre and post monsoon seasons. Drastic decrease in protein and lipid content was observed during the monsoon season while winter showed a mild decrease in the same. Inversely, carbohydrate content decreased during pre and post monsoon season, while increasing during the monsoon and winter seasons.
Keywords: Freshwater bivalves, *Lamellidens*, Nutrients, Tunga River, Western Ghats.

ISCA-ISC-2012-2AVFS-29

Isolation of Glycoside from the Seed Powder of Syzigium cumini (L)

Vitthalrao B. Khyade
Department of Zoology, Shardabai Pawar Mahila Mahavidyalaya, Shardanagar, Pune – 413115, India

Abstract: The seeds of Syzigium cumini (L) were shade dried, powdered and subjected for soxhlet extraction for twenty four hours through ethanol solvent. The extractive was concentrated. And it was then partitioned using petrol, benzene, ether, ethyl acetate, acetone and methanol. The soluble fractions were separated. The acetone soluble fraction was subjected for Si-gel CC and gradiently eluted with ethyl acetate, acetone mixture in various concentration. The elutes collected from ethyl acetate : acetone (9:2) were combined and crystallized from ether as a light yellow needles. This compound was dissolved in aqueous ethyl alcohol (1:1 v/v) and then treated with Tokadiastase. Liberation of free rhamnose was detected, suggesting the presence of alpha linkage between sugar moiety and aglycone. The resultant compound provided enough evidence regarding "5, 7-dihydroxy-6, 2-dimethoxyisoflavone-7-O-alpha-L-rhamnoside".

ISCA-ISC-2012-2AVFS-30

Present investigations on the few specific parameters of Nirmal Lake waters at Vasai, Maharashtra, INDIA

Raut Sonali[1], Shantaj M.Deshbhratar[1], Vijay K.Hile[2], Ankita Singh[3]
[1]Zoology Dept, [2]Botany Dept., Bhavans H.Somani College, Chowpatty, Mumbai-7, INDIA
[3]Shri Chandulal Nanavati Vinay Mandir, Vile Parle, Mumbai, INDIA

Abstract: Nirmal Lake is about 50 kms. From Mumbai, situated in Nirmal village near Vasai town, Thane district, Maharashtra at 19° 23´ 29´´ N & 72° 46´ 57´´ E. Nirmal Lake comprises of 2 ponds namely Vimal & Malai that are separated by a tar-road for public use. The two ponds are inter-connected with each other by a internal drainage system.

The lake waters are utilized for a variety of purposes including ritual ceremonies, domestic & agricultural purposes. Water serves many beneficial purposes- primarily drinking and others such as domestic, industrial, agricultural purposes, for stock & wild-life, propagation of aquatic life, aesthetic enjoyment etc. Regular monitoring of waters is of paramount importance as a relationship can be established between different parameters that can indicate the status of a habitat. The current investigations are carried out to analyze certain specific parameters required to establish & notify the quality and sustainability for varied purposes. Our observations suggest that by adopting & implementing modern scientific-cum-technological measures, the lake can be reconstituted for variety of purposes.
Keywords: Lake, parameters, domestic.

ISCA-ISC-2012-2AVFS-31

Storage Studies of Sweetened Ready to Eat (SRTE) paneer Cubes Developed with the use of Inulin

Desai B.A., Chauhan Geeta and Mishra Bidyut Prava
Division of Livestock Products Technology, Indian Veterinary Research Institute, Izatnagar, Bareilly 243122 UP, INDIA

Abstract: Paneer occupies a place of paramount importance among indigenous dairy products. With the increasing consumer awareness and conscious of health risks related with high fat and cholesterol intake, low fat milk food products are gaining importance. Further, convenience food products are the need of the day due to our altered socio-economic scenario. In view of these facts, this study was planned. Experiments were conducted to develop sweetened Ready to Eat (RTE) paneer cubes with low fat milk with addition of inulin and study its storage life at refrigerated temperature. Basic product was developed from 1.2% fat milk. The levels of various ingredients was optimized to be as sugar 12.5%, saffron 0.003%, cardamom 0.02% and apple 2%. The inulin was studied at three different levels of 0.75%, 1.5% and 2.25%. Sensory evaluation showed good to very good acceptability of all the three products, however the product with 0.75% inulin was found to have higher acceptability. The product with 0.75% inulin along with a control without inulin was evaluated to determine shelf life under refrigeration temperature. The products were aerobically packaged in low density polyethylene (LDPE) pouches and analysed on 0, 3rd, 5th, 7th and 10th day during refrigeration storage at 4 ± 1^0C. pH of the products showed a decreasing trend and TBA showed an increasing trend during storage period. The pH values decreased gradually during entire period of storage and significant ($p<0.05$) decrease was observed in control product on 10th day and in treatment product on 5th day. Microbial profile studied in terms of total plate count, coliform count, yeast and mould count and psychrophillic counts was observed to be increased gradually during storage period. Results from microbial profile and sensory evaluations showed that SRTE paneer prepared with 0.75% inulin can be stored well in LDPE bags at refrigeration temperature (4 ± 1^0C) for 7 days without much change in quality.

ISCA-ISC-2012-2AVFS-32

Study on Fish diversity of Kunda reservoir village Kunda, Dhar, MP, India

Amrita Khatri[1] and Ravindra Rawal[2]
[1]MJB Govt. P. G. Girls College Moti Tabela , Indore, M.P., INDIA
[2]Govt. P.G. College, Khargone, M.P., INDIA

Abstract: Reservoirs are the most important sources of water on the earth surface. In the world millions of reservoirs are made either naturally or manmade. The basic concept of this system is to conserve water for future use. In India basically water bodies are developed for drinking , irrigation, domestic and industrial purposes . In the present paper Kunda reservoir in most important water body of this region. This reservoir is constructed in 1959 by irrigation department to conserve rain water for future use till next mansoon. Here basic concept of our study is to study diversity of fishes. Different type of fishes like major carp, minor carp, common carp, exotic carp, cat fishes and some other fishes are showing their presence at this station.
Keywords: Kunda reservoirs, diversity, fishes.

ISCA-ISC-2012-2AVFS-33

Fertility and Hatchability Characterization of Three Strains of Egg Type Chickens

T.O. Allanah[1], J. C. Okonkwo[2] and S. I. Omeje[1]
[1]Department of Animal Science, Faculty of Agriculture, Delta State University, Abraka, NIGERIA
[2]Department of Animal Science and Technology, Nnamdi Azikiwe University, PMB 5025 Awka, Anambra State, NIGERIA

Abstract: The fertility and hatchability characteristics of three popular strains of egg type chickens in Nigeria, namely chickens (ISA BROWN), Alpha (Improved native) and the local strain (Pure native) chickens were studied. They were compared from twenty weeks of age using 15 hens and 3 cocks from each strain. The parameters recorded were egg production, egg weight, percent fertility and hatchability. The experiment was replicated three times. The data obtained showed that the improved native strain produced more eggs followed by the exotic strain and lastly, the pure native strain. ISA Brown strain and improved native strain were similar in egg weight; but performed better than pure native and the other strains. The ISA Brown recorded mean egg weight of 59.27 ± 0.02, Improved native recorded mean egg weight of 53.10 ± 002 and the pure native recorded mean egg weight of 41.00 ± 0.02. Conversely, fertility was highest in the pure native strain (86.04) followed by improved native strain 83.08) and the exotic strain recorded the least percent fertility of (68.21). Hatchability was highest in the improved native strains with percentage hatchability of 77.33, followed by the pure native of percentage hatchability of 73.55 and ISA Brown (exotic) recorded the least percentage hatchability of 61.24. From the findings, the improved native did well in all the parameters investigated and has enough room to carry out selection for improvement.

ISCA-ISC-2012-03BS-01

Bioleaching of Copper from Low Grade Ore Bornite Using Halophilic *Thiobacillus Ferroxidans,* N-11

Nakade D.B.
Dept. of Microbiology, Rajaram College, Kolhapur-416004, MS, INDIA

Abstract: Bioleaching is a process of extracting minerals from ores using microorganisms. The extraction of copper from low grade ores is today's need because of gradual depletion of high grade ore. The conventional methods used for extraction of copper from ore is either Pyrometallurgy or Hydrometallurgy, however both the methods are not free from the environmental pollution problems and economically very expensive, and requires lots of energy. Bioleaching of mineral is the only method considered as most convincing way to solve these problems, requires very less energy and is free from environmental pollution and other problems. By considering this, In the present study Halophillic Thiobacillus ferroxidans N-11 is explored for bioleaching of copper from low grade ore Bornite. Thiobacillus ferroxidans N-11 isolated from hyper saline soils of Kolhapur district of Maharashtra, India on 9 K medium. It was identified using Bergey's manual of systematic bacteriology. Bioleaching study was carried out in both shake flask as well as bioreactor. Results showed that in the shake flask Thiobacillus ferroxidans N-11 tolerates 35 g/L of Bornite when supplemented with 0.5 g/L of Yeast extract. At 120 rpm and 40 ^{O} C temperature, about 72% of copper can be extracted after 22 days by shake flask method and 78% can be extracted by bioreactor study in 20 days. Present study indicated the usefulness of Thiobacillus ferroxidans N-11 in bioleaching of copper from low grade ore Bornite can be used as a potential candidate for bioleaching as a pollution free process.

Keywords: Bioleaching, Halophilic, **Thiobacillus thiooxidans** N-11, Bornite, copper.

ISCA-ISC-2012-03BS-02

Socio-Religious Importance of Plants in Bundelkhand Region of India

Ahirwar J.R.
Department of Botany, Govt. College Niwari, District –Tikamgarh, MP, INDIA

Abstract: The importance of plants is well realized since the time immemorial. Our ancestors studied the plants around them to meet their basic requirements like food, shelter, clothing and medicines which led the foundation of civilization. Some plants which are used in different social and religious customs by people are known as *Socio-Religious plants.* This paper deals with the survey of some important socio-religious plants used by the people of Bundelkhand region. During the survey fifty one (51) plant species of angiosperms were enumerated which are being used in different social and religious customs like marriage ceremony, child birth, festivals and cremation etc. The informations collected on the basis of intensive interviews and long conversation with villagers regarding the uses of plants in different rites and rituals. **Bundelkhand** is very important region of India. It is unique in many aspects being the central part of the country; it is much safe like heart in our body. The Bundelkhand region encompasses several plant species like Abrus precatorius, Aegle marmelos, Anthocephalus indicus, Azadirachta indica, Bambusa bambos, Boswellia serrata, Butea monosperma, Brassica compestris, Calotropis procera, Cannibis sativa, , Capsicum annum, Cicer arietinum, Citrus limon, Clitoria ternatea, Cocus nucifera, Curcuma domestica, Cynodon dactylon, Datura alba, Emblica officinalis, Epipremnum aureum, Eugenia jabolana, Ficus religiosa, Ficus benghalensis, Ficus virens, Gloriosa superba, Hordeum vulgare, Ipomoea batatas, Lannea coromandelica, Lawsonia alba, Mangifera indica, Madhuca indica, Mitragyna parviflora, Musa paradisiaca, Nelumbo nucifera, Nyctanthes arbortristis, Ocimum basilicum, Ocimum sanctum, Oryza sativa, Phoenix sylvestris, Piper betle, Polyaltgia longifolia, Putranjiva roxburghii Sacchrum offcinarum, Sacchrum spontaneum, Santalum album, Sesamum indicum, Tamarix ericoides, Trapa bispinosa, Triticum aestivum, Vigna mungo and Ziziphus nummularia which are being used in many rites and rituals. Therefore, first priority must be given to study these plants and documented traditional knowledge needs to be popularized, so that all round awareness regarding the social and religious uses of these plant species be made possible. It is hoped that the present study may be useful to mankind. It will inspire to conserve these plant species wherever possible.

Keywords: Socio-religious plants, rites and rituals, Bundelkhand.

ISCA-ISC-2012-03BS-03

Microbial Gas sensing property of *Pseudomonas aeruginosa* with mixed metal catalyst $MgFe_2O_4$

Bangale Sachin[1] and Chaugule Vinay[2]
[1]Determent of Microbiology, Miraj Mahavidyalaya miraj Sangli, MS, INDIA
[2]Determent of Chemistry, Miraj Mahavidyalaya miraj sangli, MS, INDIA

Abstract: Semiconductive nanoparticles of bacteria as *Pseudomonas aeruginosa* with catalyst $MgFe_2O_4$ bio film was synthesized by using solution combustion technique. The process was convenient, environment friendly and efficient method. Materials were characterized by TG/DTA, XRD, and TEM. Thick biofilm of *Pseudomonas aeruginosa* $MgFe_2O_4$ was measured by exposing it to reducing economical gases. It was found that the *Pseudomonas aeruginosa* was sensors exhibited various sensing responses to these gases at different operating temperature. The sensor exhibited a fast response and a good recovery. The biofilm can be used as a new type of gas-sensing material which has a high sensitivity and good selectivity to various gases at low ppm.

Keywords: Nanostructure *Pseudomonas aeruginosa* with catalyst $MgFe_2O_4$, XRD, SEM, TEM, Gas sensor.

ISCA-ISC-2012-03BS-04

Integrating Socio-Economic Considerations into Biosafety Decisions: The Challenge for India

Nagar Sanjay[1] and Nagar Nirupama[2]
[1]Department of Biotechnology, IPS Academy, Indore, MP, INDIA
[2]School in Economics, DAVV, Indore, MP, INDIA

Abstract: Developing countries Like India face the same challenge from modern biotechnology1 that other regions, nations and societies do: *How does one maximize the potential benefits of a technology as powerful and pervasive as this and at the same time ensure that effective measures and mechanisms are in place to avoid or minimize the risks posed by its application?* Modern biotechnology and its products promise benefits to poor countries and communities. For example, in its application to agriculture, biotechnology's benefits include improved crops, addressing hunger and malnutrition, and making agriculture more environmentally sustainable. A solid research methodology is necessary in order to gain a better understanding of the social and economic impacts of modern agricultural biotechnology. Without a credible research methodology, it is neither possible nor desirable to incorporate socio-economic considerations in decision-making. Our focus is on the socio-economic benefits and risks of modern biotechnology and its products, and how to integrate considerations of these benefits and risks into biosafety decision-making processes. We begin with the premise that the social and economic impacts – both positive and negative of utilizing modern biotechnology, and of the widespread release of genetically modified organisms (GMOs), are important considerations in making regulatory decisions about the technology and its products. We look particularly at the potential positive and negative consequences of using agricultural biotechnology in India where a high percentage of the population is directly engaged in agricultural activities, and where poverty and food insecurity are widespread. This paper explores some research approaches that could be applied to understand the social and economic impacts of modern agricultural biotechnology. These include: Economic Modeling, Cost-benefit Analysis, Social Impact Assessment, Sustainable Livelihoods Framework, Systemic 'Relevance Assessment,' and Participatory Research.

Keywords: Biotechnology, socio-economic policy, genetically modified organisms, biodiversity, biosafety.

ISCA-ISC-2012-03BS-05

Role of Neem (*Azardirachta indica*) as a Plant extract dewormer for *Ancylostoma caninum* Infection in mice

Shaziya Bi and Goyal P. K.
School of Studies in Zoology and Biotechnology, Vikram University, Ujjain-456010, MP, INDIA

Abstract: Gastrointestinal parasite is serious threat to the productivity of livestock in developing nation. The major mechanism of controlling nematode parasite of livestock has been limited to the use of synthetic dewormer. Several plant products have been exploited for their dewormer activity. Neem has been shown to possess many medicinal properties including dewormer property. The purpose of this experiment was to study the dewormer activity of neem against A.

caninum in infected mice. Two groups of mice were infected with A. caninum infective larvae. Before infection one group of mice were given neem extract at dose level of 0.2ml/ mouse. One group of mice served as non treated group. The dewormer activity was determined by larval reduction, mast cell and eosinophil cell level. Neem extract were highly effective in reducing the number of A. caninum. Larval reduction showed that the number of larvae reduced was higher in the treated and infected group compared to the infected group within 72 and 96 hours after challenge infection. Mast cell result suggest that on day 16 and 24 in mice infected with A. caninum larvae developed higher mastocytosis in comparison to treated and infected group. Decline level of eosinophil cell recorded on day 16 and 24 in treated and infected group when compared with infected group. The result suggests that the number of larvae correlated with number of mast cells and eosinophil cell and a potential role of neem extract as a dewormer activity against A. caninum in mice.
Keywords: Dewormer activity, azardirachta indica, mice, *ancylostoma caninum*.

ISCA-ISC-2012-03BS-06

Effect of EMS on Morphological, Biochemical and Genetic Characters of *Capsicum annuum*

Misra Shrilekha
Department of Bioscience and Biotechnology, Banasthali University, Rajasthan, INDIA

Abstract: The study was carried out to check the morphological, chemical and genetic variation in *Capsicum annuum* plants, induced by chemical mutagen Ethyl Methano Sulphate (EMS). The EMS treated and control plants were grown and observe different characters like growth character, protein and phenolic acid contents. Increase in EMS concentration resulted in decrease of seed germination. The seed protein content was gradually increased till 0.40% EMS concentration compared to respective control, whereas this content was decreased with increasing concentration more than 0.40 %. The mutagen influenced the phenolic acid content with different level of variation. Genetic variability was carried out by RAPD depicts that maximum variation (50%) was assessed between 0.80% treated and control plants. However 0.80% concentration was highly toxic and resulted in an adverse effect on about all characters.
Keywords: *Capsicum annuum*, EMS, protein, phenolic acids, RAPD.

ISCA-ISC-2012-03BS-07

Diversity of Veterinary Medicinal Plants of Bundel Khand Region of India

Ahirwar S.S.
Botany Department, Govt. C.M.D. College Maharajpur, Distt. Chhatarpur, MP, INDIA

Abstract: The Bundel Khand region of India is well Known For its rich Flora and Fauna. The Region alarge Number of Plants both of traditional as well as Medicinal Value are found in Bundelkhand region of India.This Paper Deals with the survey of some Important Veterinary medicinal Plants used by the rural peoples of bundelkhand region of India for own pet animals. The Information Gathered on the bases of oral discussion with villagers herblists of bundelkhand region. These Plants contents some important Alkaloids and used in many Types of veterinary medicines. Bundelkhand region of India Encompasses many species of herbal veterinary medicinal plants Like – Withaniya sominifera, Adhatoda vasaka, Cassia fistula, Emblica officinelis, Ricinus Cummunis, Zingiber officinale, Aegle marmelos, Teno spora cardifolia, Pedalum murex, Jatropha quercus, Eugenia jambolina, Lawsonia inermis, Trigonella foenumgreacum, Azadirachta indica, Vitex negundo, Bryonialacinosa, Memosa pudica, Tamarindus indica, Melia azedrach, Nerium indicum, Anona squamosa, Terminalia arjuna, Calotropis procera, Solanum nigrum, Datura alba etc. aAre the major sources of various herbal drugs used in several types of pet animal diseases.
Keywords: Bundel Khand, veterinary medicinal plants, ***Withaniya sominifera, Adhatoda vasaka.***

ISCA-ISC-2012-03BS-08

Antimicrobial and Phytochemical analysis of five Medicinal Plants extracts against Diarrheagenic pathogens

Srivastava Jyoti and Sharma Jyotsana
Department of Bioscience and Biotechnology Banasthali University, Rajasthan, INDIA

Abstract: Medicinal plants have been used as traditional treatments for numerous human diseases for thousands of years. Diarrheal disease continues to be a major cause of morbidity and mortality throughout the world and there is renewed interest in the discovery of novel compounds that can be used to fight with the disease. The present study have been initiated to develop herbal drugs using certain plant extracts against food borne dirrheagenic bacteria. Ethanolic,

methanolic and aqueous extracts of four different plants *Phyllanthus emblica*, *Acacia nilotica, Balanites aegyptiaca, Ziziphus mauritiana* and *Jatropha curcas* were prepared. Antimicrobial screening of the extracts were performed against certain food borne diarrheagenic bacteria viz. *Salmonella typhimurium*, *E.coli, Bacillus cereus* and *Staphylococcus aureus.* The different solvent extract (Eth., meth. aq.) of *Phyllanthus emblica* fruit showed significant antibacterial activity against all test organisms. In case of ethanolic extract, 19mm was recorded as diameter zone of inhibition against *S.aureus*, followed by 15.75mm, 12.5mm and 11mm for *B.cereus*, *E.coli and S.typhimurium* respectively. Methanolic fruit extract showed high 20 mm diameter zone of inhibition against *B.cereus* and S.*aureus* and 11mm and 11.5mm against *E.coli* & *S.typhimurium*. In case of Ethanolic bark extract of A. nilotica zone of inhibition was found 15mm, 17.5mm, 19mm and 16.5mm against *B.cereus, E.coli,* S.aureus and S.typhimurium respectively. Methanolic bark extract of *A. nilotica* showed greatest inhibition zone of 23.78mm against *E.coli*. Results showed that ethanolic and methanolic leaves extract of ziziphus are quite effective against all the test diarrheagenic bacteria. Ethanolic extract shows higher antibacterial activity by forming zone of inhibition (20mm, 12.78mm, 12mm, and 11mm) against *B.cereus, S.typhimurium, S.aureus, and E.coli* respectively. B.aegyptiaca methanolic extract showed highest activity 31mm zone of inhibition against *B.cereus.* All the plants extracts were also compared with standard antibiotic ciprofloxacin which showed almost, similar or greater zone of inhibition against all diarrheagenic bacteria. From phytochemical study we find the presence of alkaloid, terpenoids, tannin, and flavanoids in *P.emblica*, Alkaloid, tannin, terpenoid in A.nilotica, alkaloid, tannin, flavanoid in B.aegyptiaca, and alkaloid and tannin in Z.mauritiana. It can be thus concluded that anti-bacterial properties of plants are due to Tannins, alkaloids, flavanoids, saponins, sterols, triterpenes and reducing sugar. Synergistic effects of plant extracts were also tested i.e. plant extracts in different combinations showed more effective as compared to individual extracts. This study demonstrated that the ethanolic, methanolic and aqueous extract *of Phyllanthus emblica, Acacia nilotica, Ziziphus mauritiana* and *Balanites aegyptiaca* has antidiarrheal activity against tested diarrheagenic bacteria. Thus these plant extracts can be used for the development of herbal drugs against diarrhoea.
Keywords: Medicinal plants, human diseases, *Phyllanthus emblica, Balanites aegyptiaca.*

ISCA-ISC-2012-03BS-09

Molecular studies on "Cloning & Expression of a Novel Therapeutic Molecule Staphylokinase

Kanakaraju Chekuru
Dept of Biotechnology, ANITS, Sangivalasa, Visakhapatnam-531162, AP, INDIA

Abstract: Thrombolytic disorders have been emerged to be one of the main causes of human mortality world wide. A blood clot (Thrombus) developed in the circulatory system can cause vascular blockage leading to life threatening consequences. A healthy hemostatic system suppresses the development of such blood clots in normal circulation, however reacts extensively in the event of vascular injury to prevent blood loss. Failure of the system to produce the bodily clot lysins such as tissue plasminogen activator (t-PA) and Urokinase leads to stroke, pulmonary embolism, deep vein thrombosis and acute myocardial pathologies. The clinical intervention to cure these disorders is carried out by the external administration of thrombolytic agents. Staphylokinase (SAK), one such promising thrombolytic agent belongs to the group of extracellular proteins secreted by *Staphylococcus aureus*. The SAK interacts with plasminogen and converts it into plasmin which consecutively degrades the fibrin matrix of blood clots and dissolves the thrombus. This process aids in the treatment of patients suffering from the thromboembolic disorders such as myocardial infarction, cerebrovascular thrombosis and venous thromboembolism. Thrombolytic agents suffer several limitations that often result in less than optimal outcomes. In order to overcome these shortcomings, several new or second – generation agents have been developed and reteplase being the first one among them. Recently, increased attention has been focused on the prospect of using thrombolytic agents in combination with more potent antiplatelet/antithrombin therapeutics, such as glycoprotein IIb/IIIa receptor antagonists, direct thrombin inhibitors and low molecular weight heparin. These adjunctive treatments hold promise not only for improving the rapidity of reperfusion and increasing patency rates, but also reducing the risk of reocclusion. Keeping in mind the potential and importance of Staphylokinase as a thrombolytic agent, the present work has been carried out to produce a novel thrombolytic agent with anti thrombin and anti platelet properties. The results obtained provides comprehensive information on production of engineered Staphylokinase as a novel fusion protein for effective thrombolytic therapy. The present investigation has yielded fruitful information on many lines of applicability.
Keywords: Thromolytic disorders, staphylokinase, hemostatic.

ISCA-ISC-2012-03BS-10

Plant growth Promoting Microbes on Growth performance of *Casuarina equisetifolia* (Forst.) seedlings

Saravanan T.S., Rajendran K. and Santhaguru K.
Centre for Research and P.G. Department of Botany, Thiagarajar College (Autonomous), Madurai-625 009, TN, INDIA

Abstract: *Casuarina equisetifolia* is a fast growing, multipurpose tree capable of fixing atmospheric nitrogen in association with Frankia. The beneficial effect of biofertilizers on growth and biomass of *C.equisetifolia* in nursery condition has been studied in several instances. The present study focused on triple inoculation involving *Azospirillum*, *Pseudomonas* and *Trichoderma* on growth performance of *C.equisetifolia* seedlings. Seedlings were raised in decomposed coir pith in root trainers at TamilNadu Newsprint and Papers Limited (TNPL Nursery), Karur, TamilNadu. Two month-old seedlings were inoculated with *Azospirillum brasilense, Pseudomonas fluorescens* and *Trichoderma viride*. Six months after inoculation, the plants were harvested and root and shoot length, collar diameter, plant biomass, nodule number and nodule weight were recorded. Maximum increase in total biomass was found in *Azospirillum* + *Pseudomonas* + *Trichoderma* (T_7) inoculated seedlings (59.51 per cent increase over the control). Inoculation with *Pseudomonas* + *Trichoderma* (T_6) resulted in 47.62 per cent increase in biomass, followed by *Azospirillum* (T_1) inoculation (44.97 per cent increase over the control). Further, the growth, nutrient content (N, P and K), total chlorophyll and protein content of the seedlings increased significantly in all the treatments, compared to the control. Among the inoculated seedlings, the ones inoculated with *Azospirillum* + *Pseudomonas* + *Trichoderma* (T_7) combination performed better, followed by dual inoculated plants with *Pseudomonas* + *Trichoderma* (T_6) combination and single inoculated plants with *Azospirillum* (T_1).
Key words: *Casuarina equisetifolia*, decomposed coir pith, root trainers, *Azospirillum*, *Pseudomonas, Trichoderma*.

ISCA-ISC-2012-03BS-11

Diversity of Rhizobacteria from Rhizosphere Soil of Some Tropical Grasses in Southern Tamilnadu, India

Santhaguru K. and Saravanan T.S.
Centre for Research and P.G. Department of Botany, Thiagarajar College (Autonomous), Madurai-625 009, TN, INDIA

Abstract: Microbial diversity in the rhizosphere depends on plant species, soil type and availability of soil nutrients. The present study focused on isolation and evaluation of rhizobacteria from the rhizosphere soil of *Saccharum officinarum*, *Sorghum vulgare*, *Eleusine coracana* and *Pennisetum typhoides.* The plant growth promoting traits of rhizobacteria such as Indole-3-acetic acid production, siderophore production, phosphate solubilization and induction of root elongation by the isolates were investigated. Altogether 29 isolates were recovered and identified as *Bacillus* (41.38%), *Pseudomonas* (48.28%) and *Azospirillum* (10.34%) based on biochemical and morphological characteristics. Only 8 isolates produced siderophores (21.6 to 85.7% siderophore units), out of which seven of them were *Pseudomonas*. Ten isolates produced IAA that ranged from 9.87 to 59.42 µg IAA/mg protein. Among the 10 IAA- producing isolates, 8 of them were *Pseudomonas*. Phosphate solubilization property was found in 17 isolates (28.17 to 132.46 µg P solubilized/mg protein), out of which 6 belong to *Bacillus*, 2 to *Azospirillum* and 9 to *Pseudomonas*. Bacterial inoculation resulted in enhanced root elongation of *Vigna radiata* by 23 isolate, as compared to the control. Further, Ba3, Ba5 and Ba17 of *Bacillus*, Pf8 and Pf12 of *Pseudomonas* and Az18 of *Azospirillum* performed better in inducing root elongation. Thus, efficient indigenous rhizobacteria can be exploited as bioinoculants for plant productivity.
Key words: Diversity, rhizobacteria, rhizosphere soil, grasses, Tailnadu.

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Studies on Species Diversity of *Phacus* of Lakes of Jalgaon District, Maharashtra, India

Mahajan S.R.
Bhusawal Arts, Science and P.O.N. Commerce College, Bhusawal-425 201 Dist-Jalgaon MS, INDIA

Abstract: Euglenoids have their own phylum Euglenophyta because they share both plants and animals characteristics. They are myxotrops. Some biologists point to an ancient Euglenophytes as the common ancestor of plants and animals. Euglenoids are importance components of fresh water plankton and food chains. They might serve as excellent bioindicators of environmental change, not only by their presence or absence, but also measuring the cellular change

that occur under different environmental conditions. During the study of algae of lakes situated in Jalgaon district the author came across several members of euglenoids. Amongst them species of *Phacus* are interesting and rarely occured. The present investigation deals with the systematic accounts of 25 taxa of genus *Phacus*. The genus *Phacus* represented by 23 species with 2 varieties.

Keywords*: Phacus, lake.* Jalgaon.

ISCA-ISC-2012-03BS-13

Ethnomedicinal Plants Used for the Treatment of Diabetes among the Villagers of District Tehri Garhwal, Uttarakhand, India

Dangwal L.R.[1], Sharma Antima[1] and Dangwal Mukta[2]
[1]Herbarium and Plant Systematic Laboratory, Dept. of Botany, HNB Garhwal Central University, Tehri Uttarakhand, INDIA
[2]Govt. PG College, New Tehri, Uttarakhand, INDIA

Abstract: Uttarakhand state has 13 districts, out of these one of the botanically interesting district in the state of Uttarakhand is Tehri Garhwal which sustains unique and rich vegetation in wide range of habitats from Tarai- Bhabar tracts (275-4258m. a.s.l) to the high range of lesser Himalaya. It lies in between $30^0$10' - 30^0 17'N latitude and 78^0 18'- 78^0 30'E longitude in northern part of Western Himalaya. It is surrounded by the district Rudraprayag in the East, Dehradun in the West, Uttarkashi in the North and Pauri in the South. The present studies revealed that totally 17 modes of treatment were followed by the villagers of Tehri district to cure diabetes. The rural people of the study area were used 17 plants for diabetes and among them, 6 plants viz., *Azadirachta indica,, Cynodon dactylon, Lablab purpureus,Curcuma longa, Andrographis paniculata,Coccinia grandis, Caesalpinia pulcherrima* were used to cure acute diabetes. The plants were used either separately or in combination with other plants. These ethnomedicinal data may provide a base to start the search the new compounds related to phytochemistry, pharmacology and pharmacognosy. Attention should also be made on proper exploitation and utilization of these medicinal plants.

Keywords: Uttarakhand, vegetation, *Lablab purpureus,Curcuma longa.*

ISCA-ISC-2012-03BS-14

Ground Water Management by Recharging Programming and its Implementations for Human Welfare at Dhar Town MP, India

Choudhary Preeti[1] and Lakhani Leena[2]
[1]Govt. PG College, Dhar, MP, INDIA
[2]Govt. Girls P.G. College, Ujjain, MP, INDIA

Abstract: Dhar town is located in the western region of M.P. state. It is the Northern plateau of malwa and Southern plain of nimar. Due to lack of knowledge people use ground water for drinking without testing, which may be unsafe. It is observed in few places that the people who are using water from underground resources are suffering from acidity, constipation, early graying of hair, hair loss, and kidney problems, with the formation of calcium oxalates and calcium urates in kidney and the gall bladder as a stone. Physicochemical analysis shows that underground water contains higher conductivity, turbidity and hardness with calcium carbonates and bicarbonates and some samples also shows higher values of nitrates and sulphates. Direction wise analysis of ground water samples done covering whole town and information about health status was collected from hospitals, nursing homes and questionnaire basis people are warned regarding the bad effect of this water suggestions are also made for the proper utilization of water without negative effect. For bringing up ground water level, artificial recharging is also suggested and implemented at many places. Recharging can help in increasing ground water level and dilution and can reduce the effect of calcium salts. My present work may be useful in protecting people from such diseases so they can enjoy healthy and cheerful life.

Keywords: Dhar, underground water, calcium urates, kidney.

ISCA-ISC-2012-03BS-15

Role of Invertase Enzyme in Pathological Characterization of Different Isolates of Red Rot Pathogens

Yadav Ashok[1], Khan Mohd. Fareed[1], Yadav Mukesh Kumar[1], Bhatnagar Mukul[1], Dwibedi Vagesh[1], Srivastava Anjani[2] Lal Ramji[2] and Ansari Mohammad Israil[1]
[1]Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow-226 010, INDIA
[2]Indian Institute of Sugarcane Research, Lucknow-226002, INDIA

Abstract: Sugarcane (Saccharum officinarum) is a cash crop as well as main source of sugar in India and abroad. Red rot caused by the *Colletotrichum falcatum* is a major constraint for cultivation of sugarcane in India. This disease is spread through the infected setts of sugarcane. Isolates of C. falcatum were collected from the different parts of India. These isolates were characterized on the basis of spread of disease in standing crop as well as through RAPD (Random Amplification of Polymorphic DNA) using different random primers. The isolates of red rot pathogen were infected into the healthy sugarcane varieties in the early monsoon season and spread of the disease was monitored as well as elevation of the invertase enzyme was also recorded with time course in sugarcane leaves to cal virulence of isolate with invertase activity. We have observed the elevation of the invetase enzyme is different with the different isolates with same sugarcane variety. Further isolated were differentiated on the basis of polymorphic bands with different primers. RAPD data was further analyzed by UPGMA (unweighted pair group method with arithmetic means analysis) for the genetic variability among the isolates. Our study is in progress to correlate RAPAD data and invertase enzyme activity with different isolates of red rot pathogen.

Keywords: Sugarcane, cash crop, *Colletotrichum falcatum,* invetase.

ISCA-ISC-2012-03BS-16

Air Pollution Induced Changes in Foliar Morphology of two Shrub Species at Indore City, India

Tiwari S. and Sikka J.
Department of Botany P.M.B. Gujarati Science College, Indore 452001, INDIA

Abstract: The use of plants as monitors of air pollution has long been established as plants are the initial acceptors of air pollution. In Indian cities, unplanned development of industrial and residential areas has further added to this problem. The Total pollution stress of an area affects the growth of various plants in non-uniform manner. Therefore various plant parameters can be used to measure the effect of pollution. Effect of air pollution on two shrub species viz. ***Calotropis gigantia*** and ***Ipomoea Fistulosa*** at three sampling sites of Indore city were studied. The parameters examined were fresh and dry weight of leaves, L/B ratio, specific leaf area (L/D ratio), size of stomata and stomatal index of the plants growing in polluted habitats. Dust particulates remain in air for varying length of time and get deposited on various plant parts of the plants; especially on leaf surface and affect vegetation of the areas.

Keywords: Air Pollution, Industrial Pollution, Vehicular Pollution, Foliar morphology, Stomatal Index.

ISCA-ISC-2012-03BS-17

Effect of Physical and Chemical Mutagens on Soybean

Patil Geeta P.
Arts, Comm. and Science College, Bodwad, Dist Jalgaon, MS, INDIA

Abstract: Two varieties of soybean (Glycine max (L) Merill) viz., JS-335 and PKV-1 were treated with various doses of physical (gamma rays) and chemical (EMS) mutagens. A dose dependent decrease was noticed in most of the characters like plant survival, germination. The maximum reduction was found in higher doses of mutagens in both the cultivars, while increased pollen sterility was associated with the corresponding increase in doses of mutagens. Results indicated that higher doses were more effective in all the three generations (M1, M2, and M3). However the M1 showed more pronounced reduction in germination and survival than M2 and M3. The increase in pollen sterility was more in cv. PKV-1 indicating its more sensitivity as compared to cv. JS-335.

Keywords: Gamma rays, EMS, mutagens.

ISCA-ISC-2012-03BS-18

Antimicrobial Studies on 66 Indian Medicinal Plants Against Multi-Drug Resistant Human Pathogens

M. Paul John Peter[1*], J.Yesu Raj[1], V. Joy[1] and M. Venkatesan[2]
[1]Department of Chemistry, St. Joseph's College, Thiruchirappalli, Tamilnadu, INDIA
[2]Department of chemistry, Periyar University, Salem, Tamilnadu, INDIA

Abstract: A series of 66 Indian medicinal plants belonging to different families used in various infectious disorders, were screened for their antimicrobial properties. Screening was carried out at 1000 and 500 µ/ml concentrations by agar dilution method against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumonia* and *Pseudomonas aeruginosa*. All the plant extracts showed activity against at least one of the test organisms used in the screening. On the basis of the results obtained, we conclude that the crude extracts of *Abutilon indicum L, Asparagus racemous, Centellaasiatica, Coleus aromaticus, Euphorbia hirta L., Hybanthusenneaspermus L.Mollugopentaphylla L, Terminaliabellirica and Sennaoccidentalis L.*exhibited significant antimicrobial activity and properties that support folkloric use in the treatment of some diseases as broad-spectrum antimicrobial agents. This probably explains the use of these plants by the indigenous people against a number of infections.

Keywords: Antimicrobial; Screening; Plant extracts; Indian medicinal plants.

ISCA-ISC-2012-03BS-19

Reactivity of Monoclonal Antibodies Raised Against JE Virus Vaccine Strain SA-14-14-2 and Wild Type Indian Isolate 733913

Shivhare Neelam and Vyas Priti
PMB Gujarati Science College, Indore, MP, INDIA

Abstract: ***Japanese encephalitis*** (JE) is potentially lethal infection of the central nervous system caused by the JE virus, a member of the mosquito borne encephalitis complex of the family flaviviridae. Presently formalin- inactivated virus vaccines are available but China has developed live attenuated JE virus strain SA-14-14-2 for vaccine from the wild type SA-14 strain which was characterized by MAb's. This strain when compared with Indian isolate 733913 against MAb's were not found effective because of natural selection may occur at specific sites that may not destroy the secondary or tertiary structure of E- protein.

ISCA-ISC-2012-03BS-20

Plasmid Mediated Resistance in Enterobacterial Pathogens

Vyas Priti
Dept. of Biotechnology, P.M.B. Gujarati Science College Indore, M.P., INDIA

Abstract: Isolation of plasmids from 10 MDR enterobacterial pathogens was carried out using alkaline lysis method. *E. coli* DH 5á (sensitive) was used as control which was found to be sensitive for chloremphenicol and gentamycin. The resistance pattern towards 10 commonly used antibiotics was found to be almost similar for all pathogens. The hypothesis that resistance is plasmid mediated came true by performing plasmid isolation and gel electrophoresis. Gel electrophoresis was performed using 0.8% agarose in TAE buffer. Control of 50 kb and 70 kb was used to determine size of the plasmids. The MDR isolates used were *E. coli, Klebsiella pneumoniae, Citrobacter diversus, Shigella flexineri*, *Citrobacter freundii, Pseudomonas aeruginosa, Proteus vulgaris, Proteus myxofaciens, Salmonella typhi* and *Klebsiella oxytoca.* Drug sensitive *E. coli* did not show the presence of plasmid DNA band on the gel. All MDR isolates were found to harbor almost similar plasmids. The isolates posses approximately 60 kb plasmid DNA, conferring resistance towards multiple antibiotics. These results suggest that antibiotic resistance is encoded on a high molecular weight plasmid.

Keywords: MDR, plasmid, resistance.

ISCA-ISC-2012-03BS-21

Increased Phenolic Content in Sesame (*Sesamum Indicum* L.) and Mustard (*Brassica juncea* L.) against *Fusarium Oxysporium* Infection acts as Defense Mechanism

Tyagi Ruchi and Sharma Anubhuti
Department of Bioscience & Biotechnology, Banasthali University, Banasthali 304022, INDIA

Abstract: A large number of pathogens attack plants are responsible yield reduction. However, plants have an innate immunity system to defend themselves against pathogens. Sesame and mustard are important oil yielding crops, affected by a wide variety of pathogens. Therefore, protection of these oilseed crops from pathogens is required. *Fusarium oxysporum* cause wilt and yellow diseases in sesame and mustard respectively. So, the present work was undertaken to understand the changes in polyphenols content in two genotypes of sesame (*Sesamum indicum* L.) viz. RT-346 and RT-127 and two genotypes of mustard (*Brassica juncea* L.) viz. NRCDC2 and BIO-902 in both control and infected seven days old plant. The steady increase was observed in level of polyphenols over a period of 7 days in both infected sesame and mustard plants in comparison to healthy plants. The results achieved represent a crucial contribution to understanding plant-pathogen interaction and may be useful in breeding programs for developing disease resistance plants.
Keywords: Fusarium oxysporium, Sesamum indicum L., Brassica juncea L., polyphenols.

ISCA-ISC-2012-03BS-22

In Vitro Organogenesis from Leaf Derived Callus Culture of *Capsicum Frutescens*

***Geetashree Bora[1], Jubilee Purkayastha[1], Gogoi H.K.,[1] and Handique P.J.[2]**
[1]Division of Biotechnology, Defence Research Laboratory, Tezpur-784001, Assam, INDIA
[2]Department of Biotechnology, Gauhati University, Guwahati-781014, Assam, INDIA

Abstract: *Capsicum frutescens,* also known as Bird's eye chilli, is one of the domesticated species of the genus *Capsicum* of the Nightshade family, Solanaceae. This rare type of *Capsicum* is endemic to Assam and nearby north eastern region. It is best known for its peculiar aroma, unique hotness and unusual growing habit on the plant. But this unique hotness is gradually deteriorating because of uncontrolled cross pollination and genetic mutation that is often seen in the hotness expressing capsaicin genes. Therefore it has become a pre-requisite for the scientific community to upgrade the germplasm conservation strategy. The technique of micropropagation or *In vitro* organogenesis is an excellent way to recover the desired pungency while maintaining a steady germplasm. *In-vitro* propagation via indirect organogenesis from leaf derived callus culture has been tried in *Capsicum frutescens*. Full strength MS medium supplemented with 3.5 µM BAP and 6.2 µM 2,4-D was optimised for callus induction. A maximum of 7 shoots were differentiated from the surface of callus when transferred to MS medium enhanced with 7.8 µM BAP and 3.6 µM NAA. The individual healthy shoots were rooted well on MS medium provided with 2.5 µM IBA and 1.5 µM NAA. The *In-vitro* raised plantlets with properly developed shoots and roots were acclimatized on the substrate containing half strength MS medium along with soil and vermicompost (1:1) and 75% plant survival rate was recorded.
Keywords: *In vitro* organogenesis, *Capsicum frutescens,* MS medium, Germplasm conservation

ISCA-ISC-2012-03BS-23

Isolation and Characterization of Multi drug Resistant super Pathogens from Soil samples collected from Hospitals

Prasad Chandan[1], Mishra R.P.[2], Ali Asif[3], Gangwar V.S.[4] and Chand Shweta[5]
[1]Dept. of Chemistry, D.A.V. College, Kanpur, INDIA
[2]D&D Division, MRD Life Sciences, Lucknow, INDIA
[3]Integral University, Lucknow, INDIA
[4]Dept of Chemistry, V.S.S.D. College, Kanpur, INDIA
[5]Dept of Chemistry, Christ Church College, Kanpur, INDIA

Abstract: Soil samples from two different city hospitals were collected pre-treated along with several antibiotics for primary screening of numerous microbes and were cultured after serial dilution over sterile nutrient agar plates. A total of three isolated were identified and purified from the samples, further screened for individual antibiotics at their respective varying concentrations and all the three isolates were found to be strong resistant against antibiotics selected in the study. Morphological, biochemical and physiological properties were analysed for all the isolates.
Keywords: MRD pathogens, hospital samples, *Acinetobacter baumannii*, drug resistance.

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Isolation, Optimisation and Partial Purification of Lipase Enzyme

Kalapatapu Vishnu Priya[1], Reddy I. Bhaskar[1] and Ganesan Shoba[2]
[1]Biochemistry Department, Gitam University, Visakhapatnam, INDIA
[2]Biogenei Lab, Hydrabad, INDIA

Abstract: Screening and isolation of lipase producing strains of bacteria was carried out from eleven different soil samples collected from various places in Andhra Pradesh and Hyderabad. The isolates were positive on tribuytrin agar media and thus are selected as lipase producing strain. The strain was identified and characterised by the microscopic and biochemical tests pseudomonas sps, a lipase producing enzyme. The optimisation of various cultural conditions was carried out by which the lipase production was enhanced with the optimal parameters being incubation period of 48 hours (24.1U/mL), palm oil as carbon source (24.3 U/ml, peptone as nitrogen source (24.5 u/ml), initial pH of 7.0 and incubation temperature of 36ºc (25.0 U/mL). The optimum agitation speed of 160 rpm produced lipase having 25.9 U/ml activity. Finally, the enzyme lipase was purified by ammonium sulphate fractionation, dialysis and column chromatography. The ammonium sulphate precipitation and dialysis showed an increased specific activity of 1.71 U/ml and 6.17 U/ml when compared to crude enzyme which showed specific activity of 0.45 U/mg. Further purification was carried out by ion-exchange chromatography using DEAE column. The purified enzyme showed higher specific activity (15.24 U/mg) with a purification fold of 33.8. The molecular mass of purified lipase was estimated to be approximately 30 kDa by SDS-PAGE.kDa by SDS-PAGE. This result showed that pseudomonas sps under study is a good producer of lipase, which can be beneficial for industries.

Keywords: pseudomonas sps, lipase, chromatography, dialysis.

ISCA-ISC-2012-03BS-25

Antimicrobial Activity of Illicium Verum (Star anise) when Tested Against four gram-negative Food Spoilage Bacteria

Masih Usha and Sharma Shobha
Department of Botany, Mata Jija Bai Govt. Girls P.G. College, Indore, MP, INDIA

Abstract: The present study was aimed at investigating the potential of culinary spice commonly known as Illicium verum (Star-Anise) against four gram-negative food spoilage bacterial strains of Escherichia coli O157:H7 namely E. coli ATCC 43888, E. coli ATCC 25922, E. coli ATCC 8739 and E. coli ATCC 43895. Analysis of the results of sensitivity tests (disc and agar well diffusion assay) indicated each of the bacteria to be completely inhibited, intermediately inhibited or completely resistant towards spice extracts. The formation of zones of inhibition present where inhibition had occurred indicated that the spice tested was effective as an antimicrobial agent when screened. Zones of absolute inhibition greater than 15 mm in diameter were obtained during positive agar well and disc diffusion assaying with antibiotic tetracycline used as the antimicrobial agent of choice. Inhibition zones observed to be in the upper limit range (pertaining to the study) of 18 mm in diameter and in some instances demonstrated antimicrobial effectiveness greater than that exhibited by the positive control tetracycline(15mm).The observations of such inhibition amongst the spices were comparatively significant and demonstrated the potential use of this spice as antimicrobial agents with an efficacy that can be compared to that of the already recognized and widely used antibiotic, tetracycline. The minimum inhibitory concentration (MIC) was successfully determined for this spice extracts (Acetone, Ethanol, Methanol, Hot water and Cold water). The reactions observed during MIC determination were confirmatory of the antimicrobial activity present in the extracts of spice. Analyses of the results conclude that the active compounds present in the selected spices were effective against tested microbial species. This observation demonstrated that spice can be used for food preservation. This could in the future be an alternative preservative to chemical preservative for the microbial food spoilage strains investigated. Active compounds also analyzed in selected spices. Phytochemical qualitative test performed for alkaloids, tannins, phlobatanins, saponins, flavonoids, terpenoids and cardiac glycosides for the spice.

Keywords: Antimicrobial, Star-anise, Extracts, Food spoilage bacterial strains, Food preservation, Phytochemical.

ISCA-ISC-2012-03BS-26

Ethno-Botanical Survey of Sacred Groves and Sacred Plants of Jhalod and Surrounding Areas in Dahod District, Gujarat, INDIA

Maru R.N.[1*] and Patel R.S.[2]
[1*]J.J.T. University, Rajasthan, INDIA
[2]Department of Biology, KKSJ Maninagar Science College, Ahmedabad, Gujarat, INDIA

Abstract: The Present Paper Aimed 37 species plants belonging to 26 families documenting of sacred groves and sacred plants. I observed and documented series of sacred groves six sacred groves viz. Kedarnath Mahadev, Panchkrishna, Bhamrachi Mata Jhalaimata, Ghugardev Mahadev and Sankatmochan Hanuman sacred grove studied during the year 2011-12. The investigations revealed that there are angiosperm herb, shrub and trees species were reported which belongs to different families Bombax ceiba L., Aegle marmelos (L.), Ailanthus excelsa Roxb., Azadirachta indica A. Juss., Melia azedarach L., Maytenus emarginata (Willd.) D.Hou, Mangifera indica L., Butea monosperma (Lam.) Taub., Dalbergia sissoo Roxb, Sterculia urens Roxb. Pithecellobium dulce (Roxb.) Bth., Prosopis cineraria (L.) Druce., Terminalia arjuna (Roxb). W. & A., Terminalia bellirica (Gaerth.) Roxb, Eucalyptus globulus Labill., Holoptelea integrifolia (Roxb.) Konth, Diospyros melanoxylon Roxb., Holarrhena antidysenterica (L.) Wall ex G. Don. , Wrightia tinctoria R. Br., Calotropis procera (Ait.) R. Br., Datura metel L., Tectona grandis L. f., Holoptelea integrifolia (Roxb.) Planch., Ficus arnottiana Miq., Ficus benghalensis L., Ficus religiosa L., Ficus racemosa L., Agave americana L., Phoenix sylvestris (L.) Roxb. and Dendrocalamus strictus Nees. Dahod district is one of the tribal districts of the Gujarat state.
Keywords: Sacred groves, Sacred plants, Jhalod, Conservation, Indigenous knowledge.

ISCA-ISC-2012-03BS-27

Genetic Transformation of *Brassica Juncea* Expressing Chickpea Lectin Gene Against Aphids

Singh Puja, Tiwari Poonam, Gupta Ram Niwas, Koundal Kirpa Ram and Kansal Rekha*
National Research Centre on Plant Biotechnology, Lal Bahadur Shastri Building, Pusa Campus, New Delhi -110012, INDIA

Abstract: Among the seven edible oilseeds cultivated in India, *Brassica* contributes 28.6 % in the total production and the demand will increase further. Damage due to aphids (*Lipaphis erysimi)* is the major constraint inflicting as high as 97.6% yield loss. The pesticides used are hazardous to human health, animals and the environment. Developing aphid resistance in mustard through genetic engineering assumes high significance because of the lack of primary resistance gene pool. The carbohydrate binding property of plant lectins makes them useful to develop transgenic plants resistant to hemipteran insects. A full length lectin gene isolated from chickpea was directionally cloned under phloem specific (rolC) promoter in a binary vector (pORE04), mobilized to *Agrobacterium tumefaciens* GV3101 and used to transform stem segments generated from cotyledonary nodes and cotyledonary petioles of *Brassica juncea* cv. Pusa jaikisan. The co-cultivated explants were selected on regeneration medium augmented with kanamycin. The well grown transformed plants were hardened, acclimatized and shifted to pots. Molecular analysis was done to show integration of transgene. Using stem segments 36.2-38% transformation efficiency was obtained while it was only 17.4-18% with cotyledonary petioles. The presence of nptII and lectin gene confirmed the integration of transgene. The effect of lectin on aphids was assessed by monitoring the weight of insects on individual transgenic plants of *Brassica* for 5 days of bioassay period. The assay showed reduced overall growth of insects and fecundity leading to mortality of 20-22 %. Therefore, the plant lectin genes can be used to develop the mustard resistant to aphids to meet the ever-growing demand of oil in the country and the vertical growth in mustard production can be brought by breaking the yield barriers.

ISCA-ISC-2012-03BS-28

Development of Transgenic *Nicotina Tobacum* Against Lepidopteran Insect Pests Using Lectin Gene From Lentil (*Lens Culinaris)*

Tiwari Poonam, Singh Puja, Gupta Ram Niwas, Koundal Kirpa Ram and Kansal Rekha*
National Research Centre on Plant Biotechnology, Lal Bahadur Shastri Building, Pusa Campus, New Delhi -110012, INDIA

Abstract: The increased use of agrochemicals has favoured the buildup of crop pests with a result that many minor pests have assumed the status of major pests. The misuse and overuse of pesticides has lead to problems of pesticide resistance, resurgence and contamination of different components of the environment. Therefore, the challenge today is to achieve higher and stable crop production with safe and eco-friendly strategies. In a co-evolving system of plant-insect interactions,

plants synthesize a variety of metabolites for their protection against insects. Among which plant lectins play an important role in the plant's defense , as they bind to specific glycoprotein located in midgut of insects and causes death by inhibiting the absorption of nutrient's. A full length lectin gene from lentil was isolated, sequenced and cloned under the control of double 35S promoter in a pJIT117 vector and subcloned in binary pCAMBIA2301 vector. The gene construct was mobilized into *agrobacterium* strain GV3101 and used for transformation of leaf discs of tobacco. To check the efficacy of expressed lectin gene, second instar larvae of *spodoptera litura* were released on the leaves of control and transgenic plants. From fives batches of co- cultivated leaf discs, 79 green shoots were developed on selection medium supplemented with kanamycin and finally transferred to rooting medium. 45 fully developed plantlets were hardened, acclimatized and shifted to phytron for further analysis. The *Spodoptera* larvae fed on transformed tobacco showed reduction in weight leading to mortality. Therefore this gene can be transferred to other agronomically important crops to develop transgenic plants resistant to Lepidopteran insect pests and a scope to improve our health, create a safer and more secure food supply, generate prosperity and attain a more sustainable environment.

ISCA-ISC-2012-03BS-29

Values of RBC During Reproductive Cycle in Megachiropteran Bat *Rousettus Leschenaulti* (Desmerest)

Bhatkulkar M.M.[1] and Watkar A.M.[2]
[1]Dept. of Zoology, J.N. College, Wadi, Nagpur, Maharashtra, INDIA
[2]Dept. of Zoology, Bhalerao Science College, Saoner, Dist. Nagpur, Maharashtra, INDIA

Abstract: The Indian fruit bat, Rousettus leschenaulti shows a peculiar breeding cycle. Adult males show double peaks in their testicular weight corresponding to the two pregnancy cycles of the female. The first peak occurs during October–November and the second during February–March. Females show I-pregnancy cycle from December to April and IInd – Cycle from April to July. The blood profile is affected by various factors such as age, gender and reproductive state, by endogenic rhythms of various metabolites as well as by external factors such as season, time of the day, food availability and quality In RBC energy is generated almost exclusively through the breakdown of glucose. In Rousettus leschenaulti the mean RBC values varied from month to month or in other words according to reproductive status of both the sex in the same direction but with a significant difference. An increase in the RBC counts in R.l. in the male during November, October and in the female during June is dependent to a large extent upon the concentration of blood (water volume).
Keywords: Rousettus leschenaultia, RBC, blood, reproductive cycle.

ISCA-ISC-2012-03BS-30

Threats of Biodiversity and Role of Biotechnology in Conserving it

Singh Rajvir
Department of Botany, K.K. Degree College, Etawah, INDIA

Abstract: Biodiversity,particular phytodiversity as a whole is the fundamental basis of human survival and over all development as it provides clothing, sheller, Medicine, biomass, energy threats to biodiversity, including disease and climate changes are reaching inside the borders of protected areas, climate change, for example is often cited as a serious threat in this regard, because there a feedback loop between species extinction and the release of carbon dioxide into the atmosphere, the effect of global warming add a catastrophic threat towards a mass extinction of global biological diversity. The extinction threat is estimated to range from 15 to 37 percent of all species by 2050 or 50 percent of all species over the next 50 years. Advances in biotechnology especially in the area of *in vitro* culture techniques and molecular biology provide valuable tools for conservation and management of plant genetic resources. In addition, several strategies can be used to access the genetic fidelity of *in vitro* derived plants but most of them have limitations. To confirm the efficiency of the technique and genetic fidelity of the regenerant for making them commercially viable, a number of molecular markers are being utilized for screening the tissue culture raised progenies of plants. Several molecular markers techniques such as RAPD, ISSR, AFLP etc. are useful for assessment of genetic diversity, germplasm evaluation, elucidation of phylogenetic relationship, constructin of genetic linkage maps, map-based cloning and marker assisted slection.
Keywords: Biodiverity, *In vitro*culture,molecular marker.

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Bioremediation- Technology of 21st Century

Patel Bhavesh
V.P. and R.P.T.P. Science College, Vallabh Vidyanagar, Dist. Anand, Gujarat, INDIA

Abstract: Our environment broadly decides the quality of life on earth. In early times, we believed that we had an unlimited abundance of land and resources; today, however, the resources in the world show drastic reduction, in greater or lesser extent. The problems associated with contaminated sites now assume increasing prominence in many countries. Contaminated lands which are generally caused by post industrial activities resulted in health and environmental effect. This is connected with the production, use, and disposal of hazardous substances. The problem is worldwide, and the estimated number of contaminated sites is significant. The conventional techniques used for remediation of contaminated sites have been to dig up contaminated soil and remove it to a landfill, or to cap and contain the contaminated areas of a site. The methods have many drawbacks. A better approach than these traditional methods is to completely destroy the pollutants if possible, or at least to transform them to less harmful substances. Bioremediation is an option that offers the possibility to destroy or render harmless various contaminants using natural biological activity. To be more specific Bioremediation is a technology that involves the use of biological systems for destruction or transformation of various chemicals (pollutants) to less harmful forms. The end products of effective bioremediation are water and carbon dioxide which are nontoxic and can be accommodated without harm to the environment and living organisms. As such, it uses relatively low-cost, low-technology techniques, which generally have a high public acceptance and can often be carried out on site. It will not always be suitable, however, as the range of contaminants on which it is effective is limited, the time scales involved are relatively long, and the residual contaminant levels achievable may not always be appropriate. Although the methodologies employed are not technically complex, considerable experience and expertise may be required to design and implement a successful bioremediation program, due to the need to thoroughly assess a site for suitability and to optimize conditions to achieve a satisfactory result. Bioremediation has been used at a number of sites worldwide, including Europe, with varying degrees of success. Techniques are improving as greater knowledge and experience are gained, and there is no doubt that bioremediation has great potential for dealing with certain types of site contamination. Unfortunately, the principles, techniques, advantages, and disadvantages of bioremediation are not widely known or understood, especially among those who will have to deal directly with bioremediation proposals, such as site owners and regulators. Here, I would like to introduce straightforward, pragmatic view of the processes involved in bioremediation, the advantages and disadvantages of the technique, and the issues to be considered when dealing with a proposal for bioremediation.

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Optimization of Purification Strategies for Recombinant Streptokinase by Single Step Hydrophobic Interaction Chromatography

Kumar Prakash[1,2], Ramalingam S.[1], Paul Rajkumar[1] and Singh Nijendra Pratap[2]
[1]Centre for Biotechnology, Anna University, Chennai-600025, INDIA
[2]Department of Biotechnology, Anand Engineering College, Agra-282007, INDIA

Abstract: Streptokinase (SK) is a protein used for dissolution of blood clots. Although its natural production is limited, it can be produced in large scale through recombinant method. But the cost of downstream processing is very high up to 70 – 80 percent of entire cost. The aim of my project was to cut the downstream cost of recombinant Streptokinase (rSK) purification. I optimized the purification of rSK through single step hydrophobic interaction chromatography. The streptokinase gene without its native signal peptide was cloned and expressed in *Escherichia coli* BL21 (DE3), using pET expression vector. It was over-expressed in batch culture at by 0.1M IPTG induction. A high concentration of the recombinant protein obtained from the intracellular system enabled single-step purification by hydrophobic interaction chromatography, with nearly 100% purity. After purification, a single band of molecular weight 47kDa was observed and its functional activity was also confirmed by caseinolytic assay. The whole process of expression and purification involved a minimal set of operations and would be very useful for economic production on a large scale of proteins like streptokinase.
Keywords: Downstream Processing, Recombinant Streptokinase, *E. coli*, Hydrophobic Interaction Chromatography.

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Dot ELISA: Immunological Technique for Pesticide Residue Analysis

Parmar Prabha, Kocher Devinder Kaur
Department of Zoology, Punjab Agricultural University, Ludhiana, Punjab, INDIA

Abstract: Pesticides are used globally for enhancing crop yields. However, their excessive use/misuse, especially in the developing countries, results in widespread food and environmental contamination. Therefore current methods such as gas chromatography and high-performance liquid chromatography have been used successfully, with great sensitivity and reliability, for analysis of many pesticides. However, these classical methods require a high capital expenditure and skilled analysts including time-consuming sample preparation steps. Therefore, there is a growing demand for more rapid and economical methods for determining pesticide residues. Immunoassays have recently been emerging as an alternative to traditional methods to meet such demands of fast, sensitive and cost-effective tool for pesticide residue analysis. The dot ELISA is a qualitative ELISA test, which can be performed more quickly without the need of equipments or technical expertise is highly desirable. Dot ELISA is a micro ELISA utilizing antigen "dotted" onto nitrocellulose filter discs that has been used for more than 25 years. Because of its relative speed and simplicity, the dot ELISA is an attractive alternative to standard ELISA .This technique can even detect at nano-gram scale among targeted compounds in situ.
Keywords: Dot ELISA, Immunochemical technique, pesticide residue, GC, HPLC

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Curcumin: A Spicy Favour for the Heart

Vibha Rani*[1], Atale Neha[1] and Kohli Shrey[1,2]
[1]Department of Biotechnology, Jaypee Institute of Information Technology, Noida, UP, INDIA
[2]Charité Campus Buch, Experimental and Clinical Research Center, Berlin, GERMANY

Abstract: Heart failure is a major cause of death in India and worldwide. Hypertrophy, a compensatory mechanism for cardiac stress, if prolonged, may lead to heart failure and sudden death. *Curcuma longa*, a traditional Indian medicinal herb and a well known food additive, has been widely applied in clinical therapy for centuries. Curcumin, the principal curcuminoid of this plant, has long been used as a dietary spice and is an excellent nutraceutical in wound-healing since millennia and is also used for the treatment of a variety of diseases in traditional Indian and Chinese medicine. Recently, few studies have evaluated the potential of curcumin in limitation of cardiac injury and preservation of cardiac function following stress. Our studies show that curcumin is able to prevent/reverse the stress induced cardiotoxic effect seen in the cardiac muscle cells due to catecholamines. We have evaluated the potential of curcumin as a cardioprotectant by targeting the transcriptional pathway regulating the re-expression of fetal cardiac gene program. We further explored our research to analyze the effect of curcumin on the proteins involved in the ECM remodelling in cardiac stress in cardiac muscle cells. Our results demonstrate an overall inhibitory effect of curcumin on various targets of the cardiac disease gene program which may contribute in the prevention of hypertrophic cardio-toxicity.

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Symbiotic Response of Some Pulses to Rhizobium

Singh Khimiya[1] and Shrivastav Sheela[2]
1Deptt. of Botany, M.L.C. Govt Girls P.G. College, Khandawa, MP, INDIA
2Deptt. of Zoology, M.L.C. Govt Girls P.G. College, Khandawa, MP, INDIA

Abstract: Pulses play a very important role in agricultural systems. India is the world's largest producer and the largest consumer of pulses. Pakistan, Canada, Burma, Australia and the united states, in that order, are significant exporters and are India's most significant suppliers. Canada now accounts for approximately 35% of global pulse trade each year. The global pulse market is estimated at 60millions tonnes. Pulses provide high protein grain and herbage and also maintaining and improving soil fertility. The process of Nitrogen fixation depends greatly on phosphorous availability. Phosphorous plays a Key role in the symbiotic N fixation process. Legumes needs a readily available supply of phosphorous from the soil. It serves during critical growth periods such as seedling, root development and over a more prolonged period for optimum photosynthesis. Interaction between different Rhizobium species in green gram, black gram, chick pea, and pigeon pea was studied using pot culture and field experiments. These experiments revealed that Rhizobium Spp. Inoculation significantly enhanced total dry matter, nodule formation and productivity over than in control.

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Regulation of Carbon Metabolism in C_3 and C_4 Crop Plants by Ambient Solar UV-B and UV-A Radiation

Kataria Sunita and Guruprasad K.N.
School of Life Scices, Devi Ahilya University, Khandwa Road, Indore, MP, INDIA

Abstract: The solar ultraviolet-B background level is often high and posing an environmental challenge in most of the tropical region of the world including India, but which crop will be more sensitive to increased UV-B has received little attention. UV exclusion studies would help in the assessment of the effect of ambient level of solar UV-A (315 - 400 nm) and UV-B (280 - 315 nm) radiation. The field experiments were conducted for the comparative study of the effects of ambient UV by the exclusion of solar UV components on regulation of carbon metabolism among C_3 (Cotton and Wheat) and C_4 (Amaranthus and Sorghum) crop species. The plants were grown in specially designed UV exclusion chambers, wrapped with filters that excluded both UV-A/B (< 400 nm) and UV-B (< 315 nm). The control plants were grown under a filter transmissible to UV and in open field with no filters. Exclusion of UV significantly enhanced plant height, leaf area, biomass accumulation and yield of all the four crops tested. Cotton (C_3 dicot) and Amaranthus (C_4 dicot) showed more enhancements compared to Wheat (C_3 monocot) and Sorghum (C_4 monocot). The photosynthetic pigments were significantly increased while UV-B absorbing compounds were significantly decreased after exclusion of UV-B and UV-A/B. Net rate of photosynthesis, stomatal conductance, soluble proteins and the activity of Rubisco and PEP carboxylase were significantly increased after exclusion of UV-B/A components from natural solar spectrum in all the four crop species studied. Enhancement in CO_2 fixation was higher in dicots (cotton, *Amaranthus)* compared to monocots (wheat, *Sorghum*) by exclusion of soal UV. The results indicated a suppressive action of ambient UV-B (10 KJ/m^2/day) on carbon metabolism, dicots were more sensitive than monocots in this suppression. Exclusion of solar UV-B will have agricultural benefits in both C_3 and C_4 plants under tropical climate.

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Managing Obesity with Pancreatic Lipase Inhibitors: Inhibitory Effects of Crude Plant Extracts on Pancreatic Lipase

Singh Sukhdev and Kanwar Shamsher Singh*
Department of Biotechnology, Himachal Pradesh University, Shimla-171005, INDIA

Abstract: Obesity is an increasingly serious global problem, not only for the harm it causes in its own way, but also due to the associated health threats, especially Type 2 diabetes, systemic hypertension, cardiovascular disease, certain cancers, asthma, and sleep apnea. For a drug to have a significant effect on body weight, it must ultimately affect energy intake and/ or its expenditure. The development of inhibitors of nutrient digestion and absorption, which reduce energy intake through gastrointestinal mechanisms without altering any central mechanisms, is one of the most important strategies in the treatment of obesity. Use of metabolic inhibitor/ drug control of lipid metabolism offer a possible alternative to prevent or treat these diseases. Inhibition of pancreatic lipase is an attractive approach for the treatment of obesity. For instance, Orlistat, a hydrogenated derivative of Lipstatin, which is obtained from *Streptomyces toxytricini*, is the only pancreatic lipase inhibitor currently approved for long-term treatment of obesity. Its use can result in up to 10% weight loss when used in combination with dietary, behavioral and exercise therapies; however, it has unpleasant and non-negligible side-effects. Naturally occurring phyto-chemicals present an exciting opportunity for the discovery of newer anti-obesity agents that are safe. A few natural lipase-inhibitor(s), like Licochalcone A, has been isolated from the roots of *Glycyrrhiza uralensis*, Platycodin D from the fresh roots of *Platycodon grandifloru*, Dioscin from *Dioscorea nipponica*, phenolic constituents from the leaves of *Nelumbo nucifera* and other components from a few herbs. We have screened crude extracts of some plants to test their anti-obesity activity using porcine pancreatic lipase assay (PPL; triacylglycerol lipase, EC 3.1.1.3) in *in vitro* assay system. Among tested plant species, only 5 plant-extracts (*Gerardiana* sp., *Berberis* sp., *Taraxacum* sp., *Juniperus* sp. and *Vinca* sp.) showed high anti-lipase activity using *p*-nitrophenyl palmitate as a substrate in PPL assay. These plant-extracts will be further tested *in vivo* in an animal model or *in vitro* on adipocyte cell line for fat inhibitory activity. These plant-extracts might be of therapeutic interest for the treatment of obesity. Further results of the present investigation will be presented.

Keywords: Type 2 diabetes, orlistat, porcine pancreatic lipase.

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Ethnomedicinal Survey of Medicinal Plants Used in the Treatment of Male Infertilty among the IFA Nkari People of INI Local Government Area of Akwa Ibom State, Nigeria

Erhabor J.O.[1] and Idu M.[2]
[1]Department of Plant Biology and Biotechnology, Faculty of Life Sciences, University of Benin, PMB 1154, Benin City, NIGERIA
[2]Benson Idahosa University, PMB 1100, Benin City, Edo State, NIGERIA

Abstract: An ethnomedical survey was carried out to document medicinal plants used in the treatment of male infertility among the Ifa Nkari people of Ini Local Government Area of Akwa Ibom State, Nigeria. Ethnomedical data were collected by oral interviews using a semi-structured questionnaire. A total of 20 respondents which included 19 males and 1 female were interviewed. A record of 31 medicinal plants belonging to 24 families with their botanical names, family names, common names, local names, plant parts used,, methods of preparation, dosages and their folk uses were documented. The Poaceae family was the most represented with three species followed by Arecaceae, Cucurbitaceae, Liliaceae, Musaceae and Zingiberaceae families which has two species each and others one species. Leaves and roots were the commonest plant parts used closely followed by seeds, bark and fruits. The use of plants for the treatment of male infertility has been on the increase and the current renewed interest in natural products to sustain health globally cannot be overemphasized. It is therefore recommended that the reported anti-infertility plants be investigated to ascertain their safety and efficacy in order to improve the quality of life of man as well as the well-being of married couples.
Keywords: Ethnomedicine, Male Infertility, Medicinal plants, Akwa Ibom State, Nigeria

ISCA-ISC-2012-03BS-39

Protozoological Investigation and Severity of Chicken Coccidiosis in Aurangabad District of Marathwada Region, Maharashtra State, India

Jadhav Bhimrao N.
Dept. of Zoology, Shri Muktanand College Gangapur, Gangapur Dist. Aurangabad, MS, INDIA

Abstract: Practically all the protozoa are so small that they require a microscope to see them. As a result, it was not until the advent of the microscope that they were discovered. In 1674 Leeuwenhoek saw the first parasitic protozoan, the oocysts of *Eimeria stiedai* in the bile of rabbit, but it was more than 150 years later that it was described. Hake (1839), who did so, thought that the oocysts were pus globules associated with carcinoma of the liver. Mandal (1975) made a review of the progress in the taxonomy of coccidia from India. Mandal (1970) reviewed the occurrence and distribution of avian coccidia in India, giving a classified list of 74 species of birds examined and the parasites found and a complete statement indicating the diagnostic characters of the 42 species of coccidia comprising of 19 species of Isospora, 1 species of tyzzeria, 3 species of Dorisiella, 16 species Eimeria and 3 species of Wenyonella He stated that about 60 species of coccidia belonging to six genra have been recorded from Indian bird so far. The coccidia are the cause of coccidiosis, a disease of considerable importance in domestic animals. The discovery of several species causing extensive pathological damage and mortality in poultry, cattle, sheep, goat, pigs and several other animals have increased their importance. The present study showed that the broiler chicken in Marathwada region of Maharashtra harbored 10 species of Eimeria. The species occurring in broiler chicken are as follows: - *Eimeria tenella, Eimeria necatrix, Eimeria brunetti*, *Eimeria acervulina, Eimeria maxima, Eimeria praecox, Eimeria mitis, Eimeria nikamae, Eimeria tarabaie* and *Eimeria shivpuri*
Keywords: Protozoa, Eimeria, Broiler Chicken, Coccidiosis etc.

ISCA-ISC-2012-03BS-40

Taxonomic Position of *Bipolaris oryzae* among other *Cochliobolus* Species using Ribosomal Region and Some Protein Coding Genes

Zahra Tazick and Mohammad Ali Tajick Ghanbary
Dept. of Plant Protection, Sari Agricultural Sciences and Natural Resources University, Sari, IRAN

Abstract: Using of gene sequence data to clarify evolutionary relationships and determine taxonomic status of organisms, including fungi, is common nowadays. This study investigates taxonomic position of Bipolaris oryzae among the genus Cochliobolus. For this purpose ITS rDNA and partial sequences of translation elongation factor (TEF1-á) and second largest subunit of RNA polymerase II gene (RPB2) were analyzed with Neighbor joining methods. Cochliobolus can be

segregated into two groups as previously proposed and B. oryzae placed with C. sativus and C. heterostrophus. Generally, the results of all three markers were the same and in congruent with previous studies. It seems that, this part of TEF gene wasn't able to break up species of Cochliobolus correctly but, RPB2 is a good marker for determination of taxonomic position of ambiguous species of this genus.

Keywords: *Cochliobolus miyabeanus, Bipolaris oryzae,* Phylogeny, ITS, RPB2, EF1-á

ISCA-ISC-2012-03BS-41

Transcriptome Sequencing of *Cymbopogon winterianus* and Characterization of Metabolic Pathway Genes

Kamalakshi Deviand and Priyabrata Sen
Department of Agricultural Biotechnology, Assam Agricultural University, Jorhat-785013, Assam INDIA

Abstract: Citronella (*Cymbopogon winterianus Jowitt*) is an aromatic grass that is a rich source of essential oils (terpenes), which are used extensively in perfumery, soap, cosmetic and flavoring industry throughout the world. Citronella oil is also used now-a-days as a biopesticide because of its non-toxic mode of action and thus gaining importance as far as environment protection is concerned. India has been a leading producer and exporter of these essential oils. However, the biosynthesis of terpenes in *Cymbopogon winterianus* is less studied and the -biosynthesis and regulatory pathway of terpenoids in Citronella is not elucidated clearly yet. It is also not understood why different chemotypes produce oil of different quality and in differing quantity. The presence of a sequenced genome or transcriptome shall be a massive benchmark for unraveling the biosynthetic pathway and further molecular manipulation. Thus, keeping these points in view, a study has been under taken to sequence the whole transcriptome of elite genotypes (Jorlab-1) of *Cymbopogon winterianus* followed by development of *in silico* EST Library to elucidate and functionally annotate the candidate metabolic pathway genes. cDNA library from different tissue viz. leaf, stem and roots have been constructed and EST analysis is in progress. EST generation and analysis shall provide an overview of the important metabolic pathway genes and their differential tissue specific expression.

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Isolation of Listeria Species From Milk Samples

Sangeetha M.S. and Gopal Shubha
Department of Studies in Microbiology, University of Mysore, Manasagnagotri, Mysore – 570 006, Karnataka, INDIA

Abstract: *Listeria* is a food-borne pathogen and also a common veterinary pathogen which causes a serious infection called listeriosis. *Listeria* is most commonly found in raw foods, soil, stream water, sewage, plants. It is also been found in uncooked meats, uncooked vegetabkes, unpasteurized milks, their products and processed foods. The study included the occurrence of *Listeria* species in milk samples. Samples included raw milk samples collected from different parts of Mysore city. 120 raw milk samples. Among these samples ten samples were found to be positive for *Listeria*. The positive cultures were identified upto species level by biochemical tests and finally confirmed by GLISA single path listeria kit test.

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Phytochemical Analysis of *Phyllanthus Fraternus*

Mehta Kavit[1], Patel B.N.[1] and Jain B.K.[2]
[1]Mehsana Urban Institute of Science, Ganpat University, Ganpat Vidhyanagar, Kherwa, Dist. Mehsana, North Gujarat, INDIA
[2]M.G.Science Institute, Navrangpura, Ahmadabad-380 009, INDIA

Abstract: *Phyllanthus fraternus* is a pan tropical weed and probably originates from western India. This plant belongs to Euphorbiaceae family. In India it is used as a herbal medicine called as 'Bhumyamlaki'. It is a large genus comprising about 750 species in tropical and subtropical regions. The plant material of *Phyllanthus fraternus* is isolated and collected from botanical garden of University campus. This plant species is extracted in chloroform solvent and evaluated for its phytoconstitutes . For phytochemical analysis of plant extract thin layer chromatography and preliminary screening method of phytoconstitute by Trease, Evans and Harborne was followed. The plant extract contains alkaloids like morphine and boldine. Extract also contains tannins, saponin, terpenoid and steroid. . The present study provides evidence that solvent extract of *Phyllanthus fraternus* contains medicinally important bioactive compounds and this justifies the use of plant species as traditional medicine for treatment of various disease.

Keywords: Morphine, borbine, berbeline, tannin.

ISCA-ISC-2012-03BS-44

In vitro Plantlet Regeneration in *Pterocarpus marsupium* Roxb. a Medicinally Important Red Data Book Entered tree and Confirmation of Genetic Fidelity using ISSR Marker

Radhika T.[1] and Christopher Reuben T.[2]
[1]Department of Biotechnology, Kakatiya University, Warangal, AP, INDIA
[2]Department of Botany, Kakatiya University, Warangal, AP, INDIA

Abstract: An efficient *in vitro* plant regeneration protocol via somatic embryogenesis was achieved using immature zygotic embryos (IZEs) of *Pterocarpus marsupium* (Roxb.), an endangered medicinally important tree. Seventy nine (79) percent of IZEs from green pods collected from 3rd collection date (Jan 4th) produced indirect somatic embryogenesis on MS medium supplemented with naphthaleneacetic acid (NAA) alone or in combination with Benzyladenine (BA) or Kinetin (Kn). Highest percentage of somatic embryogenesis (79.1%) with more number of somatic embryos (33.4±0.85) per explant regenerated on MS medium supplemented with 2.69 ìM NAA and 4.40 ìM BA. Somatic Embryo (SE) formation and maturation decreased when sucrose concentration were higher than 3%. Sixty five percent of mature somatic embryos SEs germinated on ½ MS supplemented with 5.80 µM GA_3. Histological studies of explants at various developmental stages of somatic embryogenesis revealed that SEs passed through globular, heart, torpedo and cotyledonary stages. Somatic embryo derived plantlets were successfully transferred to pots and acclimatized in green house with 78% of survival rate. Analysis of regenerated plants using inter-simple sequence repeat marker (ISSR) confirmed that there was no genetic variability. All ISSR banding profiles from regenerated plants were monomorphic and similar to those of the mother plant. This protocol is useful to produce somatic embryos with a high frequency of induction and their subsequent conversion to whole plants. It offers potential technique to transfer medicinally important traits in this species.

ISCA-ISC-2012-03BS-45

Vermicompost to Save Our Agricultural Land

Shrivastava Sheela and Singh Khimiya
M.L.C. Govt Girls P.G. College, Khandwa, MP, INDIA

Abstract: India produces about 3500 Million tones of waste biomass annually comes from urban and industrial sources, agriculture and domestic wastes are the main sources of organic material and their use for productivity is important for both economical and environmental reasons. There are several methods have been adopted to prepare organic manure from agro-waste. Vermicomposting is one of the important method converts wastes to wealth by using earthworms. The earthworms are cosmopolitan and their contribution to soil fertility is valuable. They converting clay into rich living earth. Earthworms live mostly underground and creating complex burrow network. They eat soil and crunching in muscular stomach digesting organic material and mixed in with minerals and ejecting the rest. This dump waste on the surface called vermicasts. Earthworms used for vermicomposting improve water filtration rates and absorption helping the soil to drain better.
Keywords: Agricultueal and domestic waste, Vermicast, Vermiculture, Vermcompost, Vermitechnology, Organic manure.

ISCA-ISC-2012-03BS-46

A Studies on Downstream Processing for the Production of Pullulan by *Aureobasidium pullulans*-SB-1 from the Fermentation Broth

Bishwambhar Mishra and Suneetha V.
School of Bio Sciences and Technology, VIT University, Vellore-632014, INDIA

Abstract: Pullulan, which is made up of linear á-D-glucan maltotriose and maltotetrose repeating units interconnected by á (1→6) and á(1→4) linkages, is a water-soluble homopolysaccharide produced extracellularly by *Aureobasidium pullulans*. Although the production of this bio-polymer is commercially going on still the establishment of the cost effective downstream processing has not attained up to the mark. It is necessary to harvest cells, remove the melanin pigments co-produced during its fermentation followed by its precipitation, concentration and drying. The present work reports on some of these aspects. Centrifugation of the fermentation broth at 8,000 rpm for 20 min gave cell pellets that were discarded and a greenish black supernatant containing melanin pigment which was subjected to the heat treatment

at 80°C for 30 min in order to remove the protein (mainly Pullulanase) in the fermentation broth. The supernatant was demelanized by with hydrogen peroxide and activated charcoal, solvent-solvent blends, or by solvent-salt combinations in which hydrogen peroxide treatment shows better result for the removal of melanin pigments. For the precipitation of the exopolysachride the cold Isopropanol was used followed by its drying process at 60°C for 40 min. This methodology produced high purity pullulan that was comparable in colour and texture to the commercial samples which was characterized by the HPLC and FT-IR analysis.

Keywords: *Aureobasidium pullulans*, melanin, greenish black, demelanized, downstream processing.

ISCA-ISC-2012-03BS-47

Chemopreventive action of *Bacopa monnieri* (Brahmi) Hydromethanolic extract on DMBA- induced skin Carcinogenesis in Swiss albino Mice

Vishnoi Shiki[1] and Agarwal R.C.[2]
[1]Department of Biotechnology, Janta College, Bakewar, Etawah, UP, INDIA
[2]Jawaharlal Nehru Cancer Hospital and Research Centre, Idgah Hills, Bhopal, MP, INDIA

Abstract: *Bacopa monnieri* (L.) Wettst. (Brahmi) (Family: Scrophulariaceae), has been used in the Ayurvedic system of medicine for centuries. In the present study, Cancer Chemopreventive property of *B. monnieri* was evaluated on 7,12-dimethyl benz(a)anthracene (DMBA) induced skin papillomagenesis in male Swiss albino mice (6-7 weeks old). A single topical application of 7,12-dimethyl benz(a)anthracene (104 ìg/100 ìl of acetone), followed 2 weeks later by repeated application of croton oil (1% in 100 ìl acetone two times in a week) and continued till the end of the experiment (After 16 weeks) exhibited 100% tumor incidence. In contrast, mice topically treated on the shaven dorsal side with the *Bacopa monnieri* Hydromethanolic extract (BMH) (dose 120 mg/kg body wt.) & (dose 240mg/kg body wt.) at one hour before each application of 1% Croton oil two times in a week., a significant reduction in the values of tumor incidence, average number of tumors per tumor bearing mouse and papillomas per papilloma bearing mouse were observed. Thus results showed that BMH possesses a Chemopreventive activity and provide evidences for its traditional usage in clinical studies.

Keywords: *Bacopa monnieri,* Chemoprevention, Croton oil, DMBA, Papillomas.

ISCA-ISC-2012-03BS-48

Antioxidant Activity of Various Extracts of *Bacopa Monnieri* (Linn.)

Saxena Anamika[1] and Vishnoi Shiki[2]
[1]Department of Microbiology, Janta College, Bakewar, Etawah, INDIA
[2]Department of Biotechnology, Janta College, Bakewar, Etawah, INDIA

Abstract: The present study was carried out to evaluate the antioxidant potential of hydromethanolic, methanolic & Aqueous extract of aerial parts of *Bacopa monnieri* (L.). The whole plant extracts were evaluated for antioxidant property. The activity tested for the Gram positive (*S. aureus, B. subtilis, S. epidermidis*) & Gram negative bacteria (*E. coli, S. flexneri, P. aeruginosa*). The methanolic extract of the plant was found to have potent antioxidant property. The aqueous extract of the plant were found to have fewer activities in comparison to hydromethanolic & methanolic extracts. Aqueous extract of the different concentration showed no inhibitory effects on the tested microorganisms due to loss of some active compounds during extraction processes of the sample. Moreover, this experimental evidence suggests that because of its antibacterial activity, this Ayurvedic drug may be useful in treatment of human diseases.

Keywords: *Bacopa monnieri*, methanol extract, hydromethanolic, aqueous extract.

ISCA-ISC-2012-03BS-49

Variation in Production of Cancer Chemo Preventive Agent Curcumin in *Curcuma longa* Relation to Soils from Some Parts of North India

Srivastava Ahileshwar K.[1], Mishra Raghvendra R.[2], Tiwari M.[2], Shailendra K.[1], Kumar Vikas[1], Singh Divya[1], Roy B.K.[1*] and Shukla H.S.[2]
[1]Department of Botany (CAS), Institute of Medical Sciences, Banaras Hindu University, INDIA
[2]Department of Surgical Oncology, Institute of Medical Sciences, Banaras Hindu University, INDIA

Abstract: Curcumin is medicinally important phenolic compounds present in rhizomes of turmeric (*Curcuma longa*). In the present study, we have observed that formation of curcumin in turmeric plant depend on the physico-chemical properties of soil. Therefore, four sampling sites of Northern-India showing different level of organic and inorganic matter in soil were selected for this purpose. The standard method for analysis of physico-

chemical properties of soils and High Performing Liquid Chromatography (HPLC) and Gas Chromatography – Mass Spectroscopy (GC-MS) for detection of curcumin contents in turmeric rhizomes were used to study. The result showed that variation in curcumin amount depend on levels of soil pH, organic and inorganic (Ca, Cu, Fe, Mg, Zn, N, P, K, and C) matters. Amount of curcumin in turmeric rhizomes collected from Varanasi was highest (9.03%) followed by Darbhanga (6.40%), Mirzapur (4.47%), and Allahabad (4.43%). Highest level of organic carbon, Ca and total amount of NPK in soil of Varanasi resulted into high production of curcumin. Overall, it was concluded that production of high amount curcumin depends on presence of total amount of NPK in soil. Therefore, on the basis of finding, use of NPK as fertilisers can be recommended to the cultivators for high production of curcumin.
Keywords: Turmeric, curcumin, HPLC, GC-MS, physico-chemical properties.

ISCA-ISC-2012-03BS-50

Molecular Cloning and Expression analysis of Leaf specific 3-hydroxy-3-Methylglutaryl Coenzyme A (HMG-CoA) Reductase gene from *Centella asiatica* (Linn.)

Kalita R., Phukon M., Modi M.K. and Sen P.
Department of Agricultural Biotechnology, Assam Agricultural University, Jorhat, Assam, INDIA

Abstract: *Centella asiatica* (L.) Urb.of the Apiaceae family is an important medicinal plant in the international market of herbal medicine. The medicinal uses of *Centella asiatica* include its use as a cerebral tonic and for neurological and cardiovascular diseasess. This plant synthesizes a number of secondary metabolites (isoprenoid) through a couple of biosynthetic pathways. The first committed step in the pathway for biosynthesis of isoprenoids in *Centella asiatica* is catalysed by3-hydroxy-3-methylglutaryl coenzyme A reductase (HMGR) in the cytosol. Genes encoding HMGR have been cloned and characterized in different plant species. Till date no such reports pertaining to cloning and characterization of HMGR gene from *Centella asiatica* has been reported. So in the present study, an attempt has been made to clone and characterize HMGR gene from the elite chemo type of *Centella asiatica*. Several Bioinformatics tools have been used to delineate the primer pairs to flank the gene of interest. A full-length cDNA encoding HMGR was isolated from *Centella asiatica* by rapid amplification of cDNA ends (RACE). Sequence comparison analysis showed that *Centella* HMGR had highest homology to HMGR from *Panax quinquefolius. As expected, phylogenetic tree analysis indicated that Centella HMGR belonged to plant HMGRgroup*. Tissue expression pattern analysis is in progress which shall pave a way to understand the regulation of isoprenoid pathways of HMGR.
Keywords: *Centella asiatica*, HMG Co-A reductase, triterpenoids, RACE

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Advanced Fuzzy Modelling, Algorithm and Artificial Intelligence for Bio-System

Singh Abhayneet, Vaish Ankit, Kumar Prakash, Gulsan and Singh Nijendra Pratap
Department of Biotechnology, Anand Engineering College, Keetham, Agra-282007, Uttar Pradesh, INDIA

Abstract: The role of the resources and information signals of interrelated phenomenon in biological systems is described by the term "integrated bio-systems". The living system, which can be linked with the applications are in biomedicine, biotechnology and ecology. It is very difficult to describe microbial processes which are operated under realistic conditions by the mechanistic models that limit their optimizations and control. It is easily understood by the responses of the living cells that they posses innate intelligence these responses have been modelled by cybernetic approach. As whole cells may be described and control by using artificial intelligence methods. So from the studies it seems to be very logical to integrated cybernetic models with artificial intelligence based strategy that will be more precise then the current approaches. Implementation of adaptive neuro-fuzzy inference systems in band fuzzy networks as well as advanced fuzzy modelling methods for designing an inferential composition model. These approaches were applied for hard to biochemical and microbial growth parameters determination in both integrated bio-systems. High-performance, robust, cost-effective and reliable computing models that provide innovative solutions to fermentation problems have been developed. To the development of computer based gradually development methods using evolutionary algorithms to generate optimal or near optimal solutions to the problems in the fermentation industries. Here we discuss the possibility of combine with practical considerations revealing a hybrid approach that includes some mathematical modelling like the latest developments of evolutionary algorithm techniques are focused and optimization of fermentation processes.
Keywords: Advanced fuzzy modelling, Cellular intelligence, Artificial intelligence, Cybernetic model, Hybrid model, Integrated bio-systems, fuzzy networks, mathematical modelling, Biochemical.

ISCA-ISC-2012-03BS-52

Titel-Purification, Characterization, Modern Application and Future Prospect of Bacterial Proteases

Syed Saima, Misra Pallavi, Azmi Mriyam, Khan Asma, Singh Nijendra pratap* and Kumar Prakash
Department of Biotechnology, Anand Engineering College, Keetham, Agra-282007, Uttar Pradesh, INDIA

Abstract: Protease is a very useful enzyme used in treatment of inflammation, blood clots in ischemic stroke, wound debridement and, as an auxiliary to antibiotic therapy. Bacterial alkaline proteases have immense potential in industrial applications as additives in detergent formulations, silver recovery, pharmaceutical, food processing, feeds and chemical industries as well as waste management. Currently, available enzyme preparations under different trade names are primarily imported and country has to spend huge amount of foreign currency. In leather these enzymes do not completely eliminate the use of both lime and sulfide in dehairing process also sofar, Urokinase, streptokinase, Nattokinase and some genetically engineered proteases are therapeutically used. Although, clinically approved thrombolytic therapies have markedly reduced mortality, all these drugs encompass significant drawbacks including the need of large therapeutic doses, limited fibrin-specificity and significant associated bleeding tendency and reclusion. Adjuvant drugs, which are generally given along with these thrombolytic treatments, have their own side effects. Half or more of the patients fail to achieve early and complete reperfusion with the current regimens. This review depicts a lucid picture on the purification, characterization and future prospect of commercial and therapeutic utilization of protease enzyme in all aspect.
Keywords: Bacterial Protease, Purification, Characterization, Application, Thrombolytic therapies.

ISCA-ISC-2012-03BS-53

Factors Influencing the Interaction of three Fungi and Mycotoxin Production

Surekha M., Kiran S., Naresh A. and Reddy S.M.
Toxicology Laboratory, Department of Botany, Kakatiya University, Warangal-506 009, AP, INDIA

Abstract: The interaction of *Penicillium griseofulvum P. crustosum* and *Aspergillus terreus* in relation mycotoxins production was studied production of penitrem A, CPA, patulin and terreic acid by above fungi varied with the environmental conditions. In general glucose, sucrose and potassium nitrate were favoured carbon and nitrogen sources. The biomass production also varied with environmental factors.

ISCA-ISC-2012-03BS-54

Effects of Heavy Metal Stress on Callus Induction and Regeneration of Finger Millet (*Eleusine coracana*) (L.) Gaertn

Suman Krishania and Kalpana Agarwal
Department of Life Sciences,The IIS University, SFS Mansarovar, Jaipur -20, Rajasthan, INDIA

Abstract: Today Abiotic stress is a major global problem limiting crop productivity. Stress factors like heavy metals, salinity and high temperature are a serious problem limiting the yield potential of modern cultivars, specially the cereals. This is posing a serious problem and needs to be evaluated. Such studies if done in field conditions would be time taking and cumbersome and therefore the present study was conducted under *in vitro* conditions taking *Eleusine coracana* (L.) Gaertn variety PR202 as the model plant. To limit the study, effects of only cadmium would be evaluated. Seeds taken as explant were inoculated on callus induction medium with varied Mercury levels (50 µM 100 µM, 300 µM and 500 µM). For callus induction, Mercury was found to be only upto 50 µM concentrations. Induced Callus were sub cultured on maintenance media and then on regeneration medium (MS + 1mg/l NAA) supplemented with same toxic level of the heavy metal. Mercury above 50 µM concentration was found to be completely inhibitory for callus induction as well as for plantlet regeneration.
Keywords-Heavy metal, MS media, Mercury, *in vitro*

ISCA-ISC-2012-03BS-55

Thermostable Lipases and their Potential

Meena Khem Raj, Singh Sukhdev and Kanwar Shamsher Singh
Department of Biotechnology, Himachal Pradesh University, Shimla-171005, INDIA

Abstract: Thermozymes are gaining wide industrial and biotechnological interest due to the fact that they are better suited for harsh industrial processes. Microbial thermostable lipases are of considerable commercial interest for biotechnological applications as they can be produced at low cost. Among the large number of lipases described in the literature, only the

enzymes belonging to a narrow range of species have been shown to have adequate stability and biosynthetic capabilities to allow routine use in organic reactions. Moreover, currently known microbial lipases do not always have the desired combination of thermostability and stability in both hydrophobic and hydrophilic organic solvents. In this context, a molecular approach through expression of foreign protein in prokaryotic systems has become a good alternative to economically obtain bulk production of lipase. So far, several lipases have been purified and characterized from moderate thermophilic isolates, mainly representatives of the genus Bacillus, such as the lipases from *Bacillus thermoleovorans ID-1*, *Bacillus thermocatenulatus*, *Bacillus stearothermophilus*, *Bacillus sp. J33* or the lipase from *Bacillus strain A30-1*. Several *Pseudomonas* and *Lactobacillus* species have also been reported to produce moderate thermo active lipases. Little, however, is known on the lipolytic enzyme systems of extreme thermophiles, especially from strictly anaerobic bacteria. Their enzymes are expected to be a powerful tool in industrial biotransformation processes. Furthermore, enzymes from thermophilic bacteria have been found to be generally more resistant to denaturation than their mesophilic counterparts. So, there is still need to isolate and clone better candidate gene suitable for harsh industrial processes.

Keywords: Thermozymes, biotransformation, biosurfactants.

ISCA-ISC-2012-03BS-56

Medicinal Plants Used for Gastrointestinal Disorders in some Districts of Izmir Province, Turkey

Dogan Y.[1] and Ugulu I.[2]
[1]Biology Department, Buca Faculty of Education, Dokuz Eylul University, 35150, Buca-Izmir, TURKEY
[2]Department of Biology, Necatibey Faculty of Education, Balikesir University, 10100 Balikesir, TURKEY

Abstract: This study was carried out in order to determine which plants and the ways in which these plants are used for the treatment of gastrointestinal disorders among the people of some districts of Izmir province, located in the Aegean Region of Turkey. Field study was carried out over a period of approximately three years (2007-2009). During the field trips, the information was collected through interviews, including various data obtained from local healers and traditional medicine men, herbalists, shepherds, patients and elderly persons. In addition, informant consensus factor (F_{ic}) values was calculated for the medicinal plants included in the study. A total of 33 plants belonging to 25 families were documented for their therapeutic use against gastrointestinal disorders. Further analysis on the families indicated that family Lamiaceae was represented by the highest number of species (5 species). Rosaceae was represented by three species. These were followed by Anacardiaceae, Asteraceae and Fabaceae, each represented by two species. The rest were represented by one species each (19 families). It was determined that gastrointestinal system ailments for which the folk medicinal plants are mostly used, are as follows: constipation, diarrhea, gastritis and ulcer, intestinal winds, nausea, gastralgia and indigestion. Informant consensus of medicinal plant usage within Izmir resulted in informant consensus factor (F_{ic}) values between 0.56 and 0.84 per gastrointestinal disorder category. Our study showed that plants are actively used for the treatment of gastrointestinal disorders in the area of Izmir.

Keywords: Medicinal plants; Ethnobotany; Gastrointestinal disorders; Izmir.

ISCA-ISC-2012-03BS-57

Morphological and Anatomical Studies of *Arceuthobium oxycedri* from Serpentine Localities in Bulgaria

Nedelcheva A.*[1], Pavlova D.[1], Karadjova I.[2], Krasteva I.[3] and Nikolov S.[3]
[1]Department of Botany, Faculty of Biology, Sofia University, St. Kl. Ohridski, 1164 Sofia, BULGARIA
[2]Department of Analytical Chemistry, Faculty of Chemistry and Pharmacy, Sofia University, St. Kl. Ohridski, Sofia, BULGARIA
[3]Departament of Pharmacognosy, Faculty of Pharmacy, Medical University, Sofia, BULGARIA

Abstract: *Arceuthobium oxycedri* (DC.) M.Bieb. (dwarf mistletoe) is a rare semi-parasitic plant that lives on the branches of *Juniperus oxycedrus* as the host plant include in the juniper forestry on the ultramafic rock areas. In the current study comparative morphology characteristics on plants from different serpentine localities in the Eastern Rhodope Mts. (Southeastern Bulgaria) and non serpentine ones was investigated, supported by data about trace elements contents in dry aerial parts (Ni, Cr, Ca, Mg). Most variable are wide of stem (0.7- 4,2 mm), leave size (0.8-5.4mm), density of terminal brunches with male or female flowers and the structure of secondary protective covering. The data suggest that the cuticulate epithelium in stem is efficient in the control of water loss and more developed in serpentine samples (up to 10% more tick) as defense reaction to edaphic stress condition derived from ultramafic rocks. According to preliminary observations about 20% by the juniper shrubs in the study area are infected. Dwarf mistletoe is not prescribed as medicinal plant in Bulgarian folk medicine but can to be assign as perspective species not cotemporary used, but with scientific and practical data for their importance. The study is contribution to the pharmacognostical profile of dwarf mistletoe.

Keywords: Dwarf mistletoe, micromorphology, trace elements, ultramafic rocks.

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Population Dynamics of Mosquito Larvae in Permanent Standing Water Bodies of District Ludhiana, Punjab, India

Dipti and Kocher D.K.
Department of Zoology, Punjab Agricultural University, Ludhiana-141004, INDIA

Abstract: Mosquitoes transmit certain human diseases which cause economic losses in cattle and other live stock. Survey of mosquito larvae carried out in standing water bodies from four different village ponds (Noorwala, Kasabad, Kaneja and Sujatwala) of Ludhiana district (Punjab) from July 2011 to June 2012 indicated the presence of three different genus viz, *Culex*, *Aedes* and *Anopheles*. In all these water bodies *Culex* was most abundant group followed by *Aedes* and then *Anopheles*. *Culex* was found throughout the study period except winter (Nov-Feb). Larval density (LD/L) of *Culex* reached its maximum in rainy season i.e in July-August it was 76.6±5.2, 100.0±28.1, 64.6±8.0 and 45.9±9.9 at Noorwala, Kasabad, Kaneja and Sujatwala village pond respectively. Seasonal abundance revealed a significant difference in the population of mosquito larvae collected during the wet season as compared to dry season. Also, comparative data in terms of larval density index (LDI) indicated the prevalence of *Culex* over other two genera. It ranged from 56.6%-87.6% at various sites under study. Least number of *Anopheles* in these water bodies showed that they do not prefer to oviposit in large and permanent standing water, whereas the abundance of *Culex* indicated the versatile nature of this group which can thrive in any kind of habitat.
Keywords: Mosquitoes, Culex, Larval density index, standing water bodies.

ISCA-ISC-2012-03BS-59

Wood Decaying Fungi from North Maharashtra, India

Borse K.N.
PG Department of Botany, S.S.V.P.S's L.K. Dr. P.R.Ghogray Science College, Dhule, MS, INDIA

Abstract: The present study deals with ten macrofungi observed in the forest of North Maharashtra. The macrofungi belonging to Basidiomycotina were observed on trees or on timbers causing wood decay. These are species of *Daedalea*, *Ganoderma*, *Hexagonia*, *Hymenochaetae*, *Lenzites*, *Poria* and *Schizophyllum*.
Keywords: Wood decay, Macrofungi, North Maharashtra.

ISCA-ISC-2012-03BS-60

Computational Identification and Phylogeny Analysis of Micro RNAs for Various Stress Genes of *Arabidopsis thaliana*

Sahu Jagajjit, Borthakur Ananya, Barooah Madhumita, Modi Mahendra Kumar and Sen Priyabrata*
Department of Agricultural Biotechnology, Assam Agricultural University, Jorhat, Assam-785013, INDIA

Abstract: MicroRNAs act as a restraint regular RNA, giving cells a way of turning down the gene expression and play a vital role in a number of biological processes including development, signal transduction and environmental stresses. MiRNAs have been increasingly acknowledged in various plants due to many environmental stress conditions demanding immediate attention. However, a few stress specific miRNAs have been identified in *Arabidopsis thaliana* to date. Comparative genomics has emerged as an efficient approach for new microRNA discovery because of high conservative nature of miRNAs among various organisms. In this study, unique mature miRNAs were identified from a total of available 540314 Genomic Survey Sequences (GSSs) and 1529700 Expressed Sequence Tags (ESTs) of *Arabidopsis thaliana*. Targets for previously known and newly identified potential miRNAs were searched against 32 important stress-related genes in *Arabidopsis thaliana*. The secondary structures for the precursor miRNAs (pre-miRNA) were analyzed for all the newly identified stress specific miRNAs. The pre-miRNAs satisfying all the criteria were collected and a phylogenetic analysis was carried out using MEGA5 for new and previously available pre-miRNAs targeting the stress related genes in *Arabidopsis thaliana.* This work represents a systematic effort to enhance our understanding of miRNA-mediated stress responses in *Arabidopsis thaliana* and the findings will accelerate the way for further researches of stress specific miRNAs.
Keywords: MicroRNA, Bioinformatics, *in silico* approach, *Arabidopsis thaliana*, stress.

ISCA-ISC-2012-03BS-61

Streptomycetes: A Storehouse of Bioactive Compounds and Enzymes

Bhasin Sheetal[1] and Modi H.A.[2]
[1]Department of Biosciences, Maharaja Ranjit Singh College of Professional Sciences, Indore, MP, INDIA
[2]Department of Life Sciences, University School of Sciences, Gujarat University, Ahmedabad, Gujarat, INDIA

Abstract: Streptomycetes, the filamentous eukaryotic microbes, possessing exceptionally large size genome, carrying around 8-Mb long DNA sequence, are of immense commercial importance. They exhibit extensive primary as well as secondary metabolic activity which accounts for their indispensible role in commercial and environmental scenario. They are exhaustively investigated for the production of bioactive compounds and enzymes. We have explored the capacity of Streptomycetes to produce antibacterials, antifungals, pigments, amylase, cellulase, protease, lipase, keratinase and glucose isomerase. Variety of different strains of Actinomycetes were isolated from soil samples collected from different locations of western Madhya Pradesh. The isolates were categorised on the basis of cultural and morphological characters according to Bergey's Manual. The isolates were qualitatively examined for various enzymes and bioactive compounds production by plate assay method. The promising one's were picked up for secondary screening by submerged fermentation process and production parameters were standardised. High Fructose Corn Syrup (HFCS), used as sweetening agent in pharmaceutical and food industry, contains high concentration of fructose as it has more sweetening index than glucose and sucrose. It was produced by utilising the amylase and glucose isomerase produced by our isolates. Amylase and cellulase was produced by most of the cultures isolated but KC3, KC4, V6, Ab, AII2, AII3 produced high amounts of amylase and V1, Ga1, KC7 and KNII3 yielded highest cellulase titres. Corn Starch was saccharified by amylase producing isolate Ab and the glucose released was isomerised by glucose isomerase produced by *Streptomyces sp. SB-P1*.Our isolates also produced keratinase, an extensive tool against recalcitrant poultry waste. The isolates not only exhibited feather degradation but hair degradation as well. The potent producers were AMR and $SIII_2$. The antibacterials produced by isolates could inhibit various Gram positive and Gram negative bacteria. Many of strains of Streptomycetes named NPI_2, GU_4, VJ_1 could also inhibit multidrug resistant bacteria isolated from infected patient's samples. Antifungal agents produced by a variety of Streptomycetes could strongly restrict fungal growth. Our collection of Streptomycetes was found to produce a variety of melanoid pigments ranging from yellow, mustard, orange, pink, red, brown and olive green. The isolates V1, V4, KNI1, KNII3 produced intense water soluble pigment. These pigments are in great demand due to their biological origin and non-carcinogenic nature as compared to chemical pigments. The pigment was produced by submerged fermentation process and cotton method. The extracted pigment was found to exhibit strong antibacterial activity.

Keywords: Streptomycetes, HFCS, enzymes, bioactive compounds, pigments.

ISCA-ISC-2012-03BS-62

Optimization of Reaction Conditions for Solvent Tolerant Thermophilic Bacterial Lipase Production

Sharma Shivika and Kanwar Shamsher Singh
Department of Biotechnology, Himachal Pradesh University, Shimla 171005, INDIA

Abstract: Lipases (triacylglycerol acylhydrolases, EC 3.1.1.3) catalyze the hydrolysis and the synthesis of esters formed from glycerol and long chain fatty acids. This enables lipase to carry out a variety of different catalytic reactions like hydrolysis, esterification, transesterification, alcoholysis, acidolysis and aminolysis. Lipases (triacylglycerol hydrolases) are an important group of enzymes having biotechnological significance and they have numerous applications in the food, dairy, detergent, and pharmaceutical industries. The esterification reactions using lipase(s) could be performed in water restricted organic media as organic solvent not only improves the solubility of substrate and reactant in reaction mixture on one hand but also permits the reaction in the reverse direction, and often it is easy to recover product in organic phase in equilibrium two-phase systems. The lipase activity was found to be maximum when assayed at a temperature of 55°C (0.92 IU/ml), pH 9.5 (0.94 IU/ml) at regular interval of 15 min (0.96 IU/ml). Lipase activity was highest with *p*-NPP used as a chromogenic substrate (0.98 IU/ml). All selected salt ions [10 mM] *viz.* $MnSO_4$ $FeCl_3$, $MgCl_2$, $ZnSO_4.7H_20$, $MgS0_4.7H_2O$, $CuSO_4.5H_2O$, $FeSO_4$, $CoCl_3$ and $HgCl_2$ tested in the present study had inhibitory effect(s) on lipase activity. Amongst various organic solvents added to the production medium, hexane was able to induce more lipase (0.99 IU/ml) than the solvents like DMSO, xylene, toluene, heptanes, octane and nonane at a concentration of 2%.

Keywords: Thermophillic lipase, tributyrin, reaction conditions.

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Isolation and Optimization of Physiochemical Conditions for a Novel Thermophilic Lipase from a Bacterial Isolate STL-A-51

Sharma Abhishek, Kumar Ashok and Singh Kanwar Shamsher*
Department of Biotechnology, Himachal Pradesh University, Shimla-171005, INDIA

Abstract: Lipases are triacylglycerol acylhydrolases (EC 3.1.1.3) that basically catalyze the hydrolysis of triacylglycerol to free fatty acids, diacylglycerols, monoacylglycerol and glycerol. In the present study a thermophilic lipase producing bacterial isolate was obtained after vigorous screening from the mud soil of hot water spring. Lipase producing ability of 15 bacterial isolates was examined qualitatively on trybutyrin agar plate out of which 10 isolates showing maximum zone of hydrolysis had been selected for further study. The selected strain was found to be Gram-negative, rod shaped, non-sporulating, catalase positive and forming round creamish white colonies with wavy margins. The physico-chemical parameters were studied to improve the production of lipase in the broth. A 26 h old seed culture (4% v/v) was inoculated into 50 ml mineral based broth containing (g/l) $NaNO_3$ 3; K_2HPO_4 0.1; KCl 0.5; $MgSO_4.7H_2O$ 0.5; $FeSO_4{\cdot}_7H_2O$ 0.01 and yeast extract (4%, w/v), pH 8. The broth/ medium autoclaved at 1.1 bars for 18 min at 121ºC. The isolated strain was thermophilic and also prominent growth was observed at 65ºC. Total lipase activity of 38.5 U/ml was recorded for the hydrolysis of 0.05 M *p*-nitrophenylpalmitate (pH 8) at 55ºC after 36 h production under shaking at 150 rpm. Effect of various ions in the form of chloride salts ($MgCl_2$, $CoCl_2$, KCl, NaCl and $FeCl_3$) had been analyzed and $FeCl_3$ was found to show maximum activity of 30.50 U/ml. The crude lipase was found to be stable at 55ºC for 54 h and a 50% loss in the activity was observed after 25 h incubation at 55ºC.
Keywords: Gram-negative, thermophilic, tributyrin, lipase, reaction conditions.

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Purification of Extracellular Peroxidase from a Bacterial Isolates BTS-P5

Bansal Neelam and Shamsher S. Kanwar
Department of Biotechnology, Himachal Pradesh University, Shimla-171 005, INDIA

Abstract: Peroxidases (EC 1.11.1.7), are a huge family of heme containing enzymes that catalyse oxidation and reduction of large families of substrates. Peroxidases are oxido-reductases produce by number of microorganism, plants and animals. Peroxidases catalyze a variety of reactions in the presence of peroxides such as hydrogen peroxide. Reduction of peroxidases at the expense of electron donating substrates makes peroxidases useful in a number of biotechnological applications. Peroxidases have potential for bioremediation of wastewater, for bio-pulping and decolourization of textile azo dyes. It's also used in practical analytical applications in diagnostic kits, and it is most common enzyme used for labeling an antibody in ELISA. A gram negative bacterial isolate (BTS-P5) with maximum activity (0.32 U/ml) was selected for further work. The crude enzyme exhibited maximum activity at 37ºC (0.46 U/ml) and at pH 7.5 (0.43 U/ml) under shaking (120 rpm). The enzyme was allowed to precipitate at different % saturation levels 0-30%, 30-60% and 60-90% respectively. At 50-60% saturation of ammonium sulphate, maximum specific activity (6.09 U/mg) was obtained. The enzyme was purified by ion-exchange chromatography on DEAE-Cellulose Column. The specific activity of pooled fractions was calculated to be 2.91 U/mg proteins which resulted in 14.5 fold purification with yield 7%.
Keywords: *Peroxidase, optimization, bacterial isolate BTS-P5, oxidoreductases.*

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Comparitive study of antibacterial acitivity of *Adiantum capillus–veneris and Adiantum venustum*

Rini Jarial and Shamsher Singh Kanwar
Department of Biotechnology, Himachal Pradesh University, Shimla-171 005, INDIA

Abstract: Using pharmaceutical plants and plant extracts have been at great attention. *Adiantum* Linn. of Adiantaceae family is one of the most common and widely distributed species. *Adiantum* is a genus of ca.198 species in the family Adiantaceae, distributed extensively across the world from cool temperate zones to hot tropical regions. Ethnomedicinally the genus is important and popularly known as "Hansraj" in Ayurvedic System of Medicine. It has been used in cold, tumors of spleen, liver and other viscera, skin diseases, bronchitis and inflammatory diseases. It is also considered as tonic and diuretic. In this research, the antibacterial activity of n-heptane and aqueous extracts of two species of *Adiantum (Adiantum capillus–veneris* and *Adiantum venustum)* were tested against 12 bacteria strains including *Staphylococcus epidermidis, Salmonella typhimurium, Salmonella paratyphi, Enterobacter, Proteus species, Escherichia coli, Klebsiella*

Pneumonia, Pseudomonas aeruginosa,, Salmonella typhi, Shigella flexeneri, Staphylococcus citreus including multiresistant bacteria *Staphylococcus aureus)* the maximum activity was exhibited by the organic extract of *Adiantum venustum* followed by *Adiantum capillus–veneris*. The organic extract of *Adiantum capillus–veneris* had very small inhibition zone (0.5 mm) against *Escherichia coli* whereas, *Adiantum venustum* extract against *Shigella flexneri* with MIZ (0.4 mm). Total phenolic constituents of *Adiantum* species viz. *Adiantum venustum* and *Adiantum capillus–veneris*, were 0.79% (w/w), 0.81% (w/w).

Keywords: Adiantum species, Adiantaceae, Phytochemical constituents, Pharmacological activities.

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Anti-Inflammatory Activities of Grapes (*Vitis vinifera.* L) Seed and Skin Gold Nanoparticles

Grace Nirmala J. and Narendhirakannan R.T.
Dept. of Biotechnology, School of Biotechnology and Health Sciences Karunya University, Coimbatore, TN, INDIA

Abstract: Gold compounds have received great attention as an anti-inflammatory agents through their ability to inhibit expression of NF-kappa B and subsequent inflammatory reactions. Gold nanoparticles (AuNPs), an emerging nanomedicine is renowned for its promising therapeutic possibilities. The antioxidative effect of traditional gold in treatment of diseases, have affirmed the urge for the need of study over restorative effect of gold nanoparticles at conditions of oxidative stress which has not been revealed yet. Inflammation is a defense mechanism that helps body to protect itself against infection, burn, toxic chemicals, allergens or other noxious stimuli. The side effects of the currently available anti-inflammatory drugs pose a major problem during their clinical uses. Therefore, the development of newer and more potent anti-inflammatory drugs with lesser side effects is necessary. In this milieu, the present study was planned to investigate the anti-inflammatory effect of Gold nanoparticles synthesised using *Vitis vinifera* seed and skin. Grapes (*Vitis vinifera* L.) have large amounts of phenolic compounds in the seeds and skins which act as antioxidants. Inflammation was induced by phlogistic agents like carageenan, xylene, egg albumin and formalin. The Transmission Electron Microscope analysis image showed that the gold nanoparticles size ranged from 28 to 40 nm for grape seed and 31 to 58 nm for grape skin The grape seed and gold nanoparticles had potent anti-inflammatory activity than grape skin gold nanoparticles and showed better percentage of inhibition for inflammation. Thus the activity was owed to the presence of polyphenols in the *Vitis vinifera* seed and skin extracts having anti-inflammatory activity.

Keywords: Anti-inflammatory, *Vitis vinifera.*L, Carrageenan, Xylene, Formalin, Gold nanoparticles.

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Effect of Marigold (*Tagetes erecta*) Oil against Housefly (*Musca domestica*)

Kumar Pushpendar, Chauhan Nitin and Malik Anushree
Applied Microbiology Lab, Centre for Rural Development and Technology, Indian Institute of Technology, Delhi, INDIA

Abstract: The essential oil of Marigold (*Tagetes erecta*) was evaluated for insecticidal activity against the housefly, *Musca domestica* L. (Diptera: Muscidae). The tests were performed at various marigold oil concentrations (3.15, 4.72 & 7.86µl/cm^2) against different stages of housefly under laboratory conditions (Temp. 28 °C, 70% Relative humidity). In the larvicidal assays 38- 90% mortality was obtained after 4 days of exposure. The pupicidal assay revealed that pupa emergence (after 5 days) was suppressed by 17-53% as the concentration of marigold oil was increased from 3.15-7.86 µl/cm^2. Contact toxicity assays on adult house fly showed 40-100% mortality after 24 hours of exposure. Apart from the adulticidal nature of the marigold oil, repellency was also evaluated, where 65- 92 % repellency was observed within 6 hours of monitoring. However, the repellency and mortality of housefly without any exposure were less than 17 %. On the basis of these assays, it was concluded that marigold oil has a substantial insecticidal activity for housefly control at different stages of their life cycle. Hence, to establish proper utility of marigold oil for housefly control, suitable formulation should be developed.

Keywords: Marigold oil, essential oil, insecticidal, house fly, larvicidal, pupicidal, adulticidal.

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Efficacy of *Jatropha curcus* Leaf Extract against Housefly, *Musca domestica*

Chauhan Nitin, Mishra Sapna, kumar Peeyush, Sharad Verma, Anushree Malik and Satyawati Sharma
Applied Microbiology Lab, Centre for Rural Development and Technology, Indian Institute of Technology, Delhi-110 016, INDIA

Abstract: Hexane and ether extracts of *Jatropha curcus* leaves were tested against different stages of housefly in laboratory conditions (Temp. 28°C, 70% Relative humidity). Extracts were prepared by soxhlet extraction method. Various

concentrations of hexane extract of *Jatropha curcus* i.e 0.04g/ml, 0.19g/ml and 0.39g/ml were used for different bioassay experiments. The larvicidal activity was observed to vary from 55–90% (0.04g/ml - 0.39g/ml) after 48 hours. In pupicidal assay, 10–40% mortality of housefly pupae was achieved in 5 days while in adulticidal assay, 40-80% mortality of adult housefly was observed after 48 hours. In case of ether extract, 0.035g/ml, 0.17g/ml and 0.35g/ml concentrations were tested. The larvicidal activity in this case varied from 40–60% after 48 hours, pupicidal activity varied from 0–50% in 5 days while adulticidal activity at 48 hours varied from 50-90%. Control experiments showed not more than 20% mortality in all the bioassays. *Jatropha curcus* leaf showed promising results in both ether and hexane extracts for controlling various stages of housefly and have the potential to be formulated into suitable product for housefly control.
Keywords: *Jatropha curcus,* soxhlet, larvicidal, pupicidal, adulticidal, extracts.

ISCA-ISC-2012-03BS-69

In vitro Studies of Antibacterial and Antioxidant Properties in Roots, Seeds and Leaves of *Sesamum indicum* L.

Sharma Sandhya[1], Gupta Priti[1] and Sharma Anubhuti[2]
[1]Department of Bioscience & Biotechnology, Banasthali University, Banasthali 304022, INDIA
[2]Department of Biochemistry,Vivekananda Parvatiya Krishi Anusandhan Sansthan (ICAR), Almora, INDIA

Abstract: It is important to exemplify different types of medicinal plants for their antioxidant and antimicrobial potential as it is reported that diverse nutrient and non nutrient molecules which are produced from aromatic and medicinal plants display antioxidant and antimicrobial properties and can protect human body against cellular oxidation reaction and pathogens. Methanol and aqueous extracts of different parts (seeds, roots and leaves) of *Sesamum indicum* L. were screened to detect in vitro antioxidant (DPPH and TBA) and antimicrobial ((Disc diffusion and deep well diffusion) activity. On the basis of the results, different parts of *Sesamum indicum* L. showed higher antimicrobial and antioxidant activity in methanol extract instead of aqueous extracts. It was observed that *Sesamum indicum* L. has a powerful antioxidant and antimicrobial activity. and can be used as accessible source of natural antioxidants and antimicrobial agent in pharmaceutical industry and as a possible food supplement.
Keywords: *Sesamum indicum* L., DPPH and TBA

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In-vitro and *In-vivo* Assessment of Effective Lipidic Nanoparticles for Dermal Delivery of Fluconazole against Cutaneous Candidiasis

Madhu Gupta and Vyas S.P.
Department of Pharmaceutical Sciences, Dr. H.S. Gour University Sagar, MP, INDIA

Abstract: The nanoparticulate carrier systems as solid lipid nanoparticles (SLNs) and nanostructured lipid carriers (NLCs) have gained interest for the topical treatment of skin associated fungal infection as they facilitate the skin penetration of loaded drugs. Therefore in this study, SLNs and NLCs loaded fluconazole (FLZ) were prepared by solvent diffusion method in an aqueous system and characterized for different parameters. In addition, antifungal activity was carried out on experimentally induced cutaneous candidiasis in immunosuppressed albino rats. The results showed that SLNs and NLCs represented respective mean particle sizes of approx.178 and 134 nm with encapsulation efficiency of 75.7±4.94% and 81.4±3.89% respectively. The skin-retention studies of FLZ from *in vitro* and *in vivo* experiments revealed significantly higher accumulation of drug in the case of NLCs formulation. The *in vivo* cumulative amount of FLZ retention from NLCs was more than 5-fold that of the plain solution, while it was 3.3-fold more in the case of an equivalent-dose application in the form of SLNs at 12 hr after administration. The antifungal study also confirmed the maximum therapeutic efficacy of NLCs, as the lowest number of cfu/ml was recorded. It can be concluded from this study that NLCs provide a good skin targeting effect and may be a promising carrier for topical delivery of FLZ offering the sustained release and maintain the localized effect, resulting in an effective treatment of a life-threatening cutaneous fungal infection.
Keywords: Nanoparticulate carrier systems; Fluconazole; Topical delivery; Sustained release; Localized effect.

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Study of Antimicrobial effect of Copper on Pathogenic Bacteria responsible for Nosocomial Infections Isolated from Hospitals Environment

Adke M.B. and Sidhu A.K.
Dept. of Biotechnolgy, K.T.H.M. College, Gangapur Road, Nashik, 422002, MS, INDIA

Abstract: Nosocomial infections are those which are acquired from hospitals. They occur in 5-10% of hospital admissions. They are on the rise now a days and the organisms involved are mostly resistant to antimicrobial agents that are usually

used for treatment of various infections. The present investigation was done to monitor various hospitals for prevalence of pathogenic micro organisms and samples were collected from patient's special rooms, general wards , corridors , hospital beds, side tables, intravenous stands etc. The micro organisms were isolated and characterized by morphological and biochemical characters and the isolates were *Escherichia coli, Pseudomonas aeruginosa , Staphylococcus aureus , Enterococci* spp. Most of the nosocomial pathogens are either naturally resistant to clinically used antimicrobial agents or have the ability to acquire resistance. Therefore their antibiotic sensitivity was done on Mueller Hinton Agar and it was found that *Staphylococcus aureus* and *Enterococci* were found to be resistant to the antimicrobials used while *Escherichia coli and Pseudomonas aeruginosa were sensitive to* the antimicrobials used. To study the effect of copper on these pathogens , the Kirby Bauer method was used and the inhibition zones were measured. In this study *Pseudomonas aeruginosa* was found to be more sensitive to copper as compared to other bacteria used. To evaluate the effect of Copper, contact killing time was also studied by taking Bacterial counts after 4 ,8,12 and 16 hours respectively at 25°C.
Keywords: Hospital, pathogens , Gram positive , Gram negative, resistance , Antimicrobial activity, Copper.

ISCA-ISC-2012-03BS-72

Development of Hybrid Seed of Silkworm Bombyx *mori (L.)* Suitable for Malwa Region of Madhya Pradesh, India

Joshi Sunder Lal[1] and Sisodiya Manoj Kumar[2]
[1]S.S. in Zoology, Vikram University, Ujjain MP, INDIA
[2]Govt. College, Barnagar, Ujjain, MP, INDIA

Abstract: In the present investigation pure pedigree of multivoltine race like HM and bivoltine race like NB_{18} were maintained for ten numbers of generations under suitable conditions of temperature and humidity to improve the racial characters to develop a hybrid seed of multivoltine nature, suitable to the farmers of Malwa region of Madhya Pradesh (India). Cocoons of good shape, size and weight were selected in every crop to use them as the seed for the next generation In case of hybrid HM x NB_{18} a significance improvement in average fecundity (from 450 – 537), in weight of ten matured larvae (from 35 gms. – 43 games.), effective rate of rearing (from 57.8% to 80%) and percentage of good cocoons in each crop from (46.3% to 64.5%) had been reported. Average cocoon weights were also improved to a maximum of 1.9363 gms. From 1.3701 gms respectively. The shell percentage was improved and reached up to 27.3% from 22.1%. Thus the present investigation indicated the supremacy of developed hybrid HM x NB_{18} over its parents.
Keywords: Multivoltine, bivoltine, fecundity, ERR, cocoon and shell.

ISCA-ISC-2012-03BS-73

Beneficiary Effect of Arbuscular Mycorrhiza to *Trigonella Foenum-Graceum* in Contaminated Soil By Heavy Metal

Kelkar Tushar S. and Bhalerao Satish A.
Environmental Sciences Research Laboratory, Department of Botany, Wilson College, Mumbai–400 007, INDIA

Abstract: Because of industrialization and urbanization, there is no much land is available for urban farming in and around Mumbai. Wherever the small lands are available as open space, unused lands, barren lands etc are contaminated by heavy metals which come through industrial waste disposal. Such lands can be mycoremediated by use of mycorrhizal fungi to a certain extent and can be utilized for urban farming of leafy vegetables. Present investigation was carried out in the form of pot experiment to check the response of *Glomus mosseae* to *Trigonell foenum-graceum* which was grown in soil contaminated with heavy metal Arsenic. During these experiments, soils with different concentrations of arsenic with and without mycorrhizal inoculums were tested in *Trigonella foenum – graceum*. The response of mycorrhiza in *T. Foenum-graceum* was determined in terms of percentage germination of seeds, sustainability of seedlings, fresh weight and dry weight of plants etc. It was observed that in the pot with soil contaminated with arsenic and no mycorrhizal inoculum, performance was very bad in terms of all aspects of growth, whereas in the pot where mycorrhizal inoculum was added along with contaminated soil, the performance of the plant was better. The pot showing no contaminated soil with arsenic but the inoculum of mycorrhiza was showing best results in terms of percentage germination of seeds, sustainability of seedlings, fresh weight and dry weight of plants.
Keywords: Arbuscular mycorrhiza, *Glomus mosseae, Trigonella foenum-graceum*, heavy metal Arsenic, Fresh and Dry weight.

ISCA-ISC-2012-03BS-75

Studies on Moss Flora of Family Bryaceae from Trymbakeshwar in Western Ghats, India

Hile Vijay K.
Department of Botany, Bhavan's H. Somani College, Mumbai-07, INDIA

Abstract: Mosses, a highly evolved group amongst Bryophyta play a key role in the formation of natural biotic community and are indicative of forest condition were abundant in the Western Ghats. Recently it has been observed that this forest have succumbed to heavy deforestation, urbanization pressure and pollution and as such survival of many species including mosses have been threatened and are becoming endangered. Trymbakeshwar is the area under investigation which lies towards eastern spur of western Ghats.It is 28 km by road from Nasik(Maharashtra). The elevation of Trymbakeshwar is about 600 Mtr from sea level and stands on dark besalt rock. The area experiences an average maximum temp. 35-40^{0}C & 8-10^{0}C minimum with an average annual rainfall about 2500 mm. Plants of family Bryaceae are often with comal tufts of leaves. Leaf cells are prosenchymatous, linear and basal cells being rectangular. Six members viz. *Anomobyrum auratum* (Mitt.) Jaeg.,*Brachymenium* nepalense Hook., Brachymenium turgidum Broth.ex Dix.,*Bryum alpinum* Huds. Ex with., *Bryum coronatum* Schwaegr., *Bryum argenteum* Hedw. are reported for first time from this area.
Keywords: Moss, Bryaceae, Trymbakeshwar.

ISCA-ISC-2012-03BS-76

Amino Acid Sequence Informatics of Á-Galactosidase Enzyme from Different Source Organisms

Dwivedi Vivek Dhar[1] and Mishra Sarad Kumar[2]
[1]Department of Bioinformatics, Uttaranchal College of Science & Technology, Dehradun, INDIA
[2]Department of Biotechnology, DDU Gorakhpur University, Gorakhpur, INDIA

Abstract: In the present study, forty five full-length amino acid sequences of á-galactosidase enzyme from bacteria, fungi and plants were retrieved from GenPept database available at NCBI website and subjected to multiple sequence alignment (MSA), motif identification, domain identification, and phylogenetic tree construction. MSA revealed that a single tryptophan residue was conserved substitution in all analyzed species while one aspartic acid and one leucine residues were identically found in all plants and fungal á-galactosidases. Two major sequence clusters were constructed by phylogenetic analysis. One cluster contains fourteen species of plants, four species of fungi and four species bacteria, whereas the other one contains one species of plant, seven species of fungi, and eleven species of bacteria. Four species of fungi were not included in any cluster. Two new motifs with some substitution were identified. Motif GPGGWNDPDMLEVGN was found in all species of plant, fungal and bacterial sequences profile, whereas the other motif HFSIWALAKAPLLIGCDLRSM was found in all species of plant and fungal sequences profile. In addition, some motifs which were unique for their groups were also identified.
Keywords: á-galactosidases. MSA, Phylogenetic analysis, Conserved regions, Motifs, Domains.

ISCA-ISC-2012-03BS-77

Impact of Industrial Effluent on the Changes in Na^+, K^+ and Ca^{++} ion Content in Brain, Liver, Muscles and Gill Tissues of a Fresh Water Fish, *Oreochromis Mossambicus*, Peters

Patro Lingaraj
Environmental Toxicology Laboratory, Dept. of Zoology and Biotechnology, KBDAV College, Nirakarpur, Odisha, INDIA

Abstract: Mushrooming of industries throughout the world to cater to the needs of the growing population and technology has resulted in the use and production of a large number of chemicals. These chemicals include extremely toxic substances which can affect man and other living bodies in the ecosystem severally. The most important thing is the introduction of chemical substances into the environment, which never before existed in nature. Emissions of effluent from various industries into water bodies are having detrimental effects on aquatic species like fish. High percentage of mortality of fish due to the action of the effluent might be due to the pathological changes. The present investigation was designed to study the effect of effluent of a chlor-alkali industry on changes in Na^+, K^+ and Ca^{++} ion contents in different tissues of a fresh water fish, Oreochromis mossambicus, Peters and its toxicological significance. The MAC value of the effluent was found to be 6.41 ml $^{-1}$ for 30 days and to be on the safer side 6.0 ml $^{-1}$ was considered for 28th days of the exposure for sub-lethal toxicological studies. The LC_{10}, LC_{50}, LC_{100} values after 28th days were recorded. It has been observed that all the exposed fishes appeared lethargic after exposure to the effluent. The major clinical symptoms such as inappetance

and ataxia appeared immediately after exposure. At higher concentration, the exposed fish showed loss of equilibrium, gradual onset of inactivity, erratic swimming with irregular collision to the inner glass wall of the aquarium were observed. Infection of eyes, exophthalmia and involusions of test fish were observed, when compared to control fish. The percent changes in sodium ion content, potassium ion content and calcium ion content in effluent exposed fish, when compared to control fish. The gill showed the maximum percent decrease in sodium ion content when compared to liver, muscle and brain tissue. The brain tissue showed the lowest decrease in sodium ion content. The exposed brain showed 28.77 % decrease, exposed liver showed 44.27 % decrease, the exposed muscle showed 41.40 % decrease and the exposed gill showed 64.02 % decrease in sodium ion content, when compared to its respective control values. The brain showed the maximum percent decrease in potassium ion content when compared to liver, gill and muscle tissue. The muscle tissue showed the lowest decrease in potassium ion content. The exposed brain showed 57.96 % decrease, exposed liver showed 44.87 % decrease, the exposed muscle showed 42.28 % decrease and the exposed gill showed 44.46 % decrease in potassium ion content, when compared to its respective control values. The gill showed the maximum percent decrease in calcium ion content when compared to muscle, liver and brain tissue. The brain tissue showed the lowest decrease in calcium ion content. The exposed brain showed 03.89 % decrease, exposed liver showed 17.32 % decrease the exposed muscle showed 27.24 % decrease and the exposed gill showed 32.61 % decrease in calcium ion content, when compared to its respective control values.29.86 % after 28th days of recovery, when the exposed fish was transferred to toxicant free medium.
Keywords: Fish, Chlor-alkali industry, Effluent, Toxic effect, Na^+, K^+ and Ca^{++} ion contents, Brain, liver, muscle and gill tissues.

ISCA-ISC-2012-03BS-78

Phytoplankton Community of A Fresh Water Pond at Jhabua, MP, India

Rawat Ranjana[1], Ganava Rita[1] and Choudhry P.[2]
[1]PG. Dept. of Zoology, Govt. P.G. College, Jhabua, MP, INDIA
[2]PG. Dept. of Zoology, Govt. P.G. College, Dhar, MP, INDIA

Abstract: Fresh water habitats such as ponds, rivers, streams and reservoirs as a sources of drinking water, irrigation and fish production. Phytoplankton is the one of the most important component of the aquatic ecosystem and plays an important role as a primary producers in fresh water ecosystem .phytoplankton population of a fresh water pond were studied from July 2011 to June 2012 and during study four genera: bacillariophyceae, chlorophyceae, cyanophyceae and euglenophyceae were existed in the pond. Phytoplankton community variable in summar season and fluctuates in monthly and their production is also variable, According to result of this study the most important environmental factors are also affected diversity and density of phytoplankton communities.
Keywords: Producers, phytoplankton, environment.

ISCA-ISC-2012-03BS-79

Constructive and Destructive Environmental Impact of Thiobacillus Ferroxidans in Iron ore Leachates

Parakudyil Ancy S.[1], Nayak M.L.[2] and Pillai A.K.[2]
[1]School of Studies in life Science, P.T.R.S.UTY, Raipur, CG, INDIA
[2]Dept. of Chemistry, Govt.V.Y.T.P.G. Autonomous College, Durg, CG, INDIA

Abstract: Iron oxides and iron sulphides are rich in minerals of iron. Iron ore leachate is the ore wash water coming out from the mining area, which further come in contact with the nearby springs and rivers. Iron bacteria such as Thiobacillus ferroxidans, Thiobacillus thioxidan and Leptospirillum ferroxidans have application in industrial and mining process. Especially Thiobacillus ferroxidan is reported to have greater capacity to attack sulfide containing mineral. As a chemolithotrophic bacteria, it grows at low pH obtains energy by oxidizing ferrous ion to ferric ion. It was reported that T. ferroxidans is a acidophilic, chemolithotrophic, gram negative, rod-shaped autotropic bacteria, suited for growth in inorganic mining environment, can attack a variety of metal ores such as Cu, Pb, Ni, Mo, Zn etc. It can also be adapted to chemolithotrophic growth on a number of inorganic sulfur compounds, including thiosulfate, tetrathionate, trithionate and elemental sulfur. Thiobacillus Ferroxidan has many advantageous properties. Bioleaching of iron ore produce harmful and beneficial products. This paper is specially meant to carry out experiments on study of effect of bioleaching of iron ore leachates, collected from various sources and various seasons at different intervals. The sample was cultured in 9k Media/0.02 g. pH studies shows that it can survive in low pH. It causes the production acids of sulphur from sulphur compounds there by hindering aquatic life. By the diazotropic property T. ferroxidans can produce nitrogenous compounds which help the growth of leguminous type plants. The sample studies have made clear that Thiobacillus ferroxidans has both beneficial and adverse effects on environment.
Keywords: Iron ore leachates, Thiobacillus Ferroxidan, Bioleaching, pollution.

ISCA-ISC-2012-03BS-80

Proteomics Analysis and Homology Modeling of Human Stomach Cancer

Sharma Ritesh[1], Wahi Nitin[1] Bharadwaj Alok[1] and Gupta Amit[2]

[1]Dept. of Biotechnology, G.L.A. University, Mathura., INDIA
[4]Harihar Biotech, Agra., INDIA

Abstract: Protein are organic compound made up of amino acids arrange in a linear chain and join together by peptide bond between the carboxyl and amino group of adjacent amino acid residue . The sequence of amino acid in protein is defined by a sequence of gene which is encoded in genetic code. In general genetic code is specific to 20 amino acids Cancer is a class of disease in which group of cells display uncontrolled growth invasion and sometimes metastasis. These three malignant properties of cancer differentiate them from benign tumor which are self limited don't invaded or metasize. Most cancer form tumor but some like leukemia. The branch of medicine concerned with the study diagnoses treatment and prevention of cancer is oncology. "Leukemia is a cancer of bone marrow and blood. European physician in the 19th century were the earliest observers of patients who had markedly increase white blood counts. The term "weisses blood" or "white blood" emerged as a designation for the disorder. Later the term "leukemia" which is derived from the Greek words "leukos" meaning white and"haima" meaning blood was used to indicate the disease Bioinformatics is an emerging area of science and technology which addressing biological data and protein sequence were collected for Swiss port for leukemia. After performing 'PDB BLAST' we got nearby sequence. The sequence is aligned using 'CLUSTAL W' package to know their similarity and at last we perform homology modeling by Swiss model server.

ISCA-ISC-2012-03BS-81

Stress

Joshi Tanuj*

Department of Pharmaceutical Sciences, Bhimtal Campus, Kumaun University, Nainital, INDIA

Abstract : Stress is a broad term applied to both external and internal stimuli that may alter the physical and mental homeostasis of a person or an animal. Stress is caused by a number of factors like pain, noise, changes in environmental conditions and struggles of day to day life. Stress causes various neuroendocrine changes. The two main pathways activated in response to stress are the hypothalamic pituitary adrenal axis which results in release of glucocorticoids and the sympathetic nervous system which results in release of catecholamines: epinephrine and norepinephrine. Also prolactin, growth hormone and nerve growth factor are released following stress. Stress both physical and psychological, results in neuroendocrine signals being released from the brain that can effect the immune system. Stress is a response to physical, chemical, biological and emotional changes, consisting of a pattern of metabolic and behavioral reactions that helps in strengthening the organism. If the stress is extreme, the homeostatic mechanisms of the organism become deficit and the survival of the organism is threatened. Under these conditions, stress triggers a wide range of the body changes called General Adaptation Syndrome (GAS). The stimuli, which produce GAS, are called the stressors and range from physical to psychological factors including cold, heat, infection, toxins, major personal disappointment etc. There is information about the contribution of stress in oxidant production in the brain. Stress results in free radical generation and subsequent oxidative damage. Thus extensive medical research into stress could help in the therapy of diseases which are stress related.

Keywords: Stress, Neuroendocrine, Catecholamines, Immune System, General Adaptation Syndrome, Oxidant.

ISCA-ISC-2012-03BS-82

Study of Algal Flora of Kalika Pond, Dhar M.P., India

Baghel Laxmi[1] and Baghel Manju[2]

[1]Department of Zoology, Maharaja Bhoj Govt. P.G. College, Dhar, M.P., INDIA
[2]Department of Botany, Holkar Science College, Indore, M.P., INDIA

Abstract: Freshwater algae are among the most diverse and ubiquitous organisms on earth. Algae in fresh waters have numerous environmental functions. On the other hand, some species have increased enormously making water unfit for drinking and recreation. This paper presents data on the algal flora of Kalika Pond, Dhar (M.P.). The study reveals Physico-chemical parameters of fresh water and their relation to the growth and distribution of phytoplankton population have been evaluated by standard procedures. The taxonomic account of algae with three different groups has been recorded in Kalika Pond and photographs have been taken and identified to species level using research publications. About 19 algal species belonging to Chlorophyceae, Bacillariophyceae and Cyanophyceae species have been described along with Camera respectively. Besides, the frequency distribution of various algae has been analyzed. The species of Spirogyra was most frequent among Chlorophyceae. The Bacillariophyceae members were dominated by Cymbella and Navicula. Among Cyanophyceae, Spirulina and Oscillatoria were abundant.

Keywords: Fresh Water, Algae, Pond, Physico-chemical, Chlorophyceae.

ISCA-ISC-2012-04CS-01

Kinetics of Oxidation of Lactose by Chloramine-T with Photochemically Generated Radicals

Bakhru Meena and Jain Shubha
School of Studies in Chemistry and Biochemistry, Vikram University, Ujjain, MP, INDIA

Abstract: Carbohydrates are the essential biomolecules and a chief source of energy for living system. The oxidation of carbohydrates and fats in living system is a free radical reaction and we get energy from these exothermic reactions. Thus the oxidation of carbohydrates is a basic source of life. In order to understand the mechanism of oxidation of carbohydrates, a systematic kinetic study of oxidation of lactose with photochemically generated radicals was carried out using chloramine-T as an oxidising agent. The reaction has a first order dependence on [chloramine-T] as well as on [substrate]. The reaction is catalysed by H^+ ions as well. On the basis of kinetic results and product analysis a probable mechanism was suggested. The study will definitely provide a new vision to the researchers in chemical sciences in relation to the biological system.
Keywords: Lactose, kinetics, photochemical oxidation, chloramine-T.

ISCA-ISC-2012-04CS-02

Antioxidant and Cancer Cell Line Cytotoxicity Potential of *Kigelia pinnata* (Bignoniaceae) Leaves

Olubunmi Atolani[1*] and Gabriel A. Olatunji[2]
[1]Department of Chemical Sciences, Redeemer's University, Mowe, Ogun State, NIGERIA
[2]Department of Chemistry, University of Ilorin, P.M.B. 1515, Ilorin, NIGERIA

Abstract: Isolates from *Kigelia pinnata* (Bignoniaceae) leaves have been evaluated to possess antioxidant and anticancer potentials. The column fractions of hexane, ethylacetate and methanol leaves extracts afforded various oil fractions and isolates which include 3-hydro-4,8-phytene, *trans*- phytol, (9Z,12Z)-methyl octadeca-9,12-dienoate. These along with the crude extracts were examined for their antioxidant activities using ferric reducing antioxidant power (FRAP), 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging and 2,2- azinobis (3-ethyl-benzothiazoline-6-sulfonic acid) (ABTS) assays. Total phenolic contents were also determined. The chemical compositions of chromatographic oil fractions were determined using GC-MS. The structure elucidations of the isolated compounds were based on FTIR, MS and NMR spectral data analyses. The crude extracts and purified compounds were evaluated on cancer cell for its cytotoxicity using MTT cell viability assays. The methanol extract was richer in phenolics and was most potent as antioxidant and cytotoxic agent among all the substances tested. Among the fractions and pure compounds, the two oil fractions showed more cytotoxicity potency with IC_{50} 143.4±0.5 ng/mL and 147.9±1.3 ng/mL which is more significant than the reference standard, cyclophosphamide (165.6±1.0 ng/mL). 3-hydro-4,8-phytene showed lower antioxidant and cytotoxicity potential (IC_{50} = 1818±5.2 ìg/mL and 171.7±0.8 ng/mL respectively. *Trans*-phytol did not show a high cytotoxic power (IC_{50} = 769.8±4.3 ng/mL). The comparatively high cytotoxicity index of (9Z,12Z)-methyl octadeca-9,12-dienoate (IC_{50} = 153.3±0.1 ng/mL), that this may be the principal cytotoxic agent in the ethyl acetate extract. These results suggest that the leaves of *Kigelia pinnata* possess tumor cytotoxic potential, which could be a source of lead compound for cancer chemotherapy in the near future.
Keywords: *Kigelia pinnata,* MTT assay, ABTS assay, antioxidant, cancer, cytotoxicity, *Trans*-phytol.

ISCA-ISC-2012-04CS-03

Homogeneous Catalytic Oxidation of some Polyhydric Alcohols by Iridium Trichloride

Srivastava Sheila[1], Srivastava Parul[2], Gupta Vandana and Jaiswal Arti
[1]Chemical Laboratories, Feroze Gandhi College, Rae Bareli–229001, UP, INDIA
[2]Chemistry Department, Lingaya's University, Faridabad, UP, INDIA

Abstract: Kinetic investigation in Ir(III) catalyzed oxidation of D-Sorbitol and Glycerol in an acidified solution of NBS in the presence of $Hg(OAc)_2$ as a scavenger for bromide ion has been carried out in the temperature range of 30^0 - 45^0 C. First order kinetics in the lower NBS concentration range tended to zero order at higher concentration. Increase in concentration of Cl^- and H^+ ion show fractional inverse order while the order of reaction w.r.t. substrate is zero. Negligible effect of $Hg(OAc)_2$ and ionic strength of the medium was observed. A suitable mechanism in conformity with the kinetic observations has been proposed and the various activation parameters have been calculated.
Keywords: Homogeneous, Oxidation, NBS, acidic, catalysis, iridium(III).

ISCA-ISC-2012-04CS-04

Synthesis of Ethylene Carbonate from Cyclocondensation of Ethylene glycol and urea over $ZnO.Cr_2O_3$ Catalyst system controlled by co-precipitation method

Prasad Rajendra, and Dwivedi Reena
Catalysis and Nanomaterials Research Laboratory, School of Chemical Sciences, Devi Ahilya University, Indore, MP, INDIA

Abstract: $ZnO{\cdot}Cr_2O_3$ catalyst has been synthesized by low temperature, pH controlled co-precipitation route and characterized employing techniques of Brunauer, Emmett, and Teller (BET) surface area measurement, ammonia desorption technique, X Ray Diffraction(XRD) and Scanning Electron Microscopy(SEM). These characterizations reveal the catalyst to posses $ZnO{\cdot}ZnCr_2O_4$ composition. The catalysts have been tested for their performance for the first time, in the synthesis of ethylene carbonate from cyclocondensation of ethylene glycol and urea. Effect of catalyst concentration, temperature and molar ratio of reactants has been studied to obtain the optimum conversion and selectivity of ethylene glycol and urea to ethylene carbonate. A maximum yield of 85.75 % of ethylene carbonate was obtained at a temperature of 423K and urea: ethylene glycol molar ratio of 1:1.5. A tentative mechanism of the reaction is proposed on the basis of analysis of reactants, products and modeling of the transition state for the reaction under density function theory using Gaussian09 software. Our studies suggest a consecutive mechanism for the reaction. In the first step urea and ethylene glycol react to produce 2-hydroxyethyl carbamate which undergoes further reaction to produce ethylene carbonate (EC) and ammonia.
Keywords: Catalyst, temperature, pH, X Ray.

ISCA-ISC-2012-04CS-05

A Membrane Reactor Concept for Coupling Fischer-Tropsch Synthesis with Oxidative Coupling of Methane to Enhance Gasoline Production

Ghareghashi Abbas and Ghader Sattar*
Department of Chemical Engineering, College of Engineering, Shahid Bahonar University of Kerman, Kerman, IRAN

Abstract: In this study, a one dimensional heterogeneous model was developed to evaluate the performance of Fischer–Tropsch synthesis (FTS) in a shell and tube fixed bed membrane reactor. In this operation, a reactor system comprising hydrogen perm–selective membrane is studied in which FT reaction in reaction side of reactor is coupled with oxidative coupling of methane (OCM) reactions in shell side. In the new idea, the product of OCM reactions (H_2) is used in FT synthesis in a configuration in which the two catalyst beds are separated by membrane. CH_4, H_2O and O_2 are fed to the shell side of reactor, and OCM products are converted to FTS products in tube side. In a single FTS reactor, the ratio of H_2/CO decreases and will have a value far from optimum value, and as a result, the membrane reactor is a good idea to manage hydrogen addition. Furthermore, hydrogen addition can solve some observed drawbacks in fixed bed reactors such as pressure drop and heat transfer problem. The FTS model was validated with experimental data of Research Institute of Petroleum Industry (RIPI). The aim of combining FT and OCM reactions was enhancing gasoline production. The results demonstrated an improvement in the gasoline yield, a main decrease in CO_2 formation and a favorable temperature profile compared to the pilot plant of FTS in RIPI.
Keywords: Fischer-Tropsch synthesis, oxidative coupling of methane, membrane reactor, gasoline.

ISCA-ISC-2012-04CS-06

Characterization and Performance of Surface-Treated Barium Sulfate Extender Pigment in Paint

Gupta Manu and Kamani P.K.
Deptt. of Oil and Paint Technology Harcourt Butler Technological Institute HBTI, Kanpur – 208 002, INDIA

Abstract: The paper deals with treatment of barium sulfate extender pigment with iron oxide in different architectural and industrial coatings. By depositing a ferric oxide layer on barium sulfate particles a novel pigment with better optical and functional performance is obtained. This pigment in various coating system improves physicochemical performance. This treated barium sulfate extender pigment acts as an active barrier. The experimental techniques of surface treatment have been discussed along with the instrumental analysis by SEM, EDAX, XRD etc.
Keywords: a-Fe_2O_3/barium sulfate extender particle; pigment; surface treatment; surface chemistry.

ISCA-ISC-2012-04CS-07

Thermodynamics and Solution State Studies on some Ternary Complexes of La(III), Ce(III) and Pr (III) with L-proline and Kojic Acid

Patel Dhara D.
M.L. Institute of Diploma Studies, Bhandu, Gujarat, INDIA

Abstract: The determination of formation constants and thermodynamic parameters (“G, “H and “S) of ternary metal complexes (ML_1L_2) where M = La(III),Ce(III), Pr(III) and L_1= Kojic acid and L_2 = L-Proline have been carried out using Irving Rossotti titration technique at 30±1°C, 40±1°C and 50±1°C and at fixed ionic strength, μ = 0.2 mol dm^{-3} ($NaClO_4$) the separation of titration curves demonstrate the formation of Metal ligand complexes of stoichiometry M L_1L_2. All metal ion formation constant of the complexes, M L_1L_2 in addition to M $L_1$and ML_2 type of complexes for all metal ions were evaluated using for the Fortran IV computer program and the complex formation equilibrium data were pruned with the aid of speciation curves plotted with aid of Fortran IV computer program SPEPLOT. The stability order of metal complexes and solution structure of ML_1L_2 complexes have been discussed on the basis of basicity of ligands and coordination sphere of complexation.

Keywords: Ternary complexes, formation constant, L-proline, kojicacid.

ISCA-ISC-2012-04CS-08

Synthesis, Spectral and Antimicrobial Studies of 2, 4, Diamino-6-Piperidino Pyrimidine-3-Oxide Mannich Bases

Joshi Sheela, Vyas Kapil* and Bilgaiyan Purti
School of Chemical Sciences, D.A.V.V., Indore, MP, INDIA

Abstract: The present invention deals with the synthesis of Mannich bases of 2,4,diamino-6-piperidino pyrimidine-3-oxide methylamines. A series of Mannich bases of 2,4,diamino-6-piperidino pyrimidine-3-oxide were synthesized via Mannich reaction of 2,4,diamino-6-piperidino pyrimidine-3-oxide with primary amines. Their chemical structures were established on the basis of elemental analysis, UV, IR and ^{1}HNMR Spectral data. All the compounds have been tested for their antimicrobial activity against a representative panel of bacteria i.e. *E-coli, B.subtilis,* and *S.aureus*. Synthesized compounds were found to exhibit profound antibacterial activity. 2,4,diamino-6-piperidino pyrimidine-3-oxide, a biologically potent drug showed no significant antibacterial activity but its Mannich bases are found to show potent activity against the pathogenic bacteria.

Keywords: 2,4,diamino-6-piperidino pyrimidine-3-oxide, Methylamines, Mannich reaction, Mannich bases, Antibacterial activity.

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Synthesis of Template Free-Nanoparticles from Silica –Guanidine Catalyst

Muazu Samaila Batagarawa and Farook Adam
School of Chemical Science University, Sains, Penang 11800, MALASIA

Abstract: Extracted silica from Rice husk ash, was functionalized with tetramethylguanidine which is a strong base, among the class of organic compounds called carbamates. After silylation of the silica with 3-chloropropyltriethoxysilane (CPTES) by using a reported method, tetramethylguanidine was later immobilized on the silica. Charecterisation of the modified silica surface was confirmed by FT-IR, TGA, BET, XRD, elemental analysis, CPMAS ^{29}Si and ^{13}C NMR. The surface morphology of the material was also analysed by using Transmission Electron Microscopy (TEM) micrographs,which revealed the presence of spherical nanoparticles with average diameter of 19.62nm. Similarly, ^{13}C Solid state NMR study also revealed the presence of four set of carbon atoms on the catalyst structure, which confirmed the successful immobilization of the guanidine on to silica the support. The nitrogen adsorption-desorption analysis showed the catalyst with BET surface area of 12.02 $m^2g^{-1}$with a pore diameter of 2.12nm.

Keywords: Extracted silica, tetramethylguanidine, chloropropyltriethoxysilane.

ISCA-ISC-2012-04CS-10

Development of Sensitive Voltammetric Method for Determination of Thorium in Waste Waters

Dubey S.[1], Sharma P.[2] and Kherwa V.[3]
[1]MVJ College of Engineering, Bangalore, Karnataka, INDIA
[2]Electroanalytical Laboratory, Department of Chemistry, J.N.V. University, Jodhpur, Rajasthan, INDIA
[3]Department of Chemistry, C.D.L.University, Sirsa 125055, Haryana, INDIA

Abstract: An indirect voltammetric determination method of thorium based on the displacement reaction between Th (IV) and Zn (II) - EDTA complex in ammonium acetate buffer medium is described. The limit of quantification of 5 µg/L was observed using differential pulse polarography. The possibly associated metal ions did not interfered in measurements. The method has been successfully applied for the analysis of thorium in waste water samples.
Keywords: Thorium, Differential Pulse Polarography, Waste Waters Analysis.

ISCA-ISC-2012-04CS-11

Correlation Analysis: Oxidation of Some Á-Hydroxy Acids by Imidazolium Fluorochromate

Vyas P.[1], Sharma P.K.[2] and Sharma Vinita[2]
[1]Department of Chemistry, Jodhpur Institute of Engineering and Technology, Mogra, Jodhpur, Raj., INDIA
[2]Department of Chemistry JNV University, Jodhpur, Raj., INDIA

Abstract: Selective oxidation of organic compounds under non-aqueous conditions is an important reaction in synthetic organic chemistry. For this a number of different chromium (VI) derivatives have been reported. Imidazolium fluorochromate (IFC) is one such compound used for the oxidation of phenylic alcohols and oximes. The oxidation of glycollic, lactic, malic and a few substituted mandelic acids by imidazolium fluorochromate (IFC) in dimethylsulphoxide (DMSO) leads to the formation of corresponding oxoacids.The reaction is first order each in IFC. Michaelies-Menten type of kinetics is observed with respect to the hydroxy acids. Reaction failed to induce the polymerisation of acrylonitrile. The oxidation ofá-deuteriomandelic acid shows the presence of a primary kinetic isotope effect (kH/kD = 5.75 at 298 K).The reaction does not exhibit the solvent isotope effect. The reaction is catalysed by the hydrogen ions.The hydrogen ion dependence has the form: $k$obs = a + b [H+]. Oxidation of p-methyl mandelic acid has been studied in 19 different organic solvents. The solvent effect has been analysed by using Kamlet's and Swain's multiparametric equations. A mechanism involving a hydride ion transfer via a chromate ester is proposed.
Keywords: Kinetics, oxidation, imidazolium fluorochromate, á-hydroxy acid.

ISCA-ISC-2012-04CS-12

Studies on Non-Permitted colours and Adulterants in Food Articles in National Capital Region

Tomer Neetu and Singh A.K.
Department of Chemistry, M.M.H. College, Ghaziabad, Uttar Pradesh-201001, INDIA

Abstract: The present study consisted of the determination of the food articles like vegetables, fruits, pulses and cereals which are generally found adulterated and nature of adulteration along with reasons in National Capital Region of India.The determination of these adulterants are identified by TLC,GLC and GC methods. Food is one of the essential of life and it must be whole some and free from adulteration for proper maintenance of health. Our objective would be to know the extent of awareness regarding adulteration in food among consumer and traders .The purpose of study of colouring matters in food is to make suggestions based on the conclusion of studies, as to know the problem of adulteration in food articles can be handled in its best spirit so as to eradicate this social evil.
Keywords: Adulteration, food articles, GC.

ISCA-ISC-2012-04CS-13

Microwave Synthesis - A Potential Tool for Green Chemistry

Dhakite Pravin A.[1], Gogte B.B.[2] and Phate B.W.[3]
[1]Department of Applied Chemistry, Datta Meghe Institute of Engineering, Technology and Research, Wardha, MS INDIA
[2]Department of Applied Chemistry, Shri. Shankarprasad Agnihotri College of Engg, Ramnagar, Wardha-442001, MS, INDIA
[3]Department of Applied Chemistry,Indira Gandhi Priyadarshini College of Engineering, Nagpur, MS, INDIA

Abstract: Microwave radiation, an electromagnetic radiation, is widely use as a source of heating in organic synthesis.The basic mechanisms observed in microwave assisted synthesis are dipolar polarization and conduction. Microwaveassisted organic synthesis (**MAOS**) has emerged as a new "lead" in organic synthesis. The technique offers simple, clean, fast, efficient, and economic for the synthesis of a large number of organic molecules, have provided the momentum for many chemists to switch from traditional heating method to microwave assisted chemistry. In the recent year microwave assisted organic reaction has emerged as new tool in organic synthesis. In the present article an attempt was made to focus on what is microwave, how is it generated and what importance may it have.
Keywords: Microwave radiation, electromagnetic spectrum, Green chemistry.

ISCA-ISC-2012-04CS-14

Nitrate Removal by Catalytic Reduction in Water in the Presence of a Pd-In/TiO_2 Catalyst and Formic Acid as a Reducing Agent

Pierre Gerard Tchieta,[1,2,*] Robert Joseph Ketcha,[1] Martin Nemba,[1] Florence Epron[2]
[1]Laboratoire de Chimie Théorique et Physique, Faculté des Sciences, Université de Yaoundé I; BP 812 Yaoundé, CAMEROUN
[2]Laboratoire de Catalyse en Chimie Organique (UMR6503), CNRS-Université de Poitiers, 40, 86 022 Poitiers Cedex, FRANCE

Abstract: Catalytic reduction is one of the methods used for the removal of nitrates from polluted waters. The aim of the present study was to define the appropriate method for the catalyst preparation as well as the operating conditions that could maximise the activity of the catalyst for the reduction of nitrates and minimize the percent of ammonium formed. A 5%Pd-1.75%In/TiO_2 bimetallic catalyst was chosen in order to define these parameters. The catalyst was characterized by temperature programmed reduction and X-ray diffraction. It comes out from the results that, the apparent activation energy is 44,8 kj/mol obtained; the initial concentration used to produce carbon dioxide and hydrogen of formic acid is 16 mmol/L and this enable us to obtain the best activity as well as the weakest selectivity of ammonium ion.
Keywords: Palladium, indium, formic acid, nitrate, catalytic reduction.

ISCA-ISC-2012-04CS-15

Synthesis of Some Novel 1, 3, 4-Oxadiazole Derivatives

Rashidi N.A.[1] and Berad B.N.[2]
[1]Post Graduate Department of Chemistry, Shri Shivaji Science College Amravati, MS, INDIA
[2]Department of Chemistry, RTM Nagpur University, Nagpur, MS, INDIA

Abstract: A series of N-(4-chlorophenyl) amino-5-aryl-1,3,4-oxadiazole (IVa-f) have been synthesized by the condensation of acid hydrazides (Ia-f) and 4-(chlorophenyl) isocyanodichloride (II). Six different aromatic acid hydrazides were obtained by the estrification of aromatic acid followed by treatment with hydrazine hydrate. The compound (II) was prepared by the exhaustive chlorination of p-chloro isothiocyanate. Structures of all the newly synthesized compounds were confirmed by physical characterization and IR and NMR and Mass spectral analysis.
Keywords: 1,3,4-oxadiazole, acid hydrazides, 4-(chlorophenyl) isocyanodichlorides**.**

ISCA-ISC-2012-04CS-16

Theoretical Studies of Spectra of Some Pyrazolone Compounds

Arora Kishor
Department of Chemistry, Govt. P.G. Autonomous College, Datia, MP, INDIA

Abstract: The vibration modes of some pyrazolone compounds were examined experimentally and theoretically using Semi-empirical AM1 and PM3 methods. Apart from giving the comparison of the significant part of the spectra, the statistical correlation was also calculated for the theoretical spectra and methods to establish the use of these methods as alternative and supportive tool in analytical chemistry. Vibration modes for the compounds under study show a perfect correlation between theoretically and experimentally observed values.
Keywords: Pyrazolone, Semi-empirical AM1, statistical correlation, Vibration modes.

ISCA-ISC-2012-04CS-17

Synthesis of Some New Bioactive Quinolines

Bodawar K.R.[1], Panchal G.V.[2], Wadewale S.S.[3] and Jadhav J.S.[4]
[1,4]Department of Chemistry, N.S.B. College, Nanded, MH, INDIA
[2]Department of Chemistry, A.C.S. College, Shankarnagar, Dist. Nanded, MH, INDIA
[3]Department of Chemistry, V.P.I. Nanded, MH, INDIA

Abstract: In present investigation, synthesis of substituted 2-chloro-3-carbaldehyde (2) by Vilsmeyer reaction is described. This compound (2) has formyl group at 3-position. This compound (2) on treatment with ethyl cyano acetate gives cyano compound (3). On refluxing with ethyl acetoacetate, p-anisidine, piperidine, hydroxyl amine furnish derivatives $4_{(a-d)-}$ in excellent yields. The compound (2) by reaction with benzothiazole derivatives gives product $5_{(a-d)}$ with significant yield. The structures of final products were confirmed by analytical and spectral data. The derivatives $4_{(a-d)-}$ and $5_{(a-d)}$ were found to possess considerable biological activity against various g+ve and g-ve pathogens. Against S. aureus and E. coli show promissing bioactivity using streptomycin as standard.
Key words: Carbaldehyde, Benzothiazole, Ethyl cyano acetate.

ISCA-ISC-2012-04CS-18

Synthesis and Characterization of Transition Metal Complexes of 1, 3-diketone Ligand

Shinde M.P. and Toche R.B.
Dept. of Chemistry, KTHM College, Nashik, Maharashtra, INDIA

Abstract: Co-ordination compounds occur in plants as well as in animals. Chlorophyll is an important constituent of the plants life is a co-ordination compound of Mg (II). The color of the blood is due to Haemoglobin which is co-ordination compound of Fe (II). Most of the other trace elements in human body function in the form of Co-ordination compounds. The synthesis of 1,3-diketones is one of the important reaction in organic transformations as they are used as intermediates for the synthesis of core heterocycles such as pyrazole, isoxazole and triazole. They are also used as chelating ligands for various lanthanide and transition metals in material chemistry. Owing to such an enormous applications the synthesis of unsymmetrical 1,3-diketones has gained considerable in recent years and chosen for to co-ordinate with transition metals. The 1-(3-5-bis(trifluoromethyl)phenyl)-4,4,4-triflurobutane 1,3-dion was obtained by literature procedure from 3,5-bistrifluro acetophenone and ethyl trifluro acetate using sodium methoxide. This ligand can easily co-ordinated with transition metals such as Mn(II), Co(II), Ni,(II) Fe,(II) Cu(II). The complexes exhibits Co-ordination number 4-6.. The geometry of these complexes were proved from their IR, CHN analysis, magnetic susceptibilities. These complexes showed promising anti-microbial activity against E-coli, pseudomonas aeruginousa, Staphylococcus aureus, Candida sp.
Keywords: Co-ordination compounds, 1,3-diketones, Chlorophyll.

ISCA-ISC-2012-04CS-19

Inhibition Effect of Environmentally Benign Karanj seed Extract on Corrosion of Mild Steel in Acidic Media

Sudhish Kumar Shukla
Department of Chemistry, Manav Rachna College of Engineering, Faridabad, INDIA

Abstract: Corrosion inhibition of mild steel in sulphuric acid solution by the Karanj seed extract has been studied using weight loss, electrochemical impedance spectroscopy, potentiodynamic polarization and linear polarization techniques. Inhibition was found to increase with increasing concentration of the extract. The effect of temperature, immersion time and acid concentration on the corrosion behavior of mild steel in sulphuric acid with addition of extract was also studied. The adsorption of the extract on the mild steel surface obeyed the Langmuir adsorption isotherm. Values of inhibition efficiency calculated from weight loss, potentiodynamic polarization, and electrochemical impedance spectroscopy (EIS) are in good agreement. Polarization curves showed that Karanj seed extract behaves as a mixed-type inhibitor in sulphuric acid. Surface studies also shows that the activity of karanj seed extract as inhibitive agent. The results obtained showed that the seed extract of Karanj could serve as an effective inhibitor of the corrosion of mild steel in sulphuric acid medium.
Keywords: Corrosion inhibition, sulphuric acid, potentiodynamic polarization.

ISCA-ISC-2012-04CS-20

Arylation of Unprotected Quinoline Derivatives by Suzuki Miyaura Reaction in Water

Toche Raghunath B.*
Organic Chemistry Research Centre, P.G. Dept. of Chemistry, K.T.H.M. College, Nashik - 422 002, INDIA

Abstract: Carbon-carbon bond formation in diversely functionalized unprotected 4-amino-2-chloroquinolone derivatives were successfully done by using Suzuki-Miyaura cross coupling reaction in aqueous medium. Parallel experimentation proved the efficiency of tetrakistriphenylphosphine palladium catalyst for C_2-arylation of diversely functionalized quinolines. Reaction was optimized for the use of proper solvent, temperature and reaction time. For efficient C_2-arylation on quinoline derivatives using boronic acids needed C_3/C_4 electron withdrawing group.
Keywords: Carbon-carbon bond, functionalized, 4-amino-2-chloroquinolone.

ISCA-ISC-2012-04CS-21

A Simple Method for Voltammetric Determination of Trace Amounts of Selenium in Diverse Matrices

Kherwa V.[1], Sharma P.[2] and Dubey S.[3]
[1]Department of Chemistry, C.D.L.University, Sirsa 125055, Haryana, INDIA
[2]Electroanalytical Research Laboratory, Department of Chemistry, JNV University, Jodhpur 342005, INDIA
[3]Department of Chemistry, Mvj College of Engineering, Bangalore, Karnataka, INDIA

Abstract: A simple and convenient method is described for the determination of low concentration selenium in samples of industrial waste and vitamin tablet. The method is based on the differential pulse polarographic reduction of Se (IV) in presence of alanine in ammonium chloride medium. Linearity of the calibration curve was achieved upto 44ppm with a limit of determination of 5 ìg/L. Major metal ions copper, lead and zinc did not interfere.
Keywords: Selenium, differential pulse polarography, industrial wastes, vitamin tablet.

ISCA-ISC-2012-04CS-22

The Metal Complexes of 5-[(benzyloxy) methyl] quinolin-8-ol (BeMQ) and 8-quinolinols mixed Ligand: A New Transition metal Complexes with *In-vitro* antifungal activity

Patel Ketan B.*[1], Patel Yogesh M.[1] and Patel Raksha B.[1]
[1] Government Science College, Department of Chemistry, Gandhinagar, Gujarat, INDIA

Abstract: 5-Chloromethyl-8-quinolinol was condensed stoichiometrically with various alcohols specially Benzyl Alcohol in presence of sodium carbonate. The resulting 5-[(benzyloxy) methyl] quinolin-8-ol (BeMQ) was characterized by elemental analysis and spectral studies. The transition metal chelates viz. Cu^{2+}, Ni^{2+} , Co^{+2} , Mn^{2+} and Zn^{2+} of BeMQ and 8-quinolinols were prepared and characterized by mixed ligand complexes(L:M:L) ratio, elemental analysis, IR, reflectance spectral studies, magnetic properties and conductivities measurements. The antifungal activity of BeMQ and its metal chelates was investigated against various fungi. The metal complexes exhibit good activity against fungal strains compared with parental compounds.
Keywords: Transition metal Complexes, 8-quinolinols, Spectral studies, Magnetic moment and In-vitro antifungal activity.

ISCA-ISC-2012-04CS-23

Studies on Inclusion Complexes of Some Pyrazole Derivatives

Singh D.L., Nayak S.K. and Panda S.
PG Department of Chemistry, Berhampur University, Bhanjabihar, Berhampur -7, Odisha, INDIA

Abstract: Pyrazole and their derivatives constitute an interesting class of heterocycles due to their synthetic versatility and wide spectrum of pharmacological activities. But these compounds are having poor solubility in polar medium, which may be a limiting factor reducing their pharmacological efficiency. In this context an attempt has been made to prepare inclusion complexes of pyrazole and their derivatives with â-cyclodextrin which is a very good analytical tool for increasing solubility and bio accessibility of the compounds. The formation of inclusion complexes has been ascertained by the study of spectral and thermodynamic properties. Finally, the compounds and their inclusion complexes are screened

against some selected microbes for antibacterial activity. It is found that, the inclusion complex formation increases the antibacterial activities significantly as compared to the naked compound.
Keywords: Pyrazole, heterocycles, pharmacological activities.

ISCA-ISC-2012-04CS-24

Periodic Change in the Concentration of Hydrogen Peroxide Formed During the Semiconductor Mediated Sonocatalytic treatment of Wastewater: Investigations on pH Effect and Other Operational Variables

Jyothi K.P., Sindhu Joseph, Suguna Yesodharan, Yesodharan E.P.*
School of Environmental Studies Cochin University of Science and Technology, Kochi 682022, INDIA

Abstract: Hydrogen peroxide, formed in situ or externally added, is an important Reactive Oxygen Species (ROS) involved in Advanced Oxidation Processes (AOP) such as sono, photo and sonophoto catalysis being investigated as environment friendly technologies for the treatment of wastewater under ambient conditions. Among the various ROS such as $^{\cdot}OH$, $HO_2^{\cdot}$, $O_2^{-\cdot}$, H_2O_2, O_2 etc, H_2O_2 is the most stable and it serves as a reservoir of other ROS. Current investigations on the ZnO and TiO_2 mediated sonocatalytic degradation of phenol pollutant in water reveal that, H_2O_2 formed cannot be quantitatively correlated with the degradation of the pollutant. The concentration of H_2O_2 varies in a wavelike fashion (oscillation) with well defined crests and troughs, indicating concurrent formation and decomposition. Both processes are sensitive to the reaction conditions and depending on the externally forced or in situ situation, either of them can predominate. The degradation of H_2O_2 continues for some more time even after the sonication has been put off showing that the catalyst has some residual activity. This further confirms that trapped electrons and holes have unusually longer life even after the irradiation is off. Concentration of H_2O_2, catalyst loading, dissolved gases, concentration of the organic pollutant, pH etc influence the oscillation. The degradation of phenol is favored in the acidic range with maximum at pH 5.5. The successive maxima and the minima in the oscillation of H_2O_2 concentration also are higher in the acidic range. The influence of pH on various factors leading to the oscillation in the concentration of H_2O_2 is unequivocally established from a number of experiments, for the first time in this paper. An appropriate mechanism to explain the complex phenomenon is also proposed.
Keywords: Sonocatalysis, Zinc Oxide, Titanium dioxide, Hydrogen peroxide, Oscillation, pH effect.

ISCA-ISC-2012-04CS-25

Synthesis and Fluorescent Study of 2, 3-Disubstituted Maleic Anhydride Derivatives

Gosavi Kirankumar S., Mahale Keshao A., Deshmukh Ganesh B., Patil Nilesh S., Patil Sambhaji V.
Organic Chemistry Research Centre, Department of Chemistry, KTHM College, Nashik-422002, MS, INDIA

Abstract: Since last two decades, synthesis of fluorescent material has attracted the researchers from the area of biochemistry, clinical chemistry, and analytical chemistry. In the area of biochemistry ,the fluorescence has found the numerous applications to investigate the structure and dynamics of the living systems. .Now a days in the clinical diagnosis fluorescence has replaced the harmful radioactive tracers .The use of fluorescence eliminates the radioactive material and their cost of proper disposal. Human Genome Project were made practical by use of fluorescent labels. In analytical methodologies , use of fluorescence is increasing day by day because sensitivity of fluorescence is far greater than common UV technique. viz. Amino acids are poor UV absorbing compounds hence their fluorescent derivatisation is employed. Therefore we thought to synthesize[4] the new material for use in fluorescence application with desired side chain and photo physical properties. 2-Aryl-3-alkoxy maleic anhydride derivatives were synthesized in good yields. The the synthesized compounds shows fluorescence in visible region with high quantum yield.
Keywords: fluorescent, clinical chemistry, analytical methodologies.

ISCA-ISC-2012-04CS-26

Micellization of Some Novel Surfactants in Binary Aqueous Solvent Mixture

Bharadwaj Shweta and Sar Santosh K.*
Department of applied chemistry, Centre for Environmetal Science and Enginerring, Bhilai institute of Technology, CG INDIA

Abstract- The micellization behavior of Bile salt -Sodium cholate (SC) and Sodium deoxycholate (SDC) has been studied in aqueous methanol, ethanol and ethylene glycol mixtures (10-20% v/v) at temperature range (300-320 K) by surface tension and conductivity method and the critical micelle concentration (cmc), extent of counter ion binding (á), interfacial property (^{A}min, $^{\xi}$max, $^{\delta}$cmc, ΔG^0ad) and thermodynamic parameter (ΔG^0m, ΔH^0m, ΔS^0m) for micellization process have been reported and discussed.
Keywords: Bile salt -Sodium cholate (SC) and sodium deoxycholate (sdc), cmc, organic solvent, surface tension method, conductivity method.

ISCA-ISC-2012-04CS-27

Sequential One Pot Synthesis of Five Member Cyclic N-Aryl Imides

Mahale Keshao A., Gosavi Kirankumar S., Deshmukh Ganesh B. and Patil Nilesh S., Patil Sambhaji V.
Organic Chemistry Research Centre, K.T.H.M. College, Nashik- 422 002. Maharashtra, INDIA

Abstract: Synthesis of cyclic five member N-aryl imides by sequential one pot method has been described. Series of five member cyclic N-aryl imides were synthesized using maleic or succinic anhydride and various aromatic amines
Keywords: N-aryl imides, pot method, maleic anhydride.

ISCA-ISC-2012-04CS-28

A Thermodynamic Study on Stability of Mixed Ligand Complexes of Transition Metal (II) ions with Creatinine as Primary Ligand and Phenylephrine Hydrochloride as Secondary Ligand

Sharma Sangita[1] and Kadia Mahesh V.[2]
[1]Hemchandracharya North Gujarat University, Patan, Gujarat, INDIA
[2]C.U. Shah Science College, Ashram Road, Ahmadabad, Gujarat, INDIA

Abstract: A potentiometric is study is carried out on interactions of Co(II), Cu(II), Zn(II) and Hg(II) metal ions with Creatinine as a primary ligand and Phenylephrine hydrochlorid as a secondary ligand resulting in the formation of MAL (1:1:1) type of complexes at different temperatures and at constant strength, $\mu = 0.2$ ($Naclo_4$) in aqueous medium. Modified form Irwing Rossotti technique has been for the calculations. The Stability of complexes is explained on the basis of basicity of ligands, structure of ligands, charge/ size ratio of metal and chelation factors. Species distribution plots are ploted to find out probable percentage of free ligands and complexed metal ions. To account more about stability, distribution and bioavailability of various species in these equilibria MAL_2 (1:1:2) type of complexes of these selected metal ions is also studied. It is established that the most probable and stable structures are formed when metal to ligands ratio is 1:1:1.
Keywords: Complexes, mixed ligand, stability, metal ion, percentage.

ISCA-ISC-2012-04CS-29

Synthesis and Kinetic study of Mono-3-Chloro-2-Methyl Aniline Phosphate Ester

Bairagi Bhawana and Bhoite S.A.
School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur, Chattishgarh 492010, INDIA

Abstract: Kinetic study of the hydrolysis of Mono-3-chloro-2-methyl nitro aniline phosphate has been carried out in 0.1 to 7.0 M HCl at 50± 0.50C . The rate of hydrolysis increases with increase in acid molarity up to 4 M HCl and ofter that it decreases. The lowering of rates after 4 M HCl has been attributed to the effect of water activity. Rate data at constant ionic strength is used to identify reactive species and to determine theoretical rates. Hydrolysis of monoester via conjugate acid species has been assigned the bimolecularity of the reaction on the basis of Arrhenius parameters, Zucker- Hammett hypothesis and Bunnett & Bunnett –Olsen's parameters. Solvent effect has been found to indicate the formation of a transition state in which charge dispertion occurs. Kinetic rate data and isokinetic relationship have been used to propose the probable bond fission.
Keywords: Kinetics, hydrolysis, mono-3-chloro-2-methyl nitro aniline phosphate, hydrochloric acid.

ISCA-ISC-2012-04CS-30

Synthesis of Novel Carbohydrate Polymers by using Kinetic study and their Application in Detergents

Deshpande Anand D.[1], Burande Bharati Phate[2] and Gogte Bhalchandra B.[3]
[1]Department of Applied Chemistry, G.H. Raisoni College of Engineering and Management, Amravati, INDIA
[2]Department of Applied Chemistry, Priyadarshini Indira Gandhi College of Engineering, Nagpur, INDIA
[3]Department of Applied Chemistry, Shri Shankarprasad Agnihotri College of Engineering, Wardha, INDIA

Abstract: Polymeric surfactants are important part of detergent formulation. Beginning as a partial replacement for environmentally undesirable phosphates as co-builder, polymers have several important benefits that enhance the laundering process. The polymers in detergent for the function of soil release, dye-transfer inhibition and enzymes that remove stains. STPP is very important in detergent formulation due to its sequestering property. Maleic vinyl ether was the first polymer used in detergent formulation as anti-redeposition agent in 1975. The extensive usage of petroleum products develops a global pressure on petroleum products. Moreover, these materials are big threat to the safe and healthy environment. In these circumstances we restrict the use of petroleum products by replacing them with renewable resources of natural origin.

These Eco-friendly polymers have been synthesized form Sugar, Starch, Glycerol, Sorbitol, on the basis of their kinetic study and analyzed for different test, the best composition is used for the replacement of petroleum product in Powder and Liquid Detergents and compared with the commercial products.

Keywords: Sugar, Starch, Sorbitol, Kinetic Study, Detergent.

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Thermoplast-Thermoset Merged Polyimides Derived from Furan-Maleimide

Patel Yogesh S. and Patel Hasmukh S.*
Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar, Gujarat-388120, INDIA

Abstract: Novel thermoplast - thermoset merged polyimide system has been developed via Diels - Alder intermolecular reaction of bisfuran **A** namely, 2,5-bis(furan-2-ylmethylcarbamoyl) terephthalic acid with a series of bismaleimides **B1-3**. The intermediate Furan - maleimide Diels - Alder adducts **C1-3** were aromatized and imidized (i.e. cyclized) through carboxylic and amide groups to afford thermoplast-thermoset merged polyimides **D1-3**. Synthesized polyimides were characterized by elemental analysis, spectral features, number average molecular weight (Mn) and thermal analysis. Bulk polymerization was also carried out. Proof of structures was based mainly on a comparison of infrared spectra of polyimides with those of the corresponding model compound **4** prepared from 2-(furan-2-ylmethylcarbamoyl) benzoicacid in the similar way. FTIR spectral features of polyimides **D1-3** were quite identical with the model compound **4**. The 'in situ' void - free glass fiber reinforced composites **GFRC1-3** were prepared and characterized by mechanical, electrical and chemical properties. The 'in situ' produced PIs show good adhesion to glass fibers. All the composites depicted good mechanical and electrical properties and good resistance to organic solvents and mineral acids.

Keywords: Diels-Alder reaction, bisfuran, bismaleimide, polyimide.

ISCA-ISC-2012-04CS-32

Synthesis, Characterization and Biological Evaluation of Asymmetrical 3, 5-Disubstituted-1, 2, 4-Oxadiazoles

Patel Paresh N. and Patel Hasmukh S.*
Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar-388120, Gujarat, INDIA

Abstract: In the present communication, chiral asymmetrically 3,5-disubstituted-1,2,4-oxadiazole derivatives were synthesized via an efficient one-pot procedure by the condensation of new chiral amidoximes derived from amino acids with aldehydes. The method is applicable to both aliphatic and aromatic aldehydes, leading easily to the corresponding pure oxadiazoles in excellent yields. These newly synthesized compounds were characterized by various spectroscopic methods and tested for their antibacterial and antifungal activities using microdilution tests against some strains of bacteria and fungi, and they showed excellent antibacterial activity.

Keywords: 4,5,6,7-tetrahydrothieno[3,2-c]pyridine; Amino Acids; Amidoximes; Chiral 1,2,4-Oxadiazoles; Antimicrobial Activities.

ISCA-ISC-2012-04CS-33

Biological Evaluation of 1, 3-Bis-(2- Substitutedamino-6-Substitutedimino-1, 3, 5- Thiadiazin- 4- yl)-Thiourea Derivatives as Antimicrobial agents

Shelke M.E.
H.V.P.M.'s College of Engineering and Technology, Amravati, MS, INDIA

Abstract: A series of 1, 3-bis (2- substitutedamino-6-substituted-imino-1,3,5-thiadiazin- 4- yl)-thiourea[3a(i) to 3f (iii)] have been obtained by basification of their hydrochlorides [2a(i) to 2f (iii)].The latter were synthesized by the interaction of 1,3-bis (N-substitutedamidinothiocarbamido)- thiourea (1) and N-aryl/alkylisocyanodichlorides in 1:2 molar ratio. The compound (1) was prepared initially by the condensation of aryl/alkylisothiocyanate and 1,3-diformamidinothiourea in 1:2 molar ratios. The structure of all these compounds was established on the basis of IR and NMR spectral data. All the synthesized compounds have been assayed for their antibiological activity against both gram-positive and gram-negative human pathogens and found that they possess insecticidal, and bacteriocidal. Some 1,3,5-thiadiazine compounds show remarkable biological activity.

Keywords: Thiourea, 1, 3, 5-thiadiazine, antimicrobial activity.

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Fuel Properties of Degummed *Linum usitatissimum* Seed Oil for use as Diesel Fuel Extender

Kanakraj Sangeeta and Dixit Savita
Department of Chemistry, Maulana Azad National Institute of Technology, Bhopal, MP, INDIA

Abstract: Fuel properties of Degummed *Linum usitatissimum* seed oil blended with conventional petro-diesel were experimentally determined to establish their suitability for use in diesel engines. Three blends (25, 45 and 65 %) of degummed *Linum usitassimum* seed oil by volume with diesel were used. The properties determined were; specific gravity, kinematic viscosity, cloud and pour point, flash point and calorific value. Based on the finding of this study results, blends with 25 % Degummed *Linum usitatissimum,* content were found to have acceptable fuel properties for use as alternative fuel in diesel engines.

Keywords: Degummed *Linum usitatissimum* seed oil, alternative fuel, blends.

ISCA-ISC-2012-04CS-35

Study on Polycyclic Aromatic Hydrocarbons and Poly Chlorinated Biphenyls Yearly Based Concentration in Waste Oil-sludge at Mathura-Agra Region

Sharma Mitali and Rawat M.K.
Department of Chemistry, Agra College, Agra 282002, INDIA

Abstract: A study of Polycyclic Aromatic Hydrocarbons (PAHs) and Poly Chlorinated Biphenyls (PCBs) in waste oil-sludge was conducted at selected locations in Mathura-Agra Region for a span of two year in order to ascertain the contamination levels. The concentration of PAHs and PCBs were measured at two locations in the city of Mathura-Agra. Which covers industrial, roadside areas? The samples were extracted with n-hexane by ultrasonic agitation and analysis by GC. The average concentration of total PAHs and PCBs in all samples was 11.14 µg g^{-1},6.76 µg g^{-1} and 13.44 µg g^{-1},20.38 µg kg^{-1} ,12.91 µg $kg^{-1}$and 29.19 µg kg^{-1}. The maximum concentration of PAHs and PCBs were found to be in winter season.

ISCA-ISC-2012-04CS-36

Nature of Phytochemicals and Sugars from Medicinal plant of *Rauwolfia Serpentina* Benth. *(Sarpagandha)*

Singh R.B.
Department of Zoology, School of Life Sciences, Dr. B. R. Ambedkar University, Khandari Campus, Agra, UP, INDIA

Abstract: *Rauwolfia serpentina* Benth. plant belongs to family-Apocynaceae and commonly called as *Sarpagandha.* It occurs in Northern Himalayas, Eastern & Western Ghats, Nepal, Sikkim, Bhutan, Assam, Andaman Islands, Pakistan, Sri Lanka, Myanmar, China, Indonesia, Lao, Vietnam, Malaysia, Thailand, Java, etc. It is an erect, evergreen shrub about 15-45cm in height and found in moist deciduous forest. Seeds yielded a water soluble phytochemicals like polysaccharide as D-glucose and D-mannose in 1:2 molar ratio were identified by column and paper chromatography. It consumed 1.28 moles of iodine by iodometrically. Preliminary analysis of seeds polysaccharide had sulphated ash 0.864%, optical rotation $[á]_D^{25}$+29.4^{0}C (H_2O) for 40% and sulphated ash 0.428%, $[á]_D^{25}$+29.8^{0}C (H_2O) for 60%. These two fractions has identical homogeneous spetogram and did not reduce Fehling's solution. Nitrogen, sulphur, halogens, acetal groups, uronic acid and methoxyl groups were abscent but pentogens, pentoses and furfural were present in 1.10%, 0.86% and 0.72%. Since the rotation of parent polysaccharide is a low positive and anomeric linkage is predominantely of â-type possibly with few á-type linkages. Nature of linkages were also confirmed by Infrared Spectra (KBr) and absorption bands were recorded at 817cm^{-1} and 874cm^{-1} region. It indicated á-type linkages in D-glucose and D-mannose at non-reducing ends while â-type linkages with D-glucose and D-mannose residue in the main polymer chain of seeds polysaccharide. Derivative of D-mannose was prepared by usual manner as D-mannose phenyl hydrazone had m.p. 194-196^{0}C while D-glucose as D-glucose osazone had m.p. 202-204^{0}C. *Rauwolfia, Reserpine, Rescinnamine, Indole, Ajmaline and Ajmalicine* alkaloids extracted from roots are medically used in therapeutic agents both as antihypertensive and sedative. Alkaloids are also used for relief in various nervous system disorders, excitement, psychic problem, etc. Roots extract are also employed for the treatment of intestinal disorder, diarrhea, dysentery, anthalmintic, etc. Juice of leaves has been used as a remedy for opacity of the cornea. Seeds are also contain *Rauwolfia* alkaloids, fresh seeds are heavier than water which contain 0.20-0.30% alkaloids. Hindus used this plant for centuries as febrifuge and as an antidote to bite of poisonous snakes. Plant has been used as Ayurvedic system of medicine in India, medically product ranges are as Confide (Speman Forte), Lukol, Serpina, etc.

ISCA-ISC-2012-04CS-37

Medicinal Polymers

Patel H.S.
P.G. Dept. of Chemistry, Sardar Patel University, Vallabh Vidyanagar-388120, Gujarat, INDIA

Abstract: Synthesis of medicinal polymeric materials has bloomed during the past few decades because of their biocompatibility, process ability, sterilizability and biodegradability. Appealing physical and chemical properties of polymers make them promising materials for use as therapeutic agents, drug delivery systems and devices. Thus, utilities of functional polymers for pharmaceutical application have garnered significant attention in recent years. Many polymers have been developed to begin to meet the multifaceted demands for medical development. Polymers have been utilized as carriers for delivery of active pharmaceutical agents, proteins, antibodies, and plasmid DNA and RNA. Significant developments in the areas of polymeric delivery systems and polymeric pro-drugs to improve therapeutic indices of original drugs and biotherapies have resulted in a number of successful and marketed products. Applications of medicinal polymers include sutures, controlled drug release, and tissue engineering. Biodegradable polymers also could be implemented in drug delivery. The polymer slowly degrades into smaller fragments, releasing a natural product, and there is controlled ability to release a drug. The drug slowly releases as polymer degrades. Biodegradable polymers have been used to coat a stent and release drugs in a controlled way.

ISCA-ISC-2012-04CS-38

Molar Volume and Ultrasonic Studies of Dysprosium Laurate and Myristate in Non-Aqueous Medium

Sangeeta and Rawat M.K.
Department of Chemistry Agra College, Agra 282002, INDIA

Abstract: Ultrasonic velocity and density of Dysprosium laurate and myristate in methanol have been measured to evaluate various acoustic parameters and molar volume and to determine the Critical micelle concentration. The results showed that the Ultrasonic velocity , Specific acoustic impedance, Intermolecular free length and Adiabatic compressibility decreases with increase in soap concentration and chain length of the soaps. The results have been interpreted in terms of soap-solvent interaction.

ISCA-ISC-2012-04CS-39

A Comparative Study on Proximate Analysis Conducted on Medicinal Plants of Chhattisgarh, India

Nair Lethika D.[1], Sar Santosh K.[1], Arora Arun[2], Mahapatra Deepak[2]
[1]Department of Applied Chemistry, Bhilai Institute of Technology, Durg CG, INDIA
[2]Department of Mechanical Engineering, Bhilai Institute of Technology, Durg CG, INDIA

Abstract: The medicinal plants have become important in the global context today as it offer solutions to the major concerns of human mankind. This review gives a bird eye view on the proximate analysis of some medicinal plants of Chhattisgarh. The leaves of Tulsi (Oscimum sanctum) Neem(Azadirachta indica), Karanj (Millettia pinnata) and the leaves, stem, flowers and fruits of Kalmeg (Andrographis paniculata) were collected and taxonomically authenticated. These samples were dried in the sun, dried in the shade for a week and then subjected to proximate analysis such as extractive values, total ash , acid insoluble ash, sulphated ash, water soluble ash and loss on drying. The results were tabulated to show their difference in their qualities.

Keywords: Oscimum, Azardirachta, Milletia, Andrographis, proximate analysis.

ISCA-ISC-2012-04CS-40

Theoretical DFT Studies on the Dienophilic Behaviour of *n*-(2-Chlorophenyl)-2-Phenyl-*2h*-Azirine-3-Carboxamide

Sahu Vinita
Alliance College of Engineering and Design, Alliance University, Bangalore, Karnataka, INDIA

Abstract: Azirine derivatives are very important because of their versatile biological and chemical behavior. The chemistry of *2H*-azirines is dominated by the processes in which the strain of the three-membered ring system is relieved. They can act as nucleophiles, electrophiles, and also as dienophiles and diporalophiles in cycloaddition processes. They readily participate in cycloaddition reactions as 2p components. In this regards, to trail the behavior *N*-(2-chlorophenyl)-

2-phenyl-*2H*-azirine-3-carboxamide as dienophile in cycloaddition reaction with butadiene, we performed DFT studies using global and local electrophilicity descriptors. Global and local electrophlicity descriptors *viz.,* electrophilicity index *ù*, chemical potential *ì*, chemical softness *S*, chemical hardness *ç*, electophilic (f_k^+) & nucleophilic fukui (f_k^-) functions have been evaluated using the DFT method at the B3LYP/6-31G* level of theory. The findings were found to be quite useful for the prediction of Diels-Alder cycloaddition insights.

Keywords: DFT, Global and local electrophlicity descriptors, Azirine.

ISCA-ISC-2012-04CS-41

Growth, Optimization parameter and UV- Vis Studies on Gel grown Cadmium Tartrate single crystals

Patil N.S., Jain V.D. and Patil R.R.
Bhusawal Arts, Science and P.O. Nahata Commerce College, Bhusawal, INDIA

Abstract: Gel method is one of the simple and inexpensive methods to grow single crystals. Sodium metasilicate, tartaric acid and Cadmium chloride were used as starting materials in appropriate proportions. The observation indicated in this investigation were as given, the gel setting period required was 3 days, gel ageing period was 2 days and the time required to grow the crystals was only 30 days at room temperature. The grown crystals were characterized for the XRD and UV-Vis studies and the results are agrees with the theoretical standard results of the cadmium tartarate crystals.

Keywords: Cadmium Tartrate single crystals, Gel method, UV-Vis characterization.

ISCA-ISC-2012-04CS-42

An Efficient Synthesis of Heteroaryl Substituted Benzenes, Oxiranes and their Biological Evaluation as Antitubercular and Antifungal Agents

Jetti Srinivasa Rao and Jain Shubha
School of Studies in Chemistry and Biochemistry, Vikram University, Ujjain-456010, MP, INDIA

Abstract: A series of heteroaryl substituted benzenes and oxiranes were synthesized in a simple and efficient manner via cyclocondensation of vinylmalanonitriles, ethylvinylcyano acetates with heteroarylnitroolefines using DABCO and by epoxidation of Baylis-Hillman adducts respectively. The synthesized compounds were evaluated for their *invitro* anti tubercular, antibacterial and antifungal activities at various concentrations. General procedure for the synthesis of 2-amino-3-nitro-4-heteroaryl-benzonitriles To a mixture vinyl malononitrile (1 mmol) and heteroaryl nitroolefin (1 mmol) in CH_3CN (5 mL), DABCO (0.05 mmol) was added. The reaction mixture was stirred at reflux for 4 hrs. After completion of the reaction, EtOAc (15 mL) was added to dilute the reaction solution. Then, the mixture was washed with water and brine. The combined organic phases were dried and concentrated vacuum, and the residue was purified by column chromatography (hexanes:EtOAc) to afford product.General Procedure for the preparation of alkyl 2-(hydroxyl (1-heteroaryl) methyl) oxirane-2-carboxylate To a solution of titanium (1V) isopropoxide [Ti (Oi-Pr)$_4$] (2.5 mol) in CH_2Cl_2 (20 ml) at -15_C was added the solution of (+) - diethyl tartrate in CH_2Cl_2 (10 ml). The mixture was stirred for 10 min. A solution of Baylis–Hillman adduct (2.5 mol) in CH_2Cl_2 (10 ml) was added, followed by a solution of tert-butyl hydroperoxide (TBHP) (1.5 mol). The mixture was stirred at -15^{0}C for 2.5 to 7 h. To the reaction mixture, saturated Na_2SO_4 solution (5 ml) and diethylether (150 ml) were added and stirred at room temperature for 4 h. The mixture was filtered through a bed of silica gel (2 cm) and washed thoroughly with ether. To the combined filtrate, 10% aq. NaOH solution (10 ml) was added and the mixture was stirred for 15 min at 0^{0}C. The organic phase was washed with brine, dried ($MgSO_4$), and evoparated. The residue was purified by column chromatography (9:1 Hexanes: EtOAc) to give heteroaryl-substituted oxiranes. In conclusion we have developed a new and efficient method for the synthesis if heteroaryl substitutes benzenes, oxiranes. The compounds were characterized by IR, 1H NMR and Mass spectroscopy. The synthesized compounds have been shown to have good antitubercular and antifungal activity.

ISCA-ISC-2012-04CS-43

Charge Transfer Studies of the Molecular Association of PT $(No_2\text{-}ACAC)_2$ with Heterocyclic N-Bases

Kumari Om, Raghav Shailendra and Singh Surabhi
Department of Chemistry, K.K.P. G. College, Etawah 206001, Uttar Pradesh, INDIA

Abstract: Studies on charge transfer complexes of group VIII metal acetylacetates with heterocyclic N-bases has been carried out using infrared and proton magnetic resonance analysis. Due to complexation, the effect of stretching frequency of Pt $(NO_2\text{-acac})_{2,}$ have been studied and discussed for the site of interaction and tentative structure for these molecular complexes.
Keywords: Charge transfer complexes, Infrared, Proton magnetic resonance. Molecular complexes.

ISCA-ISC-2012-04CS-44

Phytoconstituents isolated from seeds of *Nigella sativa*

Mehta B.K.[1] and Gupta Meenal[2]
[1]School of Studies in Chemistry and Biochemistry, Vikram University, Ujjain 456010, MP, INDIA
[2]School of Engineering and technology, Vikram University, Ujjain 456010, MP, INDIA

Abstract: Phytochemical investigation of alcohol extract of seeds of *Nigella sativa* were isolated a new ethyl substituted glycoside, O-â-D-ethyl glucopyranosyl-(2'!4)-O-â-D-ethyl glucopyranosyl-(2'!4)- â-D-ethyl glucopyranoside (**1**) along with three new aliphatic compounds heptadecyl docosanoic acid (**2**), hexatetracontan -22-ol (**3**), 21-methyl pentacosa-6,15-dione (**4**) and one known compound 16-methyl heptadecanoic acid (**5**). The structural elucidation of the isolated compounds was based primarily on 1D- and 2D- NMR analysis, including COSY, HMBC and HMQC correlations. The alcohol extract shows significant antimicrobial activity as well as anti-inflammatory activity.
Keywords: *Nigella sativa* seeds, alcohol extract, Isolation, antimicrobial activity and anti-inflammatory activity.

ISCA-ISC-2012-04CS-45

Kinetic Behavior of Photo Catalysts

Singh Bhoopendra, Afridi Azrabegam and Kumar Vikesh
Department of Chemistry, K.K.P.G. College, Etawah 206001, UP, INDIA

Abstract: The photo catalytic degradation of methyl blue dye, over TiO_2 and ZnO were carried out in the presence of light to observe good semi conducting property. The photo catalytic degradation of methyl blue was observed in the presence of both photo catalysts. Parameters like amount, band gap, intensity, sensitizer etc were also studied. Studies show that TiO_2 shows more photo catalytic activity than ZnO

ISCA-ISC-2012-04CS-46

Chemical Constituents from bark of *Euonymus tingen* (Celastraceae)

Sati S.C., Sati Maneesha D., Bahuguna Raman and Sharma Amita
Department of Chemistry, H.N.B.Garhwal University (A Central University) Srinagar, 246174, Uttarakhand, INDIA

Abstract: Quaillic acid (1) and 6-hydroxy 5-methyl 3',4',5'-trimethoxy aurone 4-O-á-L-rhamnopyranoside (2) were isolated from bark of *Euonymus tingen*. The structures of these compounds were characterized by means of chemical and spectral methods including advanced 2D NMR studies. These compounds were first time isolated from this species.
Keywords: *Euonyus tingen*, Celastraceae, quaillic acid, aurone

ISCA-ISC-2012-04CS-47

Phytochemical studies from the roots and leaves of *Withania somnifera* Dunal (*Ashwagandha*) plant

Singh R.B.[1], Prakash Ravi[2] and Raghav Shailendra[3]
1Dept. of Zoology, School of Life Sci., Dr. B.R. Ambedkar University, Khandari Campus, Agra, UP, INDIA
[2]Department of Chemistry, B.S.A. College, Mathura-281004, UP, INDIA
[3]Department of Chemistry, K.K.P.G. College, Etawah-206001, UP, INDIA

Abstract: *Withania somnifera* Dunal plant belongs to the family – Solanaceae and commonly called as *Ashwagandha*, upto 30-170cm in height. It occurs in Northern India, Pakistan, Bangladesh, Java, Vietnam, Thailand, Malaysia, Europe,

Sri Lanka, African & Asian Tropics. Plant is used in Ayurvedic system of medicine and widely used in the treatment of tuberculosis, rheumatism, rejuvenative effect on the body improvement, vitality and aid recovery after chronic illness. *Ashwagandha* plant has many significant benefits and is best known for its powerful adaptogenic properties. Present investigation mainly deals with the phytochemical studies from the roots and leaves of *Ashwagandha* plant. The major bioactive constituents of *Ashwagandha* root are a group of steroidal lactone known as Withanolids which exist in free form as Withanone, Withaferin-A, Withanolide-A, Withanolides-D-M, Withanolides-I-III and Glycosidic form as Withanosides-I-VI. Other constituent includes alkaloids as Cuscohygrine, Anahygrine, Tropine, Pseudotropine, Anaferin, Isopelltrine, 3-Tropyltigloate and Acylsterylglucosides as Sitoindoside VII & VIII. Medically the phytochemicals are used for health restorative, leucoderma, depression, anticancer, antioxidant, etc. Various chemical tests like GLC, TLC, paper, column chromatography, fluorescence behavior, total ash, acid insoluble, sulphated ash, water and alcoholic soluble extract were carried out from roots and leaves powder to study the phytochemical studies from *Ashwagandha* plant.

ISCA-ISC-2012-04CS-48

Use of Photo-Fenton Reagent in the Degradation of Basic Yellow 2 in Aqueous Medium

Kumar Dileep and Ameta Rameshwar*
Pacific College of Basic and Applied Sciences, Pacific University, Udaipur-313024 (Raj.), INDIA

Abstract: This study was conducted to assess the removal efficiency of Basic Yellow 2 (a dye) from aqueous medium using the photo- Fenton process. Fenton's reagent, a mixture of hydrogen peroxide (H_2O_2) and ferric ions (Fe^{3+}), used to generate hydroxyl radicals (•OH), was used to attack the target contaminant and degrade it. A visible light source was used to provide the radiation needed in the photo-Fenton method (*i.e.* H_2O_2 /Fe^{3+}). The effects of varying the parameters of ferric ion, Basic Yellow 2 and hydrogen peroxide concentrations, as well as pH, and light intensity on the reaction rate were determined. More effective and faster than Fenton's reagent in removing Basic Yellow 2, the results show that the photo-Fenton method completely oxidizes and degrades Basic Yellow 2 into CO_2 and H_2O. A tentative mechanism for photobleaching of the dye is proposed.

Keywords: Photochemical degradation, solar photo-Fenton, Basic Yellow 2, AOPs, Photobleaching.

ISCA-ISC-2012-04CS-49

Indigenous Knowledge and Intellectual Property Rights

Joshi Bipin Chandra
Natural Product Laboratory, Department of Chemistry, LSM Govt P.G. College, Pithoragarh, Uttarakhand 262502, INDIA

Abstract: Indigenous knowledge is the information that is held and used by indigenous people in a given community, based on past experience, intellectual persuasion, observation and adaptation to a local culture and environment, has developed over time, and continues to develop. This knowledge is the basic of our sustainability. This includes mental inventories of local biological resources, animal breeds, and local plant, crop and tree species. The developed countries are not rich in indigenous knowledge but are better equipped in research and development. They use the indigenous knowledge resources accessed from the developing countries. As a result, there is a beginning in the unprotected flow of indigenous knowledge information from the developing countries to the capital-rich west, and a protected flow in the reverse direction mainly through patents and intellectual property rights (IPR). It has both visible and invisible impacts. There is an adequate and growing evidence of indigenous knowledge and associated practices contributing significantly to the conservation and enhancement of biodiversity. Local people embodying indigenous lifestyles and knowledge have devised and deploy various technologies to conserve the environment. This indigenous knowledge can be used to sustain the community and its culture and to maintain the genetic resources necessary for the continued survival of the community.

ISCA-ISC-2012-04CS-50

Synthesis, Characterization and Dyeing performance of 2-Amino-4- (3-Nitro phenyl) Thiazole Based bisazo Disperse Dyes

Patel Sandip K. and Malik G.M.
Department of Chemistry, Navyug Science College, Surat, Gujarat, INDIA

Abstract: In present study number of substituted Bisazo disperse dyes 2-(1'-Substituted phenyl azo)-4-(3''-Nitro phenyl)-5-(2''', 4'''-dinitro phenyl azo) thiazole derivative have been synthesized using substituted 3æ%-amino, 2-amino -4-(3-nitro phenyl) thiazole and 2,4-dinitro aniline and were characterized using NMR and IR spectra. Their dyeing performance

on polyester fiber, the fastness properties of these dyes were evaluated by applying them to polyester fiber.

Keywords: 2-Amino-4-(3-Nitro phenyl) thiazole, 2, 4-dinitro aniline ,substituted 3æ%-amine, disperse dyeing performances, NMR, IR Spectra.

ISCA-ISC-2012-04CS-51

A Chromium(III) ion Selective PVC Membrane Electrode Based on a Schiff base Ligand, 3-Aminoacetophenonethiosemicarbazone

Chandra Sulekh*, Tomar Praveen Kumar, Kumar Avdhesh and Malik Amrita
Department of Chemistry, Zakir Husain College (University of Delhi) J.L. Nehru Marg, New Delhi-110002, INDIA

Abstract: An attempt has been made to develop a highly selective Cr^{3+}-ion selective PVC membrane electrode based on a 5% newly synthesized 3-aminoacetophenonethiosemi-carbazone as an ionophore with 62% DBP, 30% PVC and 3% NaTPB as an anion excluder. The electrode exhibits a near Nernstian potential response of 19.7 ± 0.2 mV per decade over a wide concentration range (1.0×10^{-8} M to 1.0×10^{-1} M) with a detection limit of 7.4×10^{-8} between pH 1.5-6.8 with a fast response time (10s). The selectivity coefficient values were determined by matched potential method (MPM), indicate higher selectivity for chromium(III) ion with improved performance as compared to other carriers reported earlier. The proposed electrode exhibits an adequate shelf life (14 weeks) without any considerable divergence in potentials. Further the electrode was also successfully applied to determine the content of chromium in water samples collected from different sites of river Yamuna in Delhi.

Keywords- Ion-selective electrode, PVC membrane, Potentiometry, 3-Aminoacetophenone -thiosemicarbazone.

ISCA-ISC-2012-04CS-52

Corrosion Inhibition Studies on Iron in Acetic Acid Solutions with Aqueous Extract of Fenugreek Seeds

Singh Alka and Kalpana S.
Electrochemistry and Environmental Chemistry Laboratory Department of Chemistry, Government College, Kota, Raj., INDIA

Abstract: Corrosion inhibition effect of aqueous extract of Fenugreek seeds on iron in 1 M acetic acid has been studied applying gravimetric method between 303K and 333K.The ihhibition efficiency increased with increase in concentration of plant extract within the studied range.The corrosion rate increased with increase in temperature and decreased with increase in concentration of inhibitor.The adsorption of inhibitor on iron surface has been found to obey Langmuir adsorption isotherm. Kinetic parameters for the adsorption of this inhibitor on the metal surface are calculated using the Arrhenius equation and the inhibition efficiency is observed 75.75% in presence of 10% aqueous extract of Fenugreek seeds at 303K. The Aqueous extract of Fenugreek seeds is observed as a good corrosion inhibitor in acetic acid solutions at experimental conditions.

ISCA-ISC-2012-04CS-53

The role of Thermal Phenomenon in Surface Modification of Poly (ethylene terephthalate) film using KrF laser radiation below Ablation threshold

Arzare Sapna
Associate Professor, Shri Dadaji Institute of Science and Technology , Khandwa, MP, INDIA

Abstract : Thermal phenomenon during surface modification of poly(ethylene terephthalate) film by KrF excimer laser (248nm) were studied using fundamental relations and a thermal analysis code . Due to the pulsed nature of the radiation having pulse duration of 20 ns and a high peak power, it was recognized that two different thermal effects were taking place. High peak power resulted in temperature rise of several hundreds of degree centigrade for a short duration. Its decay during 1.5 s time between successive pulses caused an increase in the average temperature of the irradiated spot, The wetting character of the irradiated spot was studied by contact angle measurement and the morphology was investigated by imaging via atomic force microscope (AFM). Contact angle decreased from an initial value of 80^0 to 38^0 and a periodic structure was observed on the surface. In addition; the film did not shows any visual damage and retain its transparency to a good extent compared to complete loss of transparency when the laser fluence was above the ablation threshold. Thus the advantages of working at fluence values below the ablation threshold was brought out.

Keywords: PET, KrF Excimer radiation, AFM.

ISCA-ISC-2012-04CS-54

Electrochemical and Spectroscopic Studies of Corrosion Inhibition of Carbon Steel using a Formulation containing Phosphonate, Zinc ions and Uric Acid

D. Sarada Kalyani[1], Rao S. Srinivasa[1,*] and M. Sarath Babu[2]
[1]Department of Chemistry, V.R. Siddhartha Engineering College, Vijayawada, AP, INDIA
[2]Department of Chemistry, MIC College of Technology, Kanchikacherla, Vijayawada, AP, INDIA

Abstract: Corrosion inhibition of carbon steel in low chloride aqueous environment using a ternary inhibitor formulation containing nitrilotris(methylenephosphonic acid), zinc ions and uric acid is studied by electrochemical and spectroscopic studies. Potentiodynamic polarization studies showed that the formulation acts as a mixed type inhibitor. Impedance studies indicated that there is significant modification of metal/solution interface in presence of the inhibitor formulation. A large increase in charge transfer resistance and decrease in constant phase element showed that there is formation of a protective film on the metal surface. UV-visible spectroscopic studies of various inhibitor components in solution inferred the involvement of inhibitor molecules in complex formation. Reflection absorption FTIR spectral analysis also supported the involvement of inhibitor molecules in complex formation and showed the presence of zinc hydroxide and small quantities of oxides/hydroxides of iron in the surface protective film. Scanning electron microscopic images of inhibited and uninhibited surfaces indicated the formation of a surface film on the metal in presence of the inhibitor formulation. Based on all these results, a plausible mechanism of corrosion inhibition is proposed.
Keywords: Electrochemical studies; Phosphonate; Uric acid; Corrosion inhibition; Carbon steel

ISCA-ISC-2012-04CS-55

Uric Acid as a New Synergist to a Phosphonate based Inhibitor Formulation for Corrosion Control of Carbon Steel

D. Sarada Kalyani[1], S. Srinivasa Rao[1] and M. Sarath Babu[2]
[1]Department of Chemistry, V. R. Siddhartha Engineering College, Vijayawada, AP, INDIA
[2]Department of Chemistry, MIC College of Technology, Kanchikacherla, Vijayawada, AP, INDIA

Abstract: Uric acid (UA) is introduced as a new synergist to nitrilotris(methylenephosphonic acid) (NTMP) and Zn^{2+} for corrosion inhibition of carbon steel in low chloride aqueous environment. In presence of uric acid, the required minimum concentrations of both NTMP and Zn^{2+} for an effective inhibition are found to be low. Minimum dosage of Zn^{2+} for the maintenance of the protective film is found to be only 10 ppm. The new ternary formulation is effective as corrosion inhibitor in the pH range of 5 to 9. The protective film formed by the inhibitor formulation is stable for longer immersion periods. The results of gravimetric studies indicated that the new ternary inhibitor formulation is effective in both static as well as hydrodynamic conditions. These studies show that there exists an excellent synergism among all the inhibitor components in the protection of carbon steel from corrosion. The new ternary formulation, NTMP-Zn^{2+}-UA, is an effective corrosion inhibitor at relatively low concentrations of both NTMP and Zn^{2+}. Thus, the inhibitor formulation is more environmentally friendly.
Keywords: Synergism; Gravimetric studies; Corrosion inhibition; Carbon steel; Uric acid

ISCA-ISC-2012-04CS-56

Adsorptive Desulfurisation of Feed Diesel on Low Cost Activated Carbon prepared by Chemical Impregnation of Agricultural Waste

Ahmed Md. Juned Khannam and Ahmaruzzaman M.
Department of Chemistry, National Institute of Technology Silchar, Silchar-788010, INDIA

Abstract: This study reports the usage of laboratory prepared activated carbon from agricultural waste (chemically impregnated with phosphoric acid at 873 K) as a low cost adsorbent for the desulfurisation of feed diesel. The characterisation of the developed activated carbon was focused on quantitative analysis (Proximate, Ultimate, Elemental, and BET Surface area), qualitative analysis (FTIR), and optical analysis (SEM) in order to understand the adsorbent-adsorbate retention as well as interpretation of experimental results. Batch experiments with feed diesel (20 mL) having a total sulfur concentration of 2050 $mg.L^{-1}$ were conducted and the various operating parameters on adsorption such as adsorbent dose, temperature, and contact time were monitored, and optimal experimental conditions were determined. Optimum adsorbent dose was found to be 1 g and the adsorption process reached equilibrium in 3 h. The adsorption of sulfur onto activated carbon at

optimum temperature 293 K is controlled by external mass transfer (diffusion into mesopores) followed by a gradual adsorption stage with intra-particle diffusion in micropores dominating. Freundlich adsorption isotherm best represented the equilibrium adsorption data. The total cost of preparation of the activated carbon was USD 7.24 per kg which is very less in comparison to the cost of commercial activated carbon. These results clearly proved the feasibility of the developed low cost adsorbent as a good candidate for the desulfurization of feed diesel.
Keywords: Agricultural Waste, Activated Carbon, Desulfurization, Feed diesel, Adsorption.

ISCA-ISC-2012-04CS-57

Microwave Assisted Synthesis, Characterization and Biological Evaluation of some Novel Chalcones of Methylisoxazole-4-carbonyl chloride

Mourya Manish*, Mehta B.K. and Mehta Darshana
School of studies in Chemistry and Biochemistry, Vikram University, Ujjain 456010, INDIA

Abstract: The drug design and discovery using environmentally benign methodologies is the challenging need of pharmaceutical industries and chemical research laboratories. More emphasis has been given to the methodology of synthesis due to increasing environ mental and economic constrains. Microwave irradiation has offered unique advantages over conventional means. Green chemistry includes environmentally benign reactions, which prevents pollution and reduces environmental and health hazards. The target compounds have been prepared by reaction of substituted synthesized isoxazoles with acetophenones, yielding chalcones under solvent free and MWI techniques. Chalcones have been reported to possess a wide range of pharmacological activities such as antibacterial ,antifungal , antimicrobial , anti inflammatory etc The newly synthesized compounds have been characterized on the basis of their IR , NMR , and Mass spectral data. All the synthesized compounds have been screened for antibacterial and antifungal activity.
Keywords: Microwave assisted synthesis, Chalcones derivatives, and green chemistry.

ISCA-ISC-2012-04CS-58

Biocidal Activity of Polyurethane Polymers Surface Modifiers over Wood

Songara Kunjan Singh[1] and Jain Anamika[2]
[1]Department of Chemistry, Maharaja Bhoj Govt. P.G. College Dhar, MP, INDIA
[2]Department of Chemistry, Mata Jigabai Govt. Post Graduate Girls'College Indore, MP, INDIA

Abstract: Macromolecular systems, due their properties, allow one to efficiently use them in various fields, including the creation of polymers with the antimicrobial activity. In the past decade, the intensive development of a large class of antimicrobial macromolecular systems, polymers, and copolymers, either quaternized or functionalized with bioactive groups, has been continued, and they have been successfully used as biocides. Surface contamination in a nosocomial environment with pathogenic organisms is of concern as such surfaces are vectors for spreading pathogens and affecting those who are most vulnerable to infection. Contact biocidal coatings that do not release biocide include polymers functionalized with quaternized "quat" alkyl amines polymers designed to mimic naturally antimicrobial peptides, and those incorporating hydantoin moiety. Our goal is to develop a polymeric surface modifier (PSM) approach to antimicrobial coatings. This approach involves creating new surface-active antimicrobial soft blocks and using these soft blocks to make contact-biocidal polyurethanes. The PSM polyurethane is added to conventional polyurethanes and surface properties are assessed.
Keywords Antimicrobial activity. Surface modifier. Contact-biocidal coatings. Bioactive groups. Antimicrobial peptides.

ISCA-ISC-2012-04CS-59

A study of Catalytic effect and Premiceller Catalysis on the Surfactant catalysed Oxidation of some Amino acids by Acidic permanganate

Bende N.
Department of Chemisrty, Govt. Holkar Autonomous Science College, Indore-17, MP, INDIA

Abstract: A kinetic study of oxidation of amino acids i.e. glycine, L-Alanine,L-Valine and L-Leucine has been done in the presence of surfactant i.e. sodium lauryl sulphate(NaLS) and sulphuric acid by potassium permanganate. A Kinetic investigation of oxidation of amino acids by acidic permanganate has been carried out spectrophotometrically. The reaction is reported as linear double stage process, first stage is followed by second fast stage.The surfactant used in the reaction is an anionic surfactant. Its catalytic effect on the rate of reaction has been observed carefully. Premiceller catalysis of the reaction is also studied on each amino acids.
Keywords: spectrophotometer, surfactant, amino acids.

ISCA-ISC-2012-04CS-60

Pt(II) and Pd(II) Metal Complexes of a Potentially Therapeutic Drug – Synthesis, Characterization and Biological Evaluation

Malik Suman[1], Thirumagal B.[1], Das Supriya[1] and Kushwah Ram Kumar[2]
[1]Department of Chemistry, Sadhu Vaswani College Bairagarh, Bhopal, INDIA
[2]Department of Chemistry, Millenium Institute of Technology and Science, Neelbad, Bhopal, INDIA

Abstract: Compounds containing imine bases have not only extensive applications in organic synthesis, but several of these molecules display significant biological activity. Schiff bases form a significant class of compounds in medicinal and pharmaceutical chemistry with several biological applications that include antibacterial, antifungal and antitumor activity. They have been studied extensively as a class of ligands and are known to coordinate with metal ions through the azomethine nitrogen atom. The metal complexes of Pt(II) and Pd(II) of the type ML_2 (where M = Pt(II), Pd(II) and L = Schiff base of Cephalexin) have been prepared via Schiff base, obtained by the condensation of cephalexin with salicylaldehyde. They form 2:1 ligand to metal complexes with Pt(II) and Pd(II) , as indicated by conductometric titrations. The molar conductance values of the complexes value range between (0.25-0.50 ohm^{-1} cm^2 mol^{-1}) of the complexes which was carried out in DMF solvent indicating that the complexes are non-electrolytic in nature. The complexes have been characterized by various physico-chemical techniques such as elemental analysis, conductivity measurements and spectral studies including IR, ^{1}HNMR, UV, magnetic susceptibility, ESR, TGA, XRD, SEM and mass spectral studies. The spectroscopic results show the involvement of azomethine nitrogen atom and OH groups in coordination to the central metal ion. Based on spectral studies, square planar geometry has been proposed for both the complexes. The ligand and its complex were tested for their antibacterial and antifungal activities. It is observed that the complexes are better bactericidal agents than the parent drug.
Keywords: Cephalexin, Schiff base, Complexes, Conductometry, Spectra.

ISCA-ISC-2012-04CS-61

Synthesis, Characterization and Biological Evolution of Various Novel Heterocyclic Compounds of Hydantoin and Piprazine

Mistry Priyank P. and Desai Vikas A.
BKM Science College, Valsad, 396001, INDIA

Abstract: In the present article we have prepared novel 3,5 substituted imidazolidine-2,4-dione via Mannich reaction between piperazine derivatives and hydantoin derivatives. For all compounds NOE (Nuclear Overhauser Effect) NMR spectra were measured in order to prove additionally the position of the substituents in the imidazolidine-2,4-dione ring. Some physiochemical and electronic properties of the compounds were determined in order to establish the similarity between the synthesized and reference compounds. All the compounds were also characterized by ^{13}C NMR, FT-IR and LC/MS mass spectrum. All the newly synthesized compounds were screened for their in vitro antimicrobial activity and many of them found to show comparable activity to the standard drug with different microorganisms.
Keywords: Hydantoin; Piprazine; Mannich Reaction; Antimicrobial Activity.

ISCA-ISC-2012-04CS-62

Annealing of radio manganese in $KMnO_4$ and in mixed crystals of $KMnO_4$ with $KClO_4$, $KReO_4$ and KBF_4

Dilesh Indorkar, O.P. Chourasia and S.N. Limaye
Department of Chemistry, Dr. H. S. Gour Central University, Sagar M.P. 470003, INDIA

Abstract: The influence of recoil energy, ionizing radiation and crystal composition, on the retention and on the thermal annealing of radiomanganese in $KMnO_4$ is studied. It is reported, that the recoil energy is of no great influence. In pure $KMnO_4$ two annealing processes can be distinguished, one with a relatively low energy of activation leading to MnO_4'' as a result of oxygen transfer, and one with a higher energy of activation comprizing the reaction of recoil manganese with its former oxygen ligands. The second process can be suppressed by ionizing radiation and by fast neutron irradiation. The increase of the retention in mixed crystals with $KClO_4$ and $KReO_4$ is tentatively ascribed to the tendency to form species which have structures which are as similar as possible to that of the host matrix.

ISCA-ISC-2012-04CS-63

Synthesis Imidazolidine (tetrahydroimidazole) of Heterocyclic and Introduction

Indorkar Dilesh, Chourasia O.P. and Limaye S.N.
Department of Chemistry, Dr. H.S. Gour Central University, Sagar, MP, INDIA

Abstract: Aromatic Heterocyclic chemistry is an enormous and complex subject of great industrial and academic significance. A number of molecules of life are derived from aromatic heterocycles and many pharmaceutical and agrochemical compounds are based on aromatic Heterocyclics. Consequently, the importance of aromatic chemistry has stimulated a vast amount of synthetic and theoritical work in the area.A cyclic aromatic compound containing all carbon atoms in ring formation is referred to as a carbocylic compound. If at least one atom other than carbon form a part of ring system then it is designated as a heterocyclic compound.The original research papers in heterocyclic chemistry published before 1982 constituted about 40 % of organic chemistry[2]. The number has increased to more than 60% in 1998.The explosive growth is even greater when one considers research with heterocyclic compounds published in bioorganic, biophysical, pharmaceutical, optics, material science , electronics and medicinal journals among others. The literature of the subject is correspondingly vast and of the three major division of organic chemistry such as aliphatic, carbocyclic and heterocyclic the last one is the biggest, nearly 20 million chemical compounds identified by the end of the second millennium more than two thirds are fully or partially aromatic and approximately half the heterocyclic.
Keyword: oxazole, imidazolidine, heterocyclic.

ISCA-ISC-2012-04CS-64

A Fast and Rapid Electrochemical Method for Determination of Caffeine in Different Tea Samples

Rajawat Deepak Singh[1], Kardam Abhishek[2], Srivastava M.M.[2] and Satsangee Soami P.[1]
[1]USIC, Remote Instrumentation Lab, Dayalbagh Educational Institute, Agra–282110, INDIA
[2]Department of Chemistry, Faculty of Science, Dayalbagh Educational Institute, INDIA

Abstract: Present paper describes the isolation of Caffeine (1,3,5-trimethylxanthine), a mild addicting drug from tea and its determination (black). Electrochemical determination of caffeine was done using cyclic voltammetry and differential pulse voltammetry in anodic direction. Different parameters affecting the sensitivity of determination such as pH of supporting electrolyte, scan rate and concentration of supporting electrolyte was optimized. Electrochemical determination of caffeine was carried out in tea different ways. Isolation of caffeine from black tea was done by liquid liquid extraction using chloroform as an extracting solvent. In first procedure caffeine was extracted from tea and the amount was measured. Similar amount of black tea was stirred in water for an hour. This water is used as sample for the determination of amount of caffeine. The results obtained from both procedures are same. This describes the applicability of the electrochemical determination which reduces the extraction step. This method represents differential pulse voltammetry as a simple, fast and rapid method for the determination of caffeine in different tea samples.
Keywords: Cyclic voltammetry; Differential pulse voltammetry, Caffeine;Glassy carbon electrode, tea, electrochemical determination.

ISCA-ISC-2012-04CS-65

Distillery Waste water Treatment using *Moringa Oleifera* As a Natural Coagulant

Dubey Savita and Dixit Deepa
Department of Chemical Engineering, IES IPS Academy Indore, MP, INDIA

Abstract: Effluent from distillery contains a large amount of dissolve organic matter this organic matter is readily decomposed by biological action; consequently its discharge into surface water causes serious damage to aquatic life in the stream. Turbidity imparts a great problem in distillery waste water treatment. *Moringa oleifera, Cicer arietinum* and *Dolichos lablab* was used as locally available natural coagulants .An indigenous water treatment method uses *Moringa oleifera* seeds in the form of a water-soluble extract in suspension, resulting in an effective natural clarification agent for highly turbid and untreated pathogenic surface water. Application of this low-cost *Moringa Oleifera* protocol is recommended for simplified, point-of-use, low-risk water treatment where rural and peri-urban people living in extreme poverty are presently drinking highly turbid and microbiologically contaminated water. Moringa Oleifera seed extract has been tested in removing surfactants from polluted surface water. Using locally available natural coagulants, suitable, easier and environment friendly options for water treatment was observed.
Keywords: Distillery Waste Water, *Moringa Oleifera*, Surfactants, Coagulation, Natural Coagulants.

ISCA-ISC-2012-04CS-66

Volumetric and Viscometric Study of Sodium Sulphate in Aqueous Solution of Glucose at Different Temperatures

Khanuja Parvinder[1], Chourey V.R.[2] and Ansari A.A.[3]
[1]Department of Chemistry S.N.P. G. College, Khandwa, MP, INDIA
[2]Department of Chemistry Holkar Science College, Indore, MP, INDIA
[3]Department of Chemistry, I.K.D. College, Indore, MP, INDIA

Abstract: Density and viscosity measurements were performed for sodium sulphate in 0.20 M aqueous glucose at 293.15, 303.15 and 313.15 K. The measured values of density and viscosity were used to estimate some important parameters, such as the partial molar volume, the partial molar volume of transfer, partial molar compressibility, viscosity *B*-coefficient etc. These parameters were interpreted in terms of solute–solute and solute–solvent interactions. Structure making and breaking capacity of sodium sulphate in aqueous glucose may be interpreted with the help of Hepler's reasoning and (dB/dT) coefficient.

Keywords: density, viscosity, viscosity *B*-coefficient, solute–solvent interactions.

ISCA-ISC-2012-04CS-67

Photochemical Studies of Photo sensitizer for Generation of Electrical Energy in PhotogalvanicCell

Chandra Mahesh[1] and Meena R.C.[2]
[1]Department of Chemistry, Deshbandhu College, New Dehli-110019, INDIA
[2]Department of Chemistry, Jai Narain Vyas University, Jodhpur Rajasthan 342 005, INDIA

Abstract: Photo sensitizer used for solar energy conversion and storage: The conversion of solar energy on the basis of photo galvanic effect in solar cell. Photo galvanic effect has been studied in system that contains photo sensitizer and as reducing agent. The current-voltage relations of the cell have been measured in the dark and light under both forward and reverse bases. The photo potential and photocurrent generated were 980.0 mV and 220 μ A, respectively. The experimental conversion efficiency was 0.1229% and the maximum power of cell was 82.20W. The storage capacity of the cell was 82.0 minutes in dark. The effect of different parameters on electrical output of the solar cell was observed and the conversion of solar energy in photo galvanic cell.

Keywords: Photo potential, Photocurrent, Fill factor, Conversion efficiency, Power point, Storage Capacity.

ISCA-ISC-2012-04CS-68

Polyvinyl alcohol–Alginate bound Fe_3O_4 Magnetic Nanoparticles as Adsorbent for Removal of Copper (II) Ions from Aqueous Systems

Tiwari Alka and Kathane Prerna
Research Centre, Department of Chemistry, Government V.Y.T. PG Autonomous College Durg, (Chhattisgarh), INDIA

Abstract: The batch removal of Copper (II) ions from dilute aqueous solution using Polyvinyl alcohol - Alginate bound Fe_3O_4 Magnetic Nanoparticles as the adsorbent has been reported. The above adsorbent was characterized by X-ray diffraction (XRD), Transmission Electron Microscopy (TEM) and Fourier Transform Infrared Spectroscopy (FTIR). On the surface of the prepared microspheres various static and dynamic adsorption studies were performed with Copper (II) ions at fixed pH and ionic strength. The adsorption data were applied to Langmuir, Freundlich and Tempkin isotherm equations and the dynamic nature of adsorption was quantified in terms of several kinetic constants such as rate constant for adsorption(K_L) and Lagergreen rate constant (K_{ad}). The influence of various experimental parameters like initial pH, time, temperature, solid – liquid ratio and salt effect were investigated on the adsorption of Copper (II) ions.

Keywords: Magnetic nanoparticles, Adsorption isotherm, Polyvinyl alcohol–Alginate, Sorption.

ISCA-ISC-2012-04CS-69

Lipid Constituents from the Leaves of Artabotrys Odoratissimus

Kori Pramila
Department of Chemistry, Govt. Holkar Science College, Indore, MP, INDIA

Abstract: Four aliphatic compounds have been isolated from the hexame extract of Artobotrys odoratissimus (leaves) and identified as. Butanone-3-undecanyl icosonoate (1), Hexadecanyl hexadecanote (2) 1-carboxy-nonayl pentadecanote

(3) and octylpentaicosanoate (4) on the basis of using IR, ^{1}HNMR, ^{13}CNMR, EIMS and chemical evidences. These are Novel compounds being reported first time by us.

Keywords : Artabotrys odoratissimus, leaves, Annonaceae, aliphatic. Artabotrys odoratissimus.

ISCA-ISC-2012-04CS-70

Preparation and Characterization of RE: YAG Nanocrystals

Kaithwas N.[1], Dave M.[1], Kar S.[2] and Bartwal K.S.[2]
[1]Holkar Science College, Indore, MP, INDIA
[2]Laser Materials Development & Devices Division, Raja Ramanna Centre for Advanced Technology, Indore, MP, INDIA

Abstract : Yttrium aluminum garnet (YAG) is an extensively used solid-state laser host material. In the present work, RE doped YAG nanocrystals were synthesized by low temperature glycol route technique. This method consists of a mixture of nitrates in an aqueous media. Single phase YAG nanocrystalline material obtained at 850 ^{0}C. This temperature is much lower compared to other similar techniques used for preparing nanoparticles. RE doping concentration was optimized and kept 1 atm% in the present work. The doped material so formed was annealed at different temperatures. The prepared nanocrystals were characterized by XRD, SEM , TEM, EDAX and FTIR techniques to establish the size and structure.

ISCA-ISC-2012-04CS-71

Study of Interactions of Tryptophan through Acoustic and Thermodynamic Properties

Malasane P.R.
Department of First Year Engineering, College of Engineering and Technology, Amravati, MS, INDIA

Abstract: Molecular interactions of Tryptophan (an essential amino acid) in the presence of essential metal ions like Zn^{2+} and Co^{2+} at 303.15K have been studied by using ultrasonic interferometer supplied by M/s Mittal Enterprises, New Delhi, operating at a frequency of 2 MHz. and a bicapillary pyknometer to measure the density of solution. The data is processed to obtain the various acoustic and thermodynamic parameters(1) to study the molecular interactions in aqueous solutions. The values of apparent molar volume, apparent molar compressibility, partial molar volume, partial molar compressibility, specific acoustic impedance, relative association, intermolecular free length have been calculated by using standard mathematical relations. The concentration dependences of the density and ultrasonic velocity were tried to fit into linear and polynomial equations(2). It is interesting to see the associative interaction among the molecules and ions as well as the increase in the stacking interactions between the metal ions and tryptophan.

Keywords: Interactions, biomolecules, ultrasonic, molar volume, compressibility.

ISCA-ISC-2012-04CS-72

Inhibitive Effect of Some Schiff bases on Corrosion of Mild Steel in Hydrochloric Acid Solution

Sahu S.[1], Arora S.K.[2], Mathur S.P.[3] and Mangal A.[1]
[1]Department of Chemistry, Govt. Engineering College Ajmer, INDIA
[2]Material Research Laboratories, Govt. College Ajmer, INDIA

Abstract: Mass loss method and thermometric methods have been employed to study the corrosion inhibition of Mild steel in acidic media (HCl)**.** Three Schiff's bases viz; N(vanillidine)-4-methyl-1-phenylimine(SB_1),N(vanillidine)-4-methoxy-1-phenylimine(SB_2),N(anisidine)-1-napthylimine(SB_3).Values of inhibition efficiency obtained from two methods are in good agreement and dependent upon the concentration from the mass loss data, it is concluded that the inhibition efficiency increases with the increase in concentration of inhibitor.

Keywords: corrosion inhibition, weight loss method, thermometric method, mild steel correlation.

ISCA-ISC-2012-04CS-73

Corrosion Inhibition Eficiency of some Schiff's bases on Mild Steel in Acid Media

Sahu Suresh[1], Arora S.K.[2] and Mathur S.P.[2]
[1]Department of Chemistry, Govt. Engineering College Ajmer, INDIA
[2]Material Research Laboratories, Govt. College Ajmer, INDIA

Abstract: Mass loss method and thermometric methods have been employed to study the corrosion inhibition of Mild steel in acidic media (HCl)**.** Three Schiff's bases viz; N(vanillidine)-4-methyl-1-phenylimine(SB_1),N(vanillidine)-4-methoxy-1-phenylimine(SB_2),N(anisidine)-1-napthylimine(SB_3).Values of inhibition efficiency obtained from two

methods are in good agreement and dependent upon the concentration from the mass loss data, it is concluded that the inhibition efficiency increases with the increase in concentration of inhibitor.

Keywords: corrosion inhibition, mass loss method, thermometric method, inhibition efficiency.

ISCA-ISC-2012-04CS-74

A Study of Acoustical Properties of Hyberdised Drug Molecules Synthesized from Isoniazid at 300.15K in aqueous 70% DMF

Chapke U.D.[1], Meshram B.P.[2], Agrawal P.S.[2] and Berad B.N.[1]
[1]PG Teaching Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, MS, INDIA
[2]Department of Chemistry,Hislop College, Nagpur, MS, INDIA

Abstract: The density (r), viscosity (h) and speed of sound (u) data of hyberdised drugs synthesized from Isoniazid in 70% DMF Solution within the concentration range 0.001M to 0.005M at 300.15K are reported. From these values, different derived parameters such as adiabatic compressibility (b), relaxation time (t), relative association (R_A), acoustic impedance (Z) and intermolecular free length (L_f) were computed. The result obtained were interpreted in terms of solute - solvent and solute - solute interactions of hyberdised drug molecules in 70% DMF solution.

Keywords: Hyberdised drugs synthesized from Isoniazid, density and viscosity and speed of sound.

ISCA-ISC-2012-04CS-75

Ultrasonic Study of Chlorpheniramine Maleate in 70% Methanol at Sifferent Temperature

Meshram Bhushan[1], Agrawal Pratibha[2] and Chandak Hemant[3]
[1,2] Dr.(Mrs.) Ira Nimdeokar P.G. & Research Center for Chemistry, Hislop College,Nagpur-444033 Maharashtra, INDIA
[3]G.S. Science, Arts & Commerce College, Khamgaon, INDIA

Abstract: The experimental values of density (r), viscosity (h) and ultrasonic velocity (u) of Chlorpheniramine Maleate drug in 70% Methanol Solution within the concentration range 0.002M to 0.01M at T=(303.15,308.15,313.15,318.15,323.15)K are reported. From the experimental values different derived parameters such as adiabatic compressibility (b), relaxation time (t), relative association (R_A), acoustic impedance (Z) and intermolecular free length (L_f) were computed. The result are interpreted in terms of various interaction such as solute – solvent interactions, and structure - making and structure - breaking abilities of drug molecules in 70% Methanol Solvent.

Keywords: Chlorpheniramine Maleate, Ultrasonic Velocity, solute –solvent interaction, density and viscosity.

ISCA-ISC-2012-04CS-76

The Study of Ion-Solvent Interaction of Eusol in Some Polar Solvent like Diethyl ether and Acetaldehyde

Verma R.C.[1], Raghav S.[2], Chauhan N.[3], Rouki[4] and Singh A.P[5]
[1-5]Deptt. of Chemistry, Janta College, Bakewar, Etawah, INDIA, [2]Deptt of Chemistry, K.K. College, Etahwah, INDIA
[3]Deptt of Chemistry, K.R. College, Mathura, INDIA, [4]Deptt of Chemistry, B. R. C. C. K. A. Girls College, Kagaraul, Agra, INDIA

Abstract: Ion solvent interaction measurements of Eusol in diethylether and acetaldehyde have been carried out for the study of solute-solvent interaction. Various acoustic parameters (intermolecular free length, isentropic compressibility, specific acoustic impedence, molar sound velocity, apparent molal adiabatic compressibility, relative association and solvation number) have been evaluated using ultrasound velocity data. The results were discussed in the light of solute-solvent interaction between the molecules.

ISCA-ISC-2012-04CS-77

Photocatalytic Degradation of Dyes in Presence of Semiconductor Barium Strontium Titnate

Nihalani Shamta and Bhardwaj Shipra
Department of Chemistry, Govt.P.G. College, Kota, Rajasthan, INDIA

Abstract: Different pollutants pollute the earth and dyes are one of them. These dyes or pollutants are added to water by various color industries like plastic, paper, cloth, yarn etc. The present research work is about the removal of these dyes that too in an eco-friendly manner. The kinetics of photobleaching of some dyes by varying different parameters is

investigated by us. In this Reaction, we have used a ternary semiconductor (Barium strontium titnate) as a photocatalyst. Present research work to be carried out emphasizes to make environment pollution free and to make use of conventional resources like solar energy etc. After the removal of such color substances, water can be made useful for other purposes like agriculture, coolant in industries, washing etc. This study is carried out on spectrophotometer in visible region as the solution are colored in nature. It is investigated that optical density decreases in presence of ternary semiconductor and light both which is proved to be a photocatalysed decolorization. Rate of this reaction depend on different parameter which are varied and investigated.

ISCA-ISC-2012-04CS-78

A Facile â-Cyclodextrin-Catalyzed Synthesis of Substituted Benzofuran from Salicyaldehyde and Alpha Tosyl Ketone

Hangirgekar S.P.
School of Chemical Sciences, SRTM University, Nanded, INDIA

Abstract: A simple and highly efficient protocol for the synthesis of substituted benzofuran from various salicylaldehyde with á- tosyl ketones under catalyst â-Cyclodextrin in water is reported. This protocol gives wide range of substituted benzofuran with high yields.
Keywords: â-Cyclodextrin, benzofuran, á-tosylate, salicyaldehyde, cyclization.

ISCA-ISC-2012-04CS-79

Development and Significance of Enzyme Biosensor Electrodes Based on Immobilized Urease-alginate Beads: Applications in Biopharmaceuticals

Lahiri Preeti and Singh Shriti
Department of Chemistry, Mahila Maha Vidyalaya, Banaras Hindu University, Varanasi, INDIA

Abstract: Our goal is to check the suitability of enzyme entrapped beads for the preparation of the enzyme biosensor electrode. The work is significant because of its potential use in environmental and biochemical sciences, and pharmaceutical industry. Urease, which catalyses the hydrolysis of urea to ammonia and carbon dioxide, is used in an immobilized form in kidney machines for blood detoxification. Immobilization of urease is also carried out in several matrices for various analytical and clinical applications. In addition, several biosensors with immobilized ureases are used to efficiently assay blood urea. These include a recent method of entrapment of urease inside reversed micelles as a method of immobilization and using a glass electrode as a sensor. In light of the above work, we aimed at further developing and refining the enzyme biosensor electrodes that are based on immobilized urease-alginate beads. For this purpose, we extracted urease from the seeds of pigeonpea (*Cajanus cajan L.*) and then tested urease enzyme that was entrapped in calcium alginate beads. Notably, we have used Calcium alginate to entrap enzymes (pigeon pea urease) as this method is found to be economical, safe and convenient. We compared the kinetic properties of soluble urease with the immobilized enzyme. The immobilized urease showed a shift in its optimum pH from 7.5 to 7.0 in Tris/acetate buffer. Optimum temperature also shifted from 47ºC to 65ºC compared with the soluble enzyme. Alginate-immobilized pigeon pea urease had a higher K_m than that of the soluble enzyme. Further, we attempted to use immobilized beads for the preparation of a urea biosensor, which we have developed from potentiometric pH glass electrode coupled to a calomel electrode. Then, we have made serum urea estimation using the enzyme biosensor electrode. Our ongoing and future work would show that urea biosensor will be able to detect urea with good linearity and reasonable sensitivity. Our work has a variety of applications in biological and pharmaceutical industries. For example, such biosensor can be utilized to measure the level of trace elements in environment and biological specimens. The quantitation of cadmium in aqueous media has been shown by using pumpkin urease entrapped in alginate beads. Notably, the use of the amperometric assay (with free urease) has been tested feasible for the screening of trace amounts of metals in polluted samples. Another novel use of this approach is the development of an alginate microcapsule, which contains three enzymes (urease, uricase, and creatininase). This is capable of effectively degrading urea, uric acid, and creatinine, which are increased to pathologic levels in patients with kidney failure. Taken together, the present work provides some useful data and information for the use of immobilized urease-alginate beads.

ISCA-ISC-2012-04CS-80

Solvent-free Synthesis of Some New Heterocyclic Derivatives with Antibacterial and Antifungal Properties

Ansari K.F. and Lal C.
Department of Chemistry, Harcourt Butler Technological Institute, Kanpur, INDIA

Abstract: A Physico-Chemical approach towards solvent-free synthesis has gained a wide dimension in the last few decades in term of structure evaluation and biological activities of Benzimidazole derivatives. Green synthesis of pharmacologically active benzimidazole derivatives has been achieved under solvent-free green conditions, with incomparable atom economy. We have synthesized the efficient one-pot solvent-free green synthesis of a series of benzimidazole derivatives in good yield. The structures of the synthesized compounds were determined by the elemental and spectroscopic data. Finally, the newly synthesized were screened for their antimicrobial activity. The solvent-free synthesis of benzimidazole derivatives provide a better results in term of yield, reaction time and atom economy in comparison to conventional organic synthesis. The newly synthesized compounds were also found to be active against gram-positive, gram-negative bacteria and fungi. It was found that the tested compounds are more effective against the Gram positive bacteria and *Candida albicans*. The lipophilic character and molar refractivity of all synthesized compounds were also calculated and their structure activity relationship was studied. It may be concluded that lipophilic character of the molecules plays an essential role in producing antimicrobial effect. They showed less activity against *E. coli* and *Aspergillus flavus* in comparison to reference drug. This synthesis offers very attractive features such as green synthesis, reduced reaction times and higher yields, all of which make it a useful and attractive strategy for the preparation of various benzimidazole derivatives.

Keywords: Solvent-free synthesis, benzimidazole, lipophilicity, molar refractivity, antibacterial and antifungal activity.

ISCA-ISC-2012-04CS-81

An Approach to Green Synthesis of Some New Benzimidazole Derivatives bearing Antimicrobial Activities

Lal C. and Ansari K.F.
Department of Chemistry, Harcourt Butler Technological Institute, Kanpur, INDIA

Abstract: Green synthesis of biologically active benzimidazole derivatives has been achieved under solvent-free green conditions, with incomparable atom economy. We have carried out the efficient solvent-free green synthesis of a series of benzimidazole derivatives in good yield. In this methodology, both reactants were thoroughly grinded to make a pestle in a mortar at room temperature in an open atmosphere until the mixture turned melt. For liquid starting materials, they were mixed thoroughly for a given period of time instead of grinding. The structures of the synthesized compounds were determined by the elemental and spectroscopic data. Finally the newly synthesized compounds were screened for their antibacterial and antifungal activity. The solvent-free synthesis of benzimidazole derivatives provide a better results in term of yield, reaction time and atom economy as compared to conventional organic synthesis. The newly synthesized compounds were found to be active against gram-positive bacteria, gram-negative bacteria. This synthesis offers very attractive features such as green synthesis, reduced reaction times and higher yields, all of which make it a useful and attractive strategy for the preparation of various benzimidazole derivatives. The simplicity of the procedure is also attractive, which offers wide scope in organic synthesis. These preparations have also proved to be effective against variety of bacterial and fungal strains.

Keywords: Green synthesis, benzimidazole, antibacterial and antifungal activity.

ISCA-ISC-2012-04CS-82

Equilibrium Structure and Properties of Model Colloidal Suspensions

Udaykumar P., Khanna T. and Behera R. N.
Deptt of Chemistry, Birla Institute of Technology & Science, Pilani – K.K. Birla Goa Campus, Zuarinagar, Goa, INDIA

Abstract: We report the numerical results on the structure and properties of model colloidal suspensions using the hypernetted-chain (HNC) integral equation due to Allnatt, which has been successfully applied to asymmetrical electrolyte solutions. We use the primitive model and view our system as highly asymmetrical electrolyte; the colloidal spheres are much larger and more highly charged than the simple ions. The variation of static correlation functions, structure factors

and properties, (e.g. excess energies, osmotic coefficients etc.), is reported as a function of size, charge and concentration of colloidal particle. The peak position and the peak height of correlation functions show systematic trends as the asymmetry (in size, charge) increases. The effective one-component potential of the colloid (V_{eff}), calculated by mapping the multicomponent system to an effective one-component colloidal system, is purely repulsive in line with the DLVO potential (with substantial deviations) in most of the cases. However, in some cases (with high asymmetry in charge and size, and at high colloidal concentration), V_{eff} becomes negative.

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Condensed Heterocycles Such as Chromeno Pyrido 1, 2, 4- Oxadiazole, Thiozolidones, from 4-Hydroxycoumarin

Jadhav G.R., Deshmukh D. and Medhane V.J.
Post Graduate Department of Chemistry, K.R.T. Arts, B.H. Commerce and A.M. Science College, Nashik, INDIA

Abstract: Heterocyclic system containing Coumarin nuclei are the most versatile bioactive compounds. The incorporation of other groups alters the Pharmacological property of parent Coumarin and converts it into more useful products[1]. Natural Coumarins known to have antidiabetic activity, the potent antibiotic like Novobiocin, Coumaromycin and chartesium are Coumarin derivatives. Many Coumarin derivatives are applied as anticoagulant, antibacterial, Antifungal, antiviral, antitumor and anti HIV activity. The heterocyclic compounds like Oxadiazole other shows biological activity we wanted to find out the effect of such heterocycles incorporated Coumarin nucleus. Oxadiazole are well known for their antifungal activity, antimicrobial, Antitubercular activity. 4-Hydroxy -2-oxo-2H-chromene is converted to 4-amino-2-oxo-2H-chromene -3-carbaldehyde 2.Compound 2 on series of reaction to 2-methyl-5-oxo-5H-chromeno [4, 3-b] pyridine-3-carbohydrazide (4). Compound 4 when refluxed with aromatic acid in phosphorus oxychloride to get a 2-methyl-3-(5-aryl-1,3,4-oxadiazol-2-yl)-5H-chromeno[4,3-b]pyridin-5-one (5a-c). Also compound 4 react with aldehydes gives N'-arylidene-2-methyl-5-oxo-5H-chromeno[4,3-b]pyridine-3-carbohydrazide (6a-c). The compound (6a-c) when react with thioglycolic acid in presence of zinc chloride leading to get 2-methyl-5-oxo-N-(4-oxo-2-arylthiazolidin-3-yl)-5H-chromeno[4,3-b]pyridine-3-carboxamide(7a-c). Compound (6a-c) when refluxed in Ac_2O to get 3-(4-acetyl-4, 5-dihydro-5-aryl-1, 3, 4-oxadiazol-2-yl)-2-methyl-5H-chromeno [4, 3-b] pyridin-5-one (8a-c).All these compounds were characterized by spectral and analytical methods.

Keyword: Coumarin, oxadiazole, thiozolidones

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Microwave Synthesis, Characterization and Biological Activity of Some Substituted Coumarins

Monga Paramjeet K.[1], Agrawal Neelu[1] and Bhasin Sheetal[2]
[1]Department of Chemistry, M.L.C. Govt. PG. Girls College, Khandwa, MP, INDIA
[2]Dept. of Bioscience, Maharaja Ranjit Singh College, Indore, MP, INDIA

Abstract: Coumarins (2H-1-bengopyran-2-ones) are important oxygen containing fused heterocycles used in drugs and dyes. They are the family of lactones containing benzopyrone skeletal framwork that have enjoyed isolation from plant as well as total synthesis in the laboratory The incorporation group as a fused component into parent coumarin alters the property of parent coumarin and converts it into a more useful product. Coumarins have been reported to possess, among others, anticoagulant, antitubercular, antileucemic, antimicrobial, anti-inflammatory, anti-HIV, analgesic, anticancer, antitumoral, anticonvulsant, antiplatelet, antifungal, antiviral, antibacterial, and antimalarial activities. Dietary exposure to benzopyrones is quite significant, as these compounds are found in vegetables, fruit, seeds, nuts, coffee, tea and wine. The pharmacological and biochemical properties as well as therapeutic applications of coumarins depend upon the pattern of substitution. In view of this coumarins have attracted intense interest in recent years because of their diverse pharmacological properties. A considerable increase in the reaction rate has been observed with better yield using microwave irradiation in comparison to conventional thermal treatment. The newly synthesized compounds were evaluated for biological activity. The appropriate procedure for the synthesis of some substituted coumarin will be adapted used in synthesis of analogues molecule to get eco-friendly, better yield and pure product of some substituted coumarins. Characterization of synthesized substituted coumarin compounds will be done by TLC, IR, NMR, and MASS Spectroscopy. All synthesized substituted coumarin compounds will be evaluated for biological activity.

Keywords: Coumarin, microwave synthesis, Characterization, biological activities.

ISCA-ISC-2012-04CS-85

Study of Parametric Effects and Kinetic Modeling of Transesterification Reaction for Biodiesel Synthesis

Saeikh Z. Hassan, Chopade Sujoy A. and Vinjamur Madhu
Department of Chemical Engineering, I.I.T Bombay, Mumbai, INDIA

Abstract: Biodiesel is considered as an alternative fuel for diesel engine due to the predicted shortage of fossil fuels, increase in the price of the petroleum and the environmental pollution coming from the car gases using fossil fuels. In this work, KOH-catalyzed transesterification of sunflower oil with methanol (*A*) is carried out for kinetic modeling of biodiesel synthesis and the effects of reaction parameters on kinetics are evaluated. Taguchi design of experiments with standard L9 orthogonal array is used for experimentation. Effects of catalyst loading, temperature and molar ratio (MR) on reaction kinetics are evaluated through Taguchi method. Kinetic modeling: The overall transesterification process for biodiesel synthesis is a sequence of three consecutive reversible reactions In the ûrst step, diglyceride (*DG*) is obtained from triglycerides (*TG*), monoglyceride (*MG*) is produced from diglyceride in the second step and glycerin (*Gly*) is obtained from monoglycerides in the last step. In all the reaction steps alkyl esters (*FAME*) are produced. Pseudo-homogeneous rate models are considered and the differential equations are solved using ODE45 function in MATLAB to determine the rate constants. The final optimal values of the rate constants are used to estimate the concentration profile of different species and good agreement between model and experiment is found. Taguchi analysis: Taguchi method is a statistical analysis of a system and signal-to-noise ratio (SN ratio) is being used as the decision making tool. Taguchi analysis is carried out on TG, DG, MG and FAME obtained after 60 minutes of reaction by applying 'larger-is-better' SN ratio for FAME and 'smaller-is-better' SN ration for TG, DG and MG. Increase in any of the reaction parameters, over the range studied, increase in FAME production is found whereas decrease in TG, DG and MG is found.
Keywords: Kinetic modeling, Taguchi method, Transesterification, Biodiesel.

ISCA-ISC-2012-04CS-86

Effect of the Micellar Catalysed Hydrolysis of Bis-4-Chloro-3-Methyl Phenyl Phosphate Ester

Singh Abendra Pal[1], Verma R.C.[1] and Kushwaha R.S.[2]
[1]Department of chemistry, Janta college, Bakewar, Etawah, INDIA
[2]Department of Chemistry,Agra College, Agra, U.P., INDIA

Abstract: Micellar effect upon nucleophilic substitution reactions between hydroxide anions [OH^-] and bis-4-chloro-3-methyl phenyl phosphate ester (bis-4-CMPP) in presence cetyltrimethyl ammonium bromide(CTABr) has been examined in buffered medium (at pH 8.0 to 10). The first order rate consant ($K_ø$) are increased with the concentration of the surfactant can be analyzed in terms of Br^- ions in micellar pseudophases, which occur readily by aqueous CTABr and calculated second order rate constants.
Keywords: Micelles, Micellar Catalyses, bis-4-CMPP, CTABr.

ISCA-ISC-2012-04CS-87

Effect of the Micellar Catalysed Hydrolysis of Mono -4-Chloro-3-Methyl Phenyl Phosphate Ester

Singh Abendra Pal[1], Verma R.C.[1] and Kushwaha R.S.[2]
[1]Department of chemistry, Janta college, Bakewar, Etawah, INDIA
[2]Department of Chemistry,Agra College, Agra, U.P., INDIA

Abstract: Micellar effect upon nucleophilic substitution reactions between hydroxide anions [OH^-] and mono-4-chloro-3-methyl phenyl phosphate ester (mono-4-CMPP) in presence cetyltrimethyl ammonium bromide(CTABr) has been examined in buffered medium (at pH 8.0 to 10). The first order rate consant ($K_ø$) are increased with the concentration of the surfactant can be analyzed in terms of Br^- ions in micellar pseudophases, which occur readily by aqueous CTABr and calculated second order rate constants.
Keywords: Micelles, Micellar Catalyses, 4-CMPP, CTABr.

ISCA-ISC-2012-04CS-88

Isolation and Identification of Aliphatic Compounds from the Benzene Extract of P*iper Betle* Linn.(Leaf Stalk)

Tiwari B.K.[1], Mehta B.K.[2] and Ahmad Nisar Bhat
[1]Department of chemistry ,Govt Kalidas Girls College Ujjain, M.P., INDIA
[2]Department of chemistry and Biochemistry, Vikram University Ujjain, M.P., INDIA

Abstract: The hexane extract was separated by column chromatography using alumina gradeiii as adsorbent. Alumina was deactivated with 7% water before filling in the column.The elution of the column was carried out with the various solvents and mixtures of solvent increasing order of polarity . The rechromatography of various fractions afforded aliphatic compounds in pure form designating as PBT-7 [Tritriacont-5-ol} and PBT-8 [Octaicos-9,19-diene-6-ol).The compounds were identified by using IR, $^{1}H_{NMR}$,$^{13}C_{NMR}$ and mass spectroscopy and the various present in isolated compounds are tested by Feigl test , Alkaline hydrolysis,cerric ammonium nitrate test and tetranitro methane test(TNM).
Keywords: *piper betle(leaf stalk),IR,$^{1}H_{NMR}$, $^{13}C_{NMR}$ and mass spectroscopy.*

ISCA-ISC-2012-04CS-89

Study of Physicochemical Parameters and Assessment of some Heavy Metals Contamination in Dhengur Nallah at Korba City, CG, India

Singh Dhanesh and Keshker Girish
Department of Chemistry, KG Arts and Science P.G. College Raigarh, CG, INDIA

Abstract: Korba city is the industrial hub of Chhattisgarh state. Dhengur Nallah is an important water body system of Korba city. Various power generation complexes, aluminium smelting factory and small scale industries established here. These industrial units are discharge their effluent in to Dhengur Nallah. This is harmful for aquatic eco-system and human beings. The present study was carried out during July 2011 to June 2012. Three wastewater samples were collected from Dhengur Nallah at different sampling stations, first sample from near fly ash dam Bhadarapara village, second from near check post and third from near Patharripara village. The following physicochemical parameters were analyzed like Temperature, pH, Conductivity, Turbidity, TS, TDS, TSS, Acidity, Alkalinity, Hardness, Chloride, Fluoride, Sulfate, DO, BOD, COD, Oil & Grease and Toxic metals (Pb, Cd & As). The results were compared with water and wastewater quality standards. The results reveal that findings physicochemical parameters are not good for aquatic organisms. So wastewater should be treated before discharged in to natural water sources.
Keywords: Wastewater sample, Dhengur Nallah, physicochemical parameters, industrial effluents, toxic metals.

ISCA-ISC-2012-04CS-90

Synthesis, Spectral and Thermal Degradation Kinetics studies of benzimidazole substituted metal phthalocyanine through oxadiazole bridge (M=Co, Ni, Cu)

Rajesh, Shoukat Ali. R.A and Jati Keshavayya
[1]Department of Studies and research in Chemistry, Kuvempu University, Janna Sahyadri, Shankaragatta, Karnataka, INDIA

Abstract: In this study, new type of Benzimidazole substituted metal Phthalocyanine complexes connected by oxadiazole bridge were prepared by the acid catalyzed melt condensation of hydrazides with tetracarboxy metal Phthalocyanine in the presence of PPA. Which in turn, tetracarboxy metal Phthalocyanines and 2-(2-substituted-1H-benzimidazol-1-yl)acetohydrazide were synthesized by suitable modification of reported procedure. Novel dark green coloured 1,8,15,22-Tetra-[1-(1,3,4-oxadiazol-2-ylmethyl)-1*H*-benzimidazole] M(II) Phthalocyanine (M=Co,Cu,Ni) were characterized by elemental analysis, UV-Vis and IR-Spectroscopic techniques. Thermal stability of newly synthesized phthalocyanine complexes were investigated by means of thermogravimetric analysis (TGA). On basis of the TGA data, the kinetic and thermodynamic parameters such as activation energy (Ea), order of reaction (n), entropy change (DS), free energy (DG), enthalpy (DH) and frequency factor (*A*) were calculated using Broido's method.
Keywords: Phthalocyanines; [1,3,4]-Oxadiazole; Benzimidazole; Electronic; IR; PPA; TGA.

ISCA-ISC-2012-04CS-91

Kinetic Monitoring for Photocatalytic Degradation of Amaranth Dye using Well-Dawson Polyoxometalate

Sharma Daksha[1], Ordia Mamta[2] and Ameta Rakshit[*3]
[1]Department of Chemistry, Vidya Bhawan Rural Institute, Udaipur, Rajasthan, INDIA
[2]Central Academy School, Sardarpura, Udaipur, Rajasthan, INDIA
[3]Department of Chemistry, Pacific College of Basic and Applied Sciences, PAHER University, Udaipur, Rajsthan, INDIA

Abstract: The photocatalytic degradation of various organic pollutants seems to be quite promising technique for waste water treatment, as it is a green chemical approach and also low cost method to solve this problem. Binary and Ternary oxides have been used as efficient photocatalysts. In the present investigation, an attempt is made to use Quarternary oxide i.e, Well-Dawson Polyoxometalate as a photocatalyst in the degradation of Amaranth Dye. Photocatalytic degradation of Amaranth dye has been observed using this catalyst and the progress of reaction has been monitored spectrophotometrically. The effect of variation of different rate affecting parameters i.e. pH, amount of photocatalyst, concentration of dye solution and light intensity were studied. Kinetics reveals that degradation of Amaranth follows pseudo-first order reaction.

ISCA-ISC-2012-5CITS-01

An Broad Outline of Redundant Array of Inexpensive Disks

Alireza Souri[1], Mohammad esmaeel Akbari[2] and Monire Norouzi[1]
[1]Department of Computer Engineering, Ahar Branch, Islamic Azad University, Ahar, IRAN
[2]Department of Electrical Engineering, Ahar Branch, Islamic Azad University, Ahar, IRAN

Abstract: In this paper, we reviewed several levels of RAID and a brief of RADD in the storage environment. We will discuss architecture and utilities of each technique or levels like RAID 0, RAID 1, RAID 2, RAID 3, RAID 4, RAID 5 and RAID 6 based on our literature review. We have discussed or identified the various factors impacting the disk drive performance and issues for improving the functioning of the storage infrastructure.
Keywords: RAID, RADD, data recovery, disk, drive.

ISCA-ISC-2012-5CITS-02

Comparison with Issues of Images for Better Results by Image Processing

Mahajan Pooja and Khare C.D.
S.V.I.T, Indore, MP, INDIA

Abstract: In this paper, different well-known features for image processing specially for the comparison of images are studied, compared and their correlation is analyzed. The features form the basis for the comparison process and performance of the comparison strategy is very much depending upon these features. The study of different features either it is local or global features, which can be used as a basis for an appropriate choice of features or Descriptors. In the past a systematic analysis of image retrieval systems or features was often difficult because different studies usually used different data sets and no common performance measures were established.
Key words: retrieval system, features, descriptors, image processing etc.

ISCA-ISC-2012-5CITS-03

A New Approach To Mine Frequent Itemsets

Patel Tushar S. and Amin Kiran R.
Comp. Engg. Dept., UVPCE, Kherva, GJ, INDIA

Abstract: Mining frequent patterns in transaction databases and many other kinds of databases has been studied popularly in data mining research. Methods for efficient mining of frequent itemsets have been studied extensively by many researchers. However, the previously proposed methods still encounter some performance bottlenecks when mining databases with different data characteristics. The time required for generating frequent itemsets plays an important role. And also the poor efficiency of counting candidate itemset's support count. In this study, we propose a new frequent itemsets tree (FI-tree) structure, which is used for storing frequent itemsets and their Tid sets. A distinct feature of this method is that it has runs fast in different data characteristics. Our study shows that a new approach has high performance in various kinds of data, outperforms the previously developed algorithms in different settings, and is highly scalable in mining different databases.
Keywords: Mining, frequent itemset, adult, hepatitis, heart.

ISCA-ISC-2012-5CITS-04

A Region Specific Robust Watermarking Scheme for Color Images in YIQ and YUV Color Spaces

Singh Priyanka[1] and Agarwal Suneeta[2]
[1]GIS Cell, Motilal Nehru National Institute of Technology, Allahabad, INDIA
[2]CSED, Motilal Nehru National Institute of Technology, Allahabad, INDIA

Abstract : Region Specific Watermarking emphasizes on the importance of the content in an image which varies from region to region and depends upon the application to be employed with the solution. One such region specific robust watermarking technique for the color images has been proposed here. It exploits the Human Visual System (HVS) sensitivity to embed the secret information into regions by segmenting the image using quad tree based decomposition and inserting it in such a way that it is perceptually indistinguishable from the original cover image. The performance of the proposed methodology has been tested in the various RGB, YIQ and YUV color spaces. The robustness against the various image processing attacks have also been validated with the high Peak Signal to Noise Ratio (PSNR) and Normalized Cross Correlation (NCC) values.

Keywords: Human Visual System (HVS), Normalized Cross Correlation (NCC), Peak Signal to Noise Ratio (PSNR), Quad tree based decomposition.

ISCA-ISC-2012-5CITS-05

SOA based Network Virtualization Paradigm – QoS Performance Analysis

Tandon Garg D. and Kamal Kant
Department of Computer Science and Engineering, Amity University, Noida, UP, INDIA

Abstract: Network Virtualization has helped in achieving the most complex tasks when it comes to Quality-of-Service (QoS) provisioning to all the end-users. In our paper we are trying to show the efficient way to allocate fixed-capacity network services in the virtual networks when multiple service requests are handled over the Wide Area Virtual Network (WAVN), and thereby maintaining the QoS issues associated with it. Through simulations, we are trying to emulate the scenario constrained by certain properties and their values to understand our algorithmic perspective in achieving the most optimal performance of a virtual network in a network virtualization environment.
Keywords: Virtual Network (VN), Load Balancing, Service Oriented Architecture (SOA), Quality-of-Service (QoS).

ISCA-ISC-2012-5CITS-06

Computer Aided Analysis of Turbogenerator Foundation

Bhishm Singh Khati[1], Swami Saran and S.Mukerjee[2]
[1]Civil Engg Dept, G B Pant Engg. College, Pauri, Uttarakhand, INDIA
[2]Dept. of Earthquake Engineering, IIT Roorkee, UP INDIA

Abstract: A turbo generator unit is most expensive, vital and important part in thermal power plant. The operating speeds of turbo generator may range from 3000 rpm to 10000 rpm. Auxiliary equipments are essential features of a turbo generator installation. Frame foundations are commonly used for turbo generator. Frame foundations are best suited for arrangement of equipments, easy inspection and economical construction. For safety point of view, dynamic analysis of such foundation is very important. Various studies have been incorporated for dynamic analysis of a rotor- bearing - foundation system. Different theoretical approaches have been developed so far, like resonance, amplitude and combined method. The basic purpose of this study is to make a computer program for finding the natural frequency of the system and amplitude of the system of turbo-generator foundation. The programs developed are for two methods, one a Resonance method and the other is an Amplitude method. That is why now-days a computer-based analysis is getting more popular. To develop these programs 'MATLAB' software has been used.
Keywords: A general design criteria and analysis procedure for frame foundation. Brief discussion on resonance and amplitude method.

ISCA-ISC-2012-5CITS-07

Virtual Makeover Software

Asma Sajjad, Afsheen Tariq and Ayesha Shoaib
Dept. of Computer Science, Faculty of Basic and Applied Sciences, International Islamic Uni., Islamabad, PAKISTAN

Abstract: Many face makeover software provide the facility of doing makeup either by using free hand drawing or using templates in which, points can be adjusted according to face and then application of make-up is performed, which often does not provide high-quality output. Automatic detection of facial features, such as eyes, lips and face line etc, seems to be easier and convenient way of applying make-up but there is no software that provides automated facial features detection technique. This application provides this facility by using image processing techniques which can automatically detects hair line, eyes and lips to apply make-up.
Keywords: Image Processing, feature extraction, eye localization, eye detection, lip localization, lip detection.

ISCA-ISC-2012-5CITS-08

The Challenges in Network Security

Gupta Dinesh
Department of Computer Science & Engineering, Oriental University, Indore-452001, MP, INDIA

Abstract: Network security involves the authorization of access to data in a network, which is controlled by the network administrator. Users choose or assigned an ID and password or other authenticating information that allows them access to information and programs within their authority. It covers a variety of computer networks, both public and private sectors, that are used in everyday jobs conducting transactions and communications among businesses, government agencies and individuals. It secures the network, as well as protecting and overseeing operations being done. The most

common and simple way of protecting a network resource is by assigning it a unique name and a corresponding password. Managed security services hold a lot of promise and are suited for use by small and medium-size organizations, as well as their larger counterparts. Such services allow organizations to improve their overall security posture and meet governance and compliance objectives. They need to require use firewall, anti-virus software (Net protector, Norton, Quick-heal etc), strong and robust password, use passwords for all necessary documents, change the password as required, maintain by CERT group and in school monitor by teacher as well as FERPA in higher education. The security may be disturbed by malicious sources like Idle scan, Wiretapping, Denial-of-service attack, Buffer overflow and SQL injection etc. For confidentiality may using encryption and decryption in network security. Managed encryption services are able to provide organizations with significant benefits by taking away many of the pain points and by being cost-effective and easy to deploy. The market for managed security services is showing strong levels of growth. According to a report issued by Infonetics Research in 2012, the worldwide market for managed security services was worth $11.7bn in 2011 and will grow to $18bn in 2016.

ISCA-ISC-2012-5CITS-09

Self-Healing Sensor Network Key Distribution Scheme for Secure Communication

Patel Jaykumar Shantilal
Research fellow, department of computer science, Kadi Sarva Vishwavidyalaya, Gandhinagar, Gujarat 382015, INDIA

Abstract: Wireless sensor network (WSN) consists of a large number of small, low cost sensor nodes which have limited computing and energy resources. As the wireless medium is characterized by its lousy nature, reliable communication is difficult to assume in the key distribution schemes. Therefore, self-healing is a good property for key distribution in wireless applications. How to establish secure session keys is one of the central tasks for wireless sensor network communications. General Key distribution schemes for traditional computer networks could not be directly shifted to wireless sensor network environments. A self-healing key distribution scheme enables a large group of sensor nodes to establish a session key dynamically over an unreliable, or lousy wireless network. The main idea of self-healing key distribution scheme is that users are capable to recover lost session keys on their own, without requesting additional transmission from the group manager that saves the additional communication cost over the network and reduces the network traffic, even if during a certain session some broadcast messages are lost due to network faults.
Keywords: Self-healing, Key distribution, secure communication.

ISCA-ISC-2012-5CITS-10

Nanotechnology a Boom in the field of Information technology at Molicular Scale

Mishra Ashwani[1] and Dubey Preeti[2]
[1]Dept. of Computer Science, Janta College Bakewar, Etawah, INDIA
[2]Dept. of Computer Science, RRDC, Etawah, INDIA

Abstract: 'Nanotechnology' is the engineering of functional systems at the molicular scale.This covers both current work and concepts that are more advanced. In its original sense, nanotechnology refers to the projected ability to construct items from the bottom up, using techniques and tools being develope today to make complete,high performance products. Much of the work being developed today that carries the name "Nanotechnology", in its traditional sense, means building things from the bottom up with atomic precision. It will have significant impact on allmost all industries and all areas of society. It will offer better built, longer lasting, cleaner, safer and smarter product for the home for communications for medicine, for transportation for agriculture and for industries in general.Imagine a medical device that travels through human body to seek out and destroy small clustures of cancerous cells before they can spread. (U.S. National Science Foundation)
Keywords- 'Nanotechnology', molicular level, medical device , high performance products.

ISCA-ISC-2012-5CITS-11

Agriculture e-journals, digital materials a big milestone for all Teacher's and Research scholar's

Verma Sarita[1] and Chaudhary Arvind Kumar[2]
[1]Dept. of Library and information Science, MLB Govt. P.G.College of Excellence, Gwalior, MP, INDIA
[2]Dept. of Library and information Science Janta College Bakewar, Etawah, INDIA

Abstract: A journal is an important resources for up-to-date information in particular all disciplines. Libraries attached to institutions involved in R & D activities depend heavily on journals for information pertaining to their research

project. Now seen as the final repository of knowledge with in the academic disciplines the trend of publishing of articles in journals has increased. It is estimated that there are about 2,50,000 periodicals available in the world, including 25,000 in science, technologies and medicines. 14246 are referred to as scholarly journals. 1200 and above are available as on line journals which are highly used resource materials for education and research purposes. The new concept of D M (digital materials) is based on digitization of books and research journals, proceedings of seminars and conferences etc. and making them available online in a searchable and browsable from to archieve universal accuses to knowledge. Publishing digital library journal and magazines has come up to completely ruling the teachers and research scholars. The present study can be very useful to college/university students and teachers and it will go a long way to serve as a base for future research studies.
Keywords: Agriculture e-journals, digital materials, future research.

ISCA-ISC-2012-5CITS-12

Search Engine Optimization : A Study

Patil Swati P.[1] and Pawar B.V.[2]
[1]Department of Computer Science, S.S.V.P.S's Science College, Dhule, Maharashtra, INDIA
[2]Department of Computer Science, North Maharashtra University, Jalgaon, Maharashtra, INDIA

Abstract: As popularity of web increases, millions of people use search engines to discover information. But search engine users are interested only in top few result pages. So promoting a website in search engine result is a major task in website development. Search engine optimization (SEO) is to complete this work. But sometimes black hat SEO techniques are used which mislead the search engine and increase page ranking higher than deserved in search engine results. This paper present feature of search engine page rank algorithms, SEO techniques and black hat SEO techniques.
Keywords: Search Engine Optimization (SEO), Black hat SEO, Page Rank.

ISCA-ISC-2012-5CITS-13

A Small Change in Process: Big Leap in Adoption of Software Quality Standards in Education (Saru – An Example)

Ramakrishna S[1] and Bhargava Ruchira[2]
[1]Aurora's Engineering College, Bhongir, Hyderabad, AP, INDIA
[2]JJT University, Jhunjhunu, Rajasthan, INDIA

Abstract: The paper highlights the need for processes improvements in education by developing and deploying a small MS Excel based database tool called "Student Attendance Record System (SARU). The tool describes how the existing manual processes having severe limitations of data availability and prone to manipulations are eliminated by a simple tool developed in-house that meets the requirements of the regulating body and high expectations of engineering college managements. Further it highlights how a small process changes can bring about excellent improvements in the education system that is usually run on manual processes.
Keywords: Process Improvement, SARU,Software tool in education.

ISCA-ISC-2012-5CITS-14

Quantum Computation: The Qumputers

Sharma Anjali[1] and Sharma Akhilesh[2]
[1]IIIT, Gwalior, MP, INDIA
[2]MLC Govt GDC Khandwa, MP, INDIA

Abstract. The first computer used binary and the most modern computer today uses binary. All we have done in classical computer development is make them more compact and increase the number of transistors on a processor chip. Processing is still done using bits. A bit is still represented by 1 s and 0 s as it was centuries ago. First proposed in the 1970s, But the computing industry is moving to a new future as disruptive and as radical as the era that began with the introduction of silicon chips, and that future is quantum computing. These are systems that use the behavior of subatomic particles to conduct calculations now performed with transistors on a chip. It has the potential to perform certain calculations billions of times faster than any silicon based computer. This future may be anywhere from 10 to 20 or more years away. But if the potential of quantum computing is fully realized, it may trigger a development rush in chip and hardware design reminiscent of what Silicon Valley experienced decades ago.Quantum computing is the area of study focused on developing computer technology based on the principles of quantum mechanics , which explains the nature and behavior of energy and matter on the quantum level (atomic and subatomic level). Quantum computing relies on quantum physics by taking advantage of certain quantum physics properties of atoms or nuclei that allow them to work together as quantum bits, or qubits, to be the

computer's processor and memory. Bits and Qubits A bit is in one of two states, 0 and 1, represented by e.g. the state of a switch or a voltage. To map this to quantum mechanics, choose two orthogonal states (e.g. horizontal and vertical polarization) and label these I0> and I1>. The state maps to a Boolean 0 or 1. A qubit is a parcel of information represented by such a system. Because quantum mechanics is linear, unlike Boolean algebra, a qubit can be not just the value I0> or I1> but any complex linear superposition that satisfies the normalization condition. For example, a qubit might be I0>, a horizontally polarized photon; or it might be I1>, a vertically polarized one, or it might be a right circularly polarized one, or any other linear combination with appropriate normalization. The challenge is to build upon today's small quantum computers by adding more and more qubits (units of quantum information, rather than the "bits" of traditional computers) beyond what is currently possible, which is about ten qubits,. "The problem is that they fall apart quickly due to decoherence," or unwarranted interaction between the computer and its outside environment. With this exposure, "the system loses its quantum behavior."

Keywords: Quantum Computing , Qbits, quantum behavior.

ISCA-ISC-2012-5CITS-15

Various Attacks and Their Prevention in Mobile AdHoc Network

Verma Sunil Kumar, Agrawal Ankit and Goswami Sukrit
Bon Maharaj Engineering College, Vrindavan, INDIA

Abstract: A Mobile Ad Hoc Network (MANET) is a self organizing, infrastructure less, multi-hop network. The wireless nature of MANET gives the security to the designers, although security problems in MANETs give more attention but in last some days researchers have find out many types of attacks and system security, which means how to give security to the system.Some fundamental characteristic is there such as open medium, dynamic topology, dynamic medium lead to the vulnerabilities. Whenever there is need to find the shortest path, the routing protocol does not give the shortest path but also give the path where we can travel fast. The routing Protocol which gives the shortest path it gives more collisions and delay in between. In order to avoid all loss in performance and gives less chance to collision this paper gives some techniques to discover the active shortcuts and best possible path.

Keywords: Security, route, MANET, Terminal, protocols.

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Comparative Study between Various Features of Virtual Data Warehouse and Traditional Data Warehouse

Goswami Sukrit and Verma Sunil Kumar
Bon Maharaj Engineering College, Vrindavan, INDIA

Abstract: Today Enterprises depend largely on Data Warehouse for making informed decision making. The warehouse is the single repository of nonvolatile, historical enterprise data snapshots used across a range of analytical and reporting purposes. Securely storing the data needed for analytical purposes, the data warehouse provides stability, reliability, quality and consolidation. But data warehousing is no easy task. Building a data warehouse can be extremely expensive. And once built, data warehouse systems can be complex to manage and maintain. There is another way: the middleware approach. Depending on your company's requirements, middleware can act as data hubs, allowing access to the corporate data stored in heterogeneous data sources. Whereas a traditional data warehouse provides a central repository for information, a virtual data warehouse uses middleware to build direct connections among disparate applications. This virtual approach requires less time and expense to develop, and entails less risk of data being lost. But Virtual Data Warehouse (VDW) has its own risks. So, is not a replacement for traditional Data warehouse (DW). In this paper, we have discussed the benefits and risks involved in EDW and VDW and guidelines for making a choice between EDW and VDW.

Keywords: Datawarehousing; Virtutal Datawarehouse; types of Datawarehouse.

ISCA-ISC-2012-6ES-01

Very Low Frequency Electromagnetic Method in Shallow Subsurface Imaging – Application to Uranium and Graphite Exploration

Sharma S.P., Biswas Arkoprovo and Mittal Saurabh
Department of Geology and Geophysics, Indian Institute of Technology Kharagpur, WB, INDIA

Abstract: The very low-frequency (VLF) electromagnetic method uses primary signals transmitted from worldwide far-off transmitters positioned in different coastal areas. These transmitters are typically intended for long distance marine communication. VLF transmitters works at a low frequency band (5–30 kHz) and the transmitted signal travel at a very long distance. Such transmitted signals penetrate the Earth's subsurface and produce electromagnetic induction in the subsurface even several thou-sands of kilometers away from the transmitters. The VLF method is quite simple and the frequently used to delineate the near-surface conducting structures for shallow subsurface imaging. The method has been widely used in many geophysical applications for exploration and environmental studies. In the present work, we have used the VLF method for the delineation of Uranium and Graphite mineralization from two different regions of India. The mineralization could occur in different shape and structures based on their depositional environments. Since, VLF electromagnetic method suits well for delineation of vertical and gently dipping structure, it has helped in identifying the conducting structures (Uranium) associated with South Purulia Shear Zones. The survey is performed to find out the location of the conductor associated with uranium mineralization and subsequently the extension of the body in lateral direction. Since, graphite also occurs as a thin vertical as well as dipping sheet type structures, a survey is also carried out over an existing graphite mine near Daltanganj to check whether it can also detect and map graphite deposits. The study demonstrate that VLF method can quickly map the entire area within a very short span of time and can delineate the subsurface conducting structures very quickly for exploration purposes. However, it is also important to reveal that VLF survey is not sufficient to confirm the nature of the subsurface conducting structure for mineralization as it cannot distinguish between a mineralized or groundwater filled fracture zones. Hence, complimentary geophysical survey such as Resistivity sounding and profiling, Self-Potential survey, gravity and magnetic could be used together for validation.
Keywords: VLF-EM, subsurface imaging, mineralization, uranium, graphite.

ISCA-ISC-2012-6ES-02

Integrated Geophysical Approach for the Demarcation of Uranium Mineralized zones between Beldih and Barabazar region in South Purulia Shear Zone, India

Mittal S., Maurya P., Sengupta D. and Sharma S.P.
Department of Geology and Geophysics, Indian Institute of Technology Kharagpur, INDIA

Abstract: Integration of different geophysical methods that are supplementary in their sensitivity to physical properties of rocks is a better approach for exploration of mineral resources as it gives advantages of yielding more precise results as well as it is relatively rapid. In present study we have applied VLF-EM survey couple to Radiometric surveys along four profiles to understand the nature of correlation as well as the demarcation of probable uranium occurrences in the South Purulia Shear Zone (SPSZ). Uranium is the most important radioactive element and is used in many applications like generation of power and other commercial purposes. Its need would further be enhanced due to the paucity of fossil fuels. In general, shear zones are the important geological locations to locate the occurrence of uranium mineralization. Uranium presents a high electrical conductivity and its presence in the subsurface rocks provides excellent conductivity contrast between the ore deposit and neighboring rocks. Therefore, uranium mineralization can be best delineated by electrical and electromagnetic methods. Besides confirming the presence of radioactive mineralization, radiometric survey is the most suitable not only to understand the nature of radioactive (U, Th and or K concentration) mineralization but also to look for economic uranium, thorium and potassium deposits. Occurrence of radioactive mineral in an outcrop enhances the background radiation of the area. After applying this integrated approach we were able to delineate the geometry of sub-surface structure, lateral as well as vertical extent of the zone of mineralization, presence or absence of radioactive mineral in it, and also pin-points the location for subsequent exploratory drilling. It is found that the approach is more cost-effective, gives better and more reliable data and was successful in identifying the zone. Such an integrated approach in using specific geophysical techniques, for shallow subsurface imaging being entirely non-destructive is better than other routine methods that employ coring, puncturing or producing vibrations in the crust to get subsurface images for various applications.
Keywords: integrated geophysical studies, VLF, SPSZ, surface gamma activity, uranium mineralization.

ISCA-ISC-2012-6ES-03

Geospatial Technology in Landslide Susceptibility Mapping and Mitigation – A Case Study in Sirumalai Hill, Tamilnadu, India

Mayavan N.[1] and Sundaram A.[2]
[1]Department of Futures Studies,
[2]Department of Solar Energy, Madurai Kamaraj University, Madurai, INDIA

Abstract: Landslide is among the major hydro geological hazards that affect large part of India, especially Western Ghats and Eastern Ghats. Landslide Susceptibility map delineates the potential Zones for occurrence. The paper presents an integrated GIS and Remote sensing approach for Landslide susceptibility mapping in part of Sirumalai hill, Tamil Nadu. Some important Causative factors were selected in Satellite data, topographic maps, field data and other information maps are prepared in GIS. Numerical rating scheme for the factors was developed for the spatial analysis in GIS environment to arrive at landslide susceptibility map of the area. The resulting of the landslide susceptibility mapping is classified in five classes: very high, high, moderate, low, very low.
Keywords: Landslide, susceptibility Map, Mitigation, GIS & Remote Sensing.

ISCA-ISC-2012-6ES-04

Response of clay Mineral Assemblages to the Paleoenvironmental Changes during last 250kyr in the Northwestern Arabian Sea

Das S.S. and Rai A.K.
Department of Earth and Planetary Sciences, University of Allahabad, INDIA

Abstract: The Arabian Sea is a natural laboratory for the study of late Quaternary land-ocean interaction and paleoenvironmental changes. Mineralogy of the <2ìm fraction of the late Quaternary sediments collected from ODP site 722B, located on the Owen Ridge, north-western Arabian Sea used to understand the influence of provenance and paleoclimatic conditions. Terrigenous clay sized minerals present include illite, chlorite, smectite, kaolinite, palygorskite, quartz, plagioclase feldspar and dolomite. These detrital clay and non-clay mineral associations were derived from various sources: illite, chlorite and feldspar rich sediments from Indus, Iran-Makran and Arabian Peninsula; kaolinite rich sediments from Somalia, Persian Gulf and Gulf of Oman; smectite enriched sediments from the Deccan Traps and Arabian Peninsula; dolomite and palygorskite rich sediments from Arabian Peninsula; quartz from variety of source rocks. The detrital sediments were largely aeolian, transported to the site by northwesterly winds. The terrigenous contribution was more during the glacial stages mainly due to low sea level and erosion of exposed continental shelf by wind. The cold and dry periods during glacials were responsible for physical weathering and contribution of higher amounts of chlorite and moderate amounts of illite. The increased kaolinite content, higher values of humidity indices and poorer illite crystallinity reflect high humidity that resulted strong hydrolysis activity during the interglacial periods. The increased CaCO3 and organic carbon during above periods also indicate less terrigenous dilution and intensified southwest monsoon led upwelling which resulted into higher surface biogenic productivity.

ISCA-ISC-2012-6ES-05

Response of Indonesian Seaway Closure to the Eastern Indian Ocean Benthic Foraminiferal Assemblages

Ajai Kumar Rai and Virendra Bahadur Singh
Department of earth & Planetary Sciences, Allahabad University, Allahabad-211002, INDIA

Abstract: The deep sea benthic foraminifera of last 6.0 myr in the eastern Indian Ocean, offshore Western Australia were examined to understand the tectonically/climatically induced paleoceanographic changes in this region. Before ~3.5 Ma, characteristic benthic foraminiferal assemblages as well as more diverse fauna reflected relatively oligotrophic and warm bottom water conditions. Prior to the final closing of the Indonesian Seaway at about 4-3 Ma (Cane and Molnar, 2001) a permanent El Nino like condition was existing due to continuous exchange of warm water mass from the south Pacific to the eastern Indian Ocean. At the beginning of Late Pliocene (i.e. ~3.5 Ma) relative abundance of *Uvigerina proboscidea*, percentages of total infaunal taxa and high productivity taxa increased along with higher benthic ä^{18}O values whereas faunal diversity showed distinct decline. These significant faunal changes suggest the development of pronounced upwelling resulting into higher surface water productivity. The passage for warm south Pacific water was almost blocked due to effective closing of seaway which established new pathway for cold north Pacific water flowing through the Indonesian Archipelago from more westerly side. The closing of Indonesian Seaway during the late Pliocene

was responsible for the development of conditions largely similar to the glacial intervals. This involves the more influence of cold, deep and northward flowing Western Australian Current (WAC) and cessation of warm and southward flowing Leeuwin Current (LC) (Wells and Wells, 1994). Westerly airstreams also strengthened which started impinging onto west coast of Australia and accompanied by increased strength of tropical easterlies blowing off the Australian landmass (Kolla and Biscay, 1977). These intense offshore winds were possibly responsible to form Ekman transport resulting into potential upwelling of cold and nutrient rich bottom water at low latitudes off the west coast of Western Australia, which intensified the development of higher primary productivity systems in this region. Thereafter, faunal records suggest marked fluctuations in the upwelling and surface water productivity probably in response to the changing strengths of LC and WAC during the Pleistocene interglacial/glacial cycles.

ISCA-ISC-2012-6ES-06

Middle Miocene Freshwater Bivalves and Gastropods from the Lower Siwalik Rocks of Jammu Province, India

Parmar Varun
Department of Geology, University of Jammu, Jammu-180 006, INDIA

Keywords: Lower Siwalik, Jammu, Middle Miocene, Freshwater, Bivalves, Gastropods During recent field work around Ramnagar in Jammu province a fossiliferous horizon comprising of molluscs near village Dehari (8 km southwest of Ramnagar) was delineated. The fossiliferous site lies within the Lower Siwalik Subgroup and has been dated at 14–13 Ma on rodent based biochronology. The morphology of the recovered molluscan fauna and their comparative study with the known forms shows that the molluscs recovered from the study area comprises of bivalvia: *Lamellidens* indet. and *Parreysia* cf. *Parreysia* (*Parreysia*) *tatrotensis*, and gastropoda: Thiaridae and Mesogastropoda, respectively. Until now the presence of molluscs in the Lower Siwalik deposits of Jammu province was almost unknown. The present finds though meager, thus becomes significant. Moreover, the presence of *Lamellidens, Parreysia* and Thiaridae further strengthens the freshwater nature of the Lower Siwalik deposits and attests to the prevalence of warm and moist conditions during the Lower Siwalik times in Jammu region.

ISCA-ISC-2012-6ES-07

Late Pliocene Gastropods and Bivalves Fossils from the Nagrota Formation of Jammu Siwalik, Jammu and Kashmir, India

Kundal Som Nath
PG Department of Geology, University of Jammu, Jammu-180006, INDIA

Abstract: A field visit was carried out in the year 2011 under a DST funded project (No. SR/FTP/ES-07/2008 dated: 10.9.2008) in the Nagrota Formation, the Upper Siwalik Subgroup of Jammu province, Jammu and Kashmir, India. During the field visit five species of gastropods and two of bivalves are being reported from the mudstone horizon immediately underlying the geochronologically dated bentonititized tuff band (2.48 m.y.) exposed at Barakhetar village in a stream cutting section. The reported fauna comprises Gastropods: *Gastrocopta* sp., *Gyraulus* sp. indet., *Viviparus bengalensis, Viviparus* sp., *Bellamya celispiralis* and Bivalves: *Lamellidens lewisi, Oxynaia* sp. indet. Stratigraphically, the fossil (gastropod and bivalve) bearing mudstone horizon is belongs to the Nagrota Formation (= Pinjor Formation), Upper Siwalik Subgroup of Jammu Province, Jammu and Kashmir, India and located about 30km east of Jammu city. The reported fauna indicates fresh shallow water lacustrine palaeoenvironmental conditions existed during Late Pliocene times.

ISCA-ISC-2012-6ES-08

Land Use Land Cover Change Detection using Remote Sensing and GIS Techniques A case study of Golaghat District of Assam, India

Phukan P.[1] and Thakuriah G.[2]
[1]Gauhati University, Assam, INDIA
[2]ASTEC-ARSAC, Assam, INDIA

Abstract: Changes in Land use Land cover is a dynamic process taking place on the surface and it become a central component in current strategies in managing natural resources and monitoring environmental changes.Digital change detection is the process that helps in determining the changes associated with land use and land cover properties with reference to geo-registered multi temporal remote sensing data. The objective of this paper is to analyse the land use land cover changes in Golaghat district of Assam. Using multi temporal remote sensing data(LANDSAT ETM 1989, and IRS LISS III 2009) land use land cover changes has been performed. Result shows the changes that has been occurred during 20 years of period.

Keywords: Land use, Land cover,Change analysis.

ISCA-ISC-2012-6ES-09

Diagenetic Heterogeneity and Its Impact on Reservoir Property of the Oil Bearing Lakadong Member in the Eastern Part of Upper Assam Basin, India

Borgohain, P.[1*], Hazarika S.[2] and Gilfellon G.B.[3]
[1]Department of Applied Geology, Dibrugarh University -786 004, Assam, INDIA
[2]Department of Geology, Sibsagar College, Joysagar-785 665, Assam, INDIA
[3]R&D Department, Oil India Limited, Duliajan-786 602, Assam, INDIA

Abstract: The Upper Assam foreland basin is an important onshore petroliferous region of India with reservoir rocks ranging in age from Upper Palaeocene to Miocene. The Lakadong Member of Upper Palaeocene-Eocene age is of interest because it contains sandstone reservoirs which are prolific producers of oil and gas in spite of having low thickness (1-13 metres). Diagenetic changes have played a major role in controlling the reservoir qualities of these sandstones. Rock thin section as well as scanning electron microscope (SEM) studies reveals that these sandstones have undergone all the stages of diagenesis resulting in variation of petrophysical properties from well to well within the same reservoir. These sandstones contain large secondary pores developed mainly due to the activity of interstitial solutions and post depositional tectonic effects. SEM analysis reveals the presence of kaolinite, illite chlorite and smectite. Overgrowths and development of secondary minerals along with occurrence of various types of clay minerals detracts reservoir quality in certain horizons.

Keywords: Digenetic Heterogeneity, Reservoir Quality, Lakadong Member, Upper Assam

ISCA-ISC-2012-6ES-10

Tectono-Provenance and Reservoir Rock Characteristics of the Tipam Sandstones in Parts of Upper Assam Basin, India

Borgohain P.[1*], Saikia G.[1] and Bharali B.[2]
[1]Department of Applied Geology, Dibrugarh University -786 004, Assam, INDIA
[2]Oil India Limited, Duliajan-786 602, Assam, INDIA

Abstract: The Tipam Sandstone Formation belongs to Late Miocene to Early Pliocene age and it is one of the main oil producing horizon of Upper Assam Basin. It varies widely in thickness from area to area owing to a major unconformity at the top. The sandstones are composed mainly of quartz, rock-fragments, and mica. The contribution of quartz varies from 43.5% – 57.5%. Both the monocrystalline and polycrystalline quartz are reported. Feldspars varies from 2.2% - 2.5%, rock-fragments varies from 7.0% - 7.5%. The sandstones have undergone all the stages of diagenesis. Dissolution features, quartz overgrowth, transformation of secondary minerals are frequently reported. These diagenetic changes have a direct control on the reservoir quality of the sandstones. The sandstones are mainly subarkosic and wacke type. The sandstones are derived from varied sources however middle rank of metamorphic origin is dominating. Volumetric analysis of major oxides suggests that the sandstones are derived from active continental margins and subordinately from the continental island arc provenance and the sediments were deposited in a fluvial environment.

Keywords: Tectonic setting, Reservoir characteristics, Tipam Sandstone, Upper Assam

ISCA-ISC-2012-6ES-11

Construction, Analysis and Behaviour of Stone Columns

Jamal Mohsin, Mishra Anubhuti and Solanki C.H.
Applied Mechanics Department, SVNIT, Surat, Gujarat, INDIA

Abstract: Vibro replacement stone columns are a ground improvement technique to improve the load bearing capacity and reduce the settlement of the soil. On many occasions, it is noted that the local soil is by nature, unable to bear the proposed structure. Hence the use of ground improvement techniques may be necessitated. Use of stone columns is one such technique. Stone column technique seems to be very suitable and favourable ground improvement technique for deep soft soil improvement. Stone column technique is a well-known tool and widely spread through the world. It has been used successfully for the improvement of the engineering properties of saturated soft soils. Many events have been reported showing the advantages of this technique. During the last two decades many improvements about this technique regarding the construction equipment's and materials have been made. This paper discusses the techniques, methods of construction of stone columns, mechanisms of stone column behaviour under load and associated design philosophies.

Keywords: Stone Column . Methods of construction .Design parameters .Ultimate load analysis .Settlement evaluation

ISCA-ISC-2012-6ES-12

Depositional Environment of Oil Bearing Horizons of Lakadong Member in Parts of Upper Assam Shelf, India

Hazarika S.[1] and Borgohain P.[2]
Department of Geology, Sibsagar College, Joysagar, INDIA
Department of Applied Geology, Dibrugarh University, Dibrugarh, INDIA

Abstract: The oil bearing horizons of the Lakadong Member in parts of the Upper Assam Shelf bear heterogeneity in their depositional environment. On the basis of the various approaches that are made for characterizing its depositional environment it is found that the sandstones of the Lakadong Member of the present study were deposited in three broad sub- environmental phases. The initial phase of deposition has resulted in the formation of the source rock units in the form of carbonaceous shale and coal and thin bands of sandstones which is included in the Lithounit-I, were deposited in a nearshore marshy lagoonal environment, source rock are distributed in and around paleo- shorelines. The second phase of deposition resulted in the formation of highly porous and permeable reservoir sands of Lithounit-II. The sand stones are medium grained and well sorted. The major producing horizons are interpreted as having been deposited in a nearshore strandplain/barrier-bar complex. The third phase of deposition did not result in the formation of good reservoir sandstones and deposited in shallow marine environment.
Keywords: Depositional environment, Nearshore, Marshy, Lagoonal, Upper Assam Basin.

ISCA-ISC-2012-6ES-13

A New Fossil Fish from the Kota Formation of Pranhita-Godavari Valley Peninsular India

Kumar Deepak, Singh Sandeep and Parmar Varun
PG Department of Geology, University of Jammu, Jammu 180 006, INDIA

Abstract: Kota Formation which occurs exclusively in Pranhita-Godavari Valley is a well known member of Upper Gondwana in Indian stratigraphy. Bulk samples of greenish-grey mudstone and grey siltstone associated with limestone bands of Jurassic Kota Formation exposed near Paikasigudem village in Adilabad District of Andhra Pradesh, were processed by soaking in water for disintegration followed by screen washing. The residue so obtained was dried and the faunal remains were picked up using binocular microscope. A rich assemblage of vertebrates represented by isolated scales, fin ray segments, teeth, jaw fragment and palatine bones of fishes and teeth of mammals and reptiles were recovered. Until now the area was known to be inhabited by fishes like *Lepidotes deccanensis* and other indeterminate semionotids; pholidiphorid fishes:*Pholidophorus kingi ,P.indicus*; a coelacanth fish: *Indocoelacanthus robustus* and fresh water hybodont sharks:*Lissodus indicus,Polyacrodus sp.* during the Jurassic times. Here we report a new fish genera previously unknown from the Jurassic of India that we assign to *Pycnodus* based upon the dental morphology. The addition of the new form throws new light on the Jurassic fish diversity of India.
Keywords: Jurassic, Kota, Fish, *Pycnodus.*

ISCA-ISC-2012-6ES-14

Eocene Palynostratigraphy and Sequence Boundaries of oil Bearing Sediments in Parts of Upper Assam Shelf: a Case Study from Well a in Dibrugarh District, India

Deka Kalita Kalpana[1], Borgohain Biraj[1], Bezbaruah Devojit[1], Dutta Sanjukta and Gilfellon G.B.[2]
[1]Department of Applied Geology, Dibrugarh University, Assam, INDIA
[2]Oil India Limited, Duliajan, Assam, INDIA

Abstract: Palynological data and Geophysical log from 559m thick Eocene sediments (depth ranging from 3270 m to 3851m) in the well A in Dibrugarh District has documents palaeoenvironment, sequence boundaries and age in parts of the Upper Assam foreland basin. The reservoir in Palaeocene/Eocene Formation in this basin are thin and discontinuous in nature but with good reservoir characteristics. Sand to sand correlation is very much inconsistent, but as a group seems to be consistent and traceable in large part of the area. Two major sequence associations have been identified, (1) First 2nd order sequence (from 3772m to 3851m) is of shallow marine origin characterized by alteration of dominant sand, a few shaly sand and three limestones. *Dandatiaspora* sp and *Pellicieroipollis* sp in lower part (depth 3851m) indicate Early Eocene while in upper part (above 3851m) *Proxapertites cursus* and *Psilodiporite hamonmenii* assemblage indicate its age as Middle Eocene. It comprises average 3-4 m thick limestone beds, two 1m thick coal seams, 25m thick sand body with alternating small shaly sand bands. Within this sequence five 4th order sequences are present and these 4th

order sequences are demarcated by four 4th order sequence boundaries. (2) Second 2nd order sequence (from3270m to 3772m) is comprised of dominant sand, shaly sand and frequent occurrence of coal beds. *Palmaepollenite kutchensis* and *Proxapertite operculatus* assemblage of Late Eocene indicate transitional environment. Thirty six 4th order and four 3rd order sequence boundary are identified in the studied sequence. This sequence architecture appears to have been tectono-eustatically controlled.

ISCA-ISC-2012-6ES-15

A Study about Wetlands of Barmer District of Rajasthan: Maps and Statistics

Ram Nimba
Dept. of Geography, J. N.V.U., Jodhpur, Rajasthan, INDIA
Mahila P.G. College, K.N.N., Jodhpur, Rajasthan, INDIA

Abstract: Barmer is located in the western part of the state forming a part of the Thar Desert. The district is surrounded by Jaisalmer in the north, Jalore in the south, Pali and Jodhpur in the east and Pakistan in the west. The district is located in the south-west region of the state lies in between 24° 58' and 26° 32' North latitude and 70° 05' and 72° 52' East longitude. The total area of the district is 28387 sq. kms. Barmer is famous for its carved wooden furniture and hand block printing industry. The temperature varies from 450 to 9 C 0 and the average rainfall in the region is 28 cms. The Luni river (salt river), which rises in the hills of south-west of Ajmer city. After flowing into Jalore district it finally loses itself in marshy areas of Rann of Kutch. Total 2124 wetlands are mapped including 1584 small wetlands (< 2.25 ha.) with 44638 ha. area. The River/ Stream with 19700 ha. contributed 44.13% to the total wetland area. The Tanks / Ponds with 11189 ha (25.07% area) is the second major wetland category, followed by Intertidal mud flats with 5294 ha area i.e. 11.86%. Thus, the district is dominated by man-made wetlands.

Keywords: latitude, wetlands, dominated, longitude, marshy.

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Sterilization of Retort Flexible Pouches By Electromagnetic Field

Nazanin Zand
Department of Food Industrial Engineering, Varamin-Pishva Branch, Islamic Azad University, Varamin, IRAN

Abstract: The influence of high frequency electromagnetic field and combination of it with thermal processing on properties of two kinds of report flexible pouches which were used for packaging cooked meat meal later during EMI sterilization with variable voltage 1-20 kV/cm, and square-wave pulses, have been studied. The main goals were carried out in following directions : Investigation of the barrier and mechanical properties of ten types of food grade multilayer flexible materials, characterized by varying of the composition and thickness of layers from which we chose two types of composite films, depending on: the composition and thickness of the composite films inner layer - the thickness and amount of the adhesive coating; - the conditions of heat and EMI treatment for pouches. Determination of the strength properties of pouches to ensure integrity of packaging, Chosen combined polymeric materials developed optimal regimes of seams sealing of flexible pouches and used sterilization technology modes, and ensure the safety of the pouches have allowed to replace traditional materials especially for military foods
Keywords: Retort flexible pouch, high frequency electromagnetic field.

ISCA-ISC-2012-7ENGS-02

Storm Water Management for An Indian Town Employing Water Sensitive Urban Design Philosophy

Bhushan Abhishek[1] and Joshi Himanshu[2]
Department of Hydrology, Indian Institute of Technology, Roorkee, UP, INDIA

Abstract: Hydrology of urban areas is dominated by preponderance of impervious surfaces and presence of manmade drainage channels. Engineering objective when dealing with urban hydrology is to provide for control of peak flows and maximum depths at all locations within the drainage system. Storm Water Management Model (SWMM) is a rainfall runoff simulation model which can be used for simulation of runoff quantity and quality from primarily urban areas. The ADARSH NAGAR of Roorkee town in Uttarakhand has been taken up for the study. Field survey and filed data have been collected to provide properties of subcatchments and existing drainage as per requirement. A record of observed daily rainfall values, of length 30 (1981-2010) years was taken. In the present study, an attempt has been made to estimate the generated runoff from an urban watershed for design storms of hyetographs for 4-hr, 6-hr and 12-hr duration of 25 year return period. It is found that existing layout and capacities are not able to handle 25 year storm event. This study provides an understanding of urban hydrology and microscopic approach to planning of urban drainage and illustrates procedure for achievement of this engineering objective of urban hydrology i.e. control of peak flows within the drainage system.
Keywords: Hydrology, urban area, microscopic approach.

ISCA-ISC-2012-7ENGS-03

Energy Efficient Clustering Algorithms for Wireless Sensor Networks

Afaroz Mansoori[1] and Rashmi Pant[2]
[1]Digital Communication, M.I.T. Ujjain, MP, INDIA
[2]Electronics and Communication Dept., M.I.T. Ujjain, MP, INDIA

Abstract: Wireless sensor networks are an emerging technology for monitoring physical world. The energy constraint of Wireless sensor networks makes energy saving and Prolonging the network lifetime become the most important goals of various routing protocols. Clustering is a key technique used to extend the lifetime of a sensor network by reducing energy consumption. Also putting few heterogeneous nodes in wireless sensor network is an effective way to increase the network lifetime and stability. The energy saving schemes for homogeneous wireless sensor networks do not perform efficiently when applied to heterogeneous wireless sensor networks. Thus, Energy efficient clustering protocols should be designed for the characteristic of heterogeneous wireless sensor networks. This paper surveys different energy efficient clustering protocols for heterogeneous wireless sensor networks and compares these protocols on various points like, location awareness, clustering method, heterogeneity level and clustering Attributes.
Keywords: Wireless sensor network, clustering algorithm, energy efficient, heterogeneous

ISCA-ISC-2012-7ENGS-04

Process Modelling and Control of Flexible Single Link Robotic Manipulator: MATLAB based Simulation Approach

Rana Dinesh Singh, Pathak Kushangi and Deepika
Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA

Abstract: Robot and robot-like manipulators are now commonly employed, in hostile environment such as at various places in an atomic plant for handling radioactive materials, to construct and repair space stations and satellites. Most of the robotic manipulators are designed and built in a manner to maximize stiffness in order to minimize the vibration of the end-effectors. Many industrial manipulators face the problem of arm vibrations during high speed motion. In order to improve industrial productivity, it is required to reduce the weight of the arms and to increase their speed of operation. For these purposes, it is desirable to build flexible robotic manipulators. Dynamics of flexible robotic manipulators are nonlinear. The dynamics of nonlinear system can be linearized using classical and modern control theory and therefore able to characterize the nonlinear system. Nonlinear differential equations are used to describe the dynamic characteristics of nonlinear systems. In this paper, a mathematical model of flexible single link robotic manipulator has been developed. The control strategies like PID, LQR and State feedback controller have been implemented for controlling the tip position of flexible single link robotic manipulators through MATLAB. State feedback controller uses pole placement approach, while the linear quadratic regulator (LQR) is obtained by resolving the Riccati equation. The best control strategy for controlling the tip position of flexible single link robotic manipulator is obtained by implementation of LQR controller. Finally, it is concluded from our study that LQR control method is the best method among PID and State feedback controller to control the flexible link manipulators.

ISCA-ISC-2012-7ENGS-05

Mathematical Modeling and Control of Flexible Double link Manipulator: MATLAB based Simulation Approach

Pathak Kushangi, Rana Dinesh Singh and Deepika
Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA

Abstract: In present work we have investigated the various aspects on mathematical modelling and control strategies of flexible double link manipulator. A mathematical model of flexible double link manipulator has been developed using lagrangian method. This mathematical model has been characterized using classical and modern control theories. Their time domain and frequency domain analysis has been carried out and our study show that the mathematical model of flexible manipulator is highly unstable. Different control strategies such as PID, LQR and State feedback controller have been implemented for controlling the tip position of flexible double link manipulator using MATLAB programming. State feedback controller uses pole placement approach, while the linear quadratic regulator is obtained by resolving the Riccati equation. The best control strategy for controlling the tip position of flexible double link manipulator is obtained by implementation of LQR controller. Finally, it can be concluded from our study that LQR control method is the best method as compare to PID and State feedback controller for controlling the flexible link manipulator.

ISCA-ISC-2012-7ENGS-06

Increasing Combusting Resistance for Advanced Composites by using fire Retardants

Al-Zubadi Ali A.[1], Al-Mosawi Ali I.[2] and Al-Maamori Mohammad H.[1]
[1]Materials Engineering College, Babylon University, IRAQ
[2]Technical Institute-Babylon, IRAQ

Abstract: The aim of this paper is to use inorganic fire retardant mixture consist of zinc borate- antimony trioxide to increase the fire retardancy for advanced composite material consist of araldite resin reinforced by carbon-Kevlar fibers .In first stage a surface layer from zinc borate as a coating layer of (4mm) thickness was used then, this system was exposed to a direct Oxyacetylene torch flame with flame exposure intervals 10,20mm, and study the range of resistance of retardant material layer to the flames and protected the substrate . The second stage was to form a hybrid fire retardant by added antimony trioxide with various amount (10%,15%,20%,25%,30%) to zinc borate for enhance the action of this material to react flame and exposure this hybrid material to same flame temperature and exposure intervals. Method of measuring the surface temperature opposite to the flame was used to determined the heat transferred to composite material. The best results was obtained with large exposed interval and large percentage from protective layer which is zinc borate with (30%) antimony trioxide .

Keywords: Fire Retardancy, Advanced Composite, , Inorganic Retardants.

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Study the Efficiency of adsorption Leshman's Stain Dye on the Surface of Some Metal Oxides

Al-Maamori Mohammad H.[1], Al-Mosawi Ali I.[2], Khudhair Shaymaa H.[3] and Muttaleb M.K.[4]
[1]College of Materials Eng, Babylon University, IRAQ
[2]Technical Institute-Babylon, Babylon, IRAQ
[3]College of Education, Babylon University, IRAQ
[4]College of Science, Babylon University, IRAQ

Abstract: The adsorption behaviors of Leshman's Stain in aqueous solution an germanium oxide and yttrium oxide as an adsorbent were studied. A series of experiments were undertaken in a batch adsorption technique to access the effect of the process variables i.e. initial dye concentration, contact time ,initial pH, adsorbent dose ,temperature (298K), adsorbent dosage (0.1gm) higher values of the initial pH(7.0) for $GeO_2$and Y_2O_3 respectively . The equilibrium in the solution was observed within (30min)of Leshman's Stain on GeO_2 and Y_2O_3.The equilibrium isotherm for Leshman's Stain was determined to describe the adsorption processes .The results showed that the equilibrium data were fitted by both of the Langmuir and Freundlich isotherms on GeO_2 and Y_2O_3 surfaces. Also the results obtained shows the isotherms were (S_4) on GeO_2 and (S_3) on Y_2O_3 according to Giles classification. The thermodynamic parameters at compound such as eH, eG and eS of adsorption were calculated.

Keywords: Adsorption behaviors ,Leshman's Stain, Metal oxides.

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Microcontroller based Warning System for Pest control management: A Simulation Approach

Kumar Ramesh[1], Shivling V.D.[2] and Dinesh Singh Rana[1],
[1]Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA
[2]Central Scientific instruments organization, Chandigarh, INDIA

Abstract: Pest Management is a method used to control pests in an effective manner. By reducing our dependence on pesticides, insect pests are becoming major irritants in agriculture and horticulture. 10% of the produce is lost to insect pests. Various problems have arisen with the evolution of insect pest becoming more and more dependent on increasing doses of agro-chemicals. The growth rate of plants and insects is highly dependent on ambient temperature. If a plant or insect is too cold, it cannot grow. But at some higher temperature (base temperature) growth begins to take place. The warmer the plant or insect is, the faster it will grow until a limiting temperature (cut off temperature) is reached. The prime objective of present work is the measurements of various parameters involved in pest management and derive a relation between various parameters to find out the optimum conditions for pest growth. This system provides capability of controlling the growth of pest and to increase crop growth which enhances plant health. Our System is PIC microcontroller based instrumentation system for showing various parameters on LCD. This system is consisting of various sensors to measure different parameters of environment and leaf e.g. Air Temperature, Air Humidity and Leaf Humidity. The developed Early Warning System for Pest Control management automatically scans all environmental sensors, and their data are store in an internal ROM of the system. In this system we acquire all the information which will affect crop growth (which is mainly dependent on change in humidity, change in temperature). In present work, various parameters involved in pest management have been discussed and a relation between various parameters to find out the optimum conditions for pest growth has been established. The relationship between the various parameters involved in pest management indicated by severity index.

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Experimental Studies on Gasification of Chicken litter in Fluidized Bed Gasifier

Dayananda B.S.[1] and Sreepathi L.K.[2]
[1]Department of Mechanical Engineering, Sapthagiri College of Engineering, Bangalore, Karnataka, INDIA
[2]Department of Mechanical Engineering, J.N.N. College of Engineering, Shimoga, Karnataka, INDIA

Abstract: Presently the utilization of energy is mainly dependent on the fossil fuels. The composition and behavior of the atmosphere is changed drastically due to its polluting components. The gap between the energy requirement and energy production is increasing and it can be reduced by utilizing through bio-mass as renewable energy source. Chicken litter is one of the abundantly available and technical feasible fuels, which can fill the gap between the energy productions to energy demand. In this paper a detail discussion on the process of fluidized bed gasification to utilize as an energy

source is made and theproducer gases obtained from the gasification process is compared with the other author for validation. The gasification is made for the equivalence ratio of 0.12 to 0.26 and it was found that the compositions of Carbon monoxide, carbon dioxide, methane and hydrogen are obtained within the acceptable range in comparison with the other authors.

Keywords: Fluidized Bed technology, Gasification process, Chicken litter.

ISCA-ISC-2012-7ENGS-10

FEM based Analysis of Piezoelectric Sensor using Consol : A Simulation approach

Gaur Anshu Mli and Rana Dinesh Singh
Department of Instrumentation Engineering, Kurukshetra University, Kurukshetra, INDIA

Abstract: This paper presents the application of piezoelectric thin film in sensor through Finite element analysis. A piezoelectric thin film is placed in between the two aluminium layers where above and below aluminium layers act as electrodes. In FEA, the whole structure is modelled by 3D geometry in COMSOL 4.2. The simulation was done to analyze the mechanical response of piezoelectric thin film by applying a test voltage to electrode, where bottom electrode act as reference electrode. This approach can be further be utilized by transforming mechanical stress into electric potential in energy harvesting device. This research work confirms the piezoelectric thin film capability in energy generation.

Keywords: Piezoelectric, Finite element method, thin film, electrodes, stress.

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Determination of DOA by the Analysis of EEG using DWT and PCA Techniques

Mehta Aarti, Sanjeev[1], Singla Sonia and Rana Dinesh Singh
Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA
[1]Central Scientific instruments organization, Chandigarh, INDIA

Abstract: During surgical procedures anesthetics are being used all over the globe. This widespread use of anesthetic agents has grown simultaneously with the identification of the need for patient monitoring during the state of narcosis. Over or under-dosage of anesthetics will cause adverse effects on the patient and hence a proper dosage of anesthetics is required for maintaining adequate respiration and comfort level of patient during the surgery. In present study, Discrete Wavelet Transformation (DWT) of EEG fluctuation signal has been analyzed in order to assess the depth of anesthesia. Different stages of anesthesia i.e. awake and anesthetic sleep have been distinguished. Several EEG parameters have been advocated for estimation of DOA (depth of Anesthesia). Analysis of EEG is done by calculating all parameters found in parietal region and central region of brain such as average frequency, power spectral density, total power, band power, mean and standard deviation. These parameters are used to determine depth of hypnosis. These parameters linearly describe the awake and sleep state of the patients. These parameters are correlated with the BIS monitor to check their best accuracy for DOA to differentiate between awake and sleep state. DWT using MATLAB Toolbox and Principal component analysis (PCA) have been used for the analysis of EEG to determine the DOA.

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Simulation of Traditional Composites Under Thermal Loads

Srinivas G., Shiva Prasad U., Manikandan M. and Praveen Kumar A.
MIT-Manipal, Karnataka, INDIA

Abstract: Functionally Graded Materials (FGM) has continuous variation of material properties from one surface to another. The gradation of properties in an FGM reduces the thermal stresses, residual stresses, and stress concentrations found in traditional composites. This paper will explore analysis of FGM flat plates under pressure i.e. thermal loading in order to understand the effect variation of material properties has on structural response. Theoretical formulation of various material properties is done using Rule of mixtures. The plate is then modeled and subjected to specific boundary conditions after which thermal analysis is carried out. The convergence studies with respect to varying mesh and layers are carried out in order to obtain accurate results. When subjected to thermal loads, the displacements and stresses vary with different metal/ ceramic proportions, in addition to this; deflection also varies greatly through the thickness. the variation of the same parameters with changing volume fraction of ceramic is also understood. Results are compared to published results in order to show the accuracy of modeling FGMs using ANSYS software.

Keywords: Composites, Structural, Thermal, Mesh size.

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Preparation and Investigation of PANI/ZnO Composite film for Nitrate Ion Sensing Application

Singla Sonia and Rana Dinesh Singh
Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA

Abstract: PANI/ZnO composite film has been synthesized by electrochemical deposition method. FTIR, UV-Visible spectroscopic and cyclic voltammeteric techniques were used to characterized the composite films. The characteristics of Hybrid Film have compared with the characteristics of ZnO and PANI films. I-V Characteristics show different peaks of anodic current which indicate change in oxidation potential of the nitrate ions. The current peak shifts in I-V spectra of Hybrid film show an enhancement in the sensing ability of film. FTIR spectra of PANI and PANI-ZnO composite in KBr shows the same characteristics peaks but there was a peak shift corresponds to PANI peaks in composite PANI-ZnO film. This shift may be attributed to the fact that there is interaction between PANI-ZnO, and strong bonding interaction takes place with the formation of hydrogen bonding between ZnO and NH group of PANI. UV visible spectra of ZnO, pristine PANI and composite PANI-ZnO, are similar except a blue shift has been observed in composite film which may ascribed to the selective interactions between ZnO and the quinoid ring of PANI. An enhancement in characteristics peak intensity of hybrid film has been observed as compared to pristine film which could be attributed to the interaction between ZnO nanoparticles and PANI molecules.

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Automation and Process Control of a Power Plant Superheater – A MATLAB/SIMULINK Approach

Panjeta Jaideep and Rana Dinesh Singh
Department of Instrumentation, Kurukshetra University, Kurukshetra, INDIA

Abstract: Superheated steam temperature of boiler in thermal power plant is characterized as time varying and nonlinear process. It is hard to achieve a satisfactory performance by the conventional proportional-integral-derivative (PID) cascade control scheme. In this paper, we have investigated the possibility of re-tuning of the operating controller or designing a more efficient control strategy to improve the performance of the system. A mathematical modelling of power plant super heater have been developed based on physical and thermo dynamical laws and thermal process model identification have been achieved using Matlab System identification tool. Also a comprehensive analysis of thermal process modelling of power plant super heater has been carried out in time domain as well as in frequency domain. Several controllers of conventional and modern control scheme have been successfully designed & implemented to control the temperature of power plant super heater. The functioning of Super heater is automated successfully through Matlab/Simulink Approach. The System identification toolbox is executed as a method to adjust the model parameters based on the experimental data. The comparison between the responses of the corresponding models with the responses of the plant subsystems validates their accuracy in the steady-state and transient conditions. Simulation results show the effectiveness and feasibility of the developed model in term of more accurate and less deviation in the corresponding subsystems. Comparison between the responses of the developed models with that of a model obtained based on the output error method indicates the accuracy and fitness of the proposed modelling approach. These models can be improved for the abnormal conditions such as start-up and shutdown modes. While comparing the responses of various controllers we find that the best response is obtained by using the LQR control method. It is found that LQR state-space method is the best control method to control a multi-output system compared to the other methods described previously.

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Sensor-A Biometric Method

Verma Prateek, Bahendwar Yogesh, Sahu Amrita, Manoj Kumar and Shrivas Akash Kumar
Dept. of Elec. and Tele. Engi., Shri Shankracharya Engineering College, Chhattisgarh S.V.T. Uni., Bhilai, CG, INDIA

Abstract: Most fingerprint matching algorithms are based on finding correspondences between minutiae in two fingerprints. In this paper we present a modification of minutiae matching method, which utilizes correlation scores between the local neighborhood areas of corresponding minutiae pairs and the edges that connect neighboring matched minutiae pairs. Minutiae based matching approach considers the overall minutiae distribution pattern between the two fingerprints. Neighborhood correlation score represents the local similarity between the matched pair of minutiae. Edge correlation score gives the resemblance of areas that in between the two corresponding minutiae pairs. With identity fraud in our society reaching

unprecedented proportions and with an increasing emphasis on the emerging automatic personal identification applications, biometrics-based verification, especially fingerprint-based identification, is receiving a lot of attention Biometrics deals with identifying individuals with help of their biological data. We match the finger prints, one that is already in the database of the sensor and second the fingerprint that we enrolled in the sensor currently by using the Boolean function X-ORING. We get the matching score and decide the result on the matching score basis, whether the fingerprint is matched or not. With the basis of that we will give it another application like attendance system.

Keywords: Fingerprint, Biometrics, Artificial Intelligence, Sensors.

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Image Cryptosystem using New Approach of Key Generation

Sahu Amrita, Bahendwar Yogesh, Verma Prateek, Sahu Sonam and Sahu Neha
Dept. of Elec. and Tele. Engi., Shri Shankracharya Engineering College, Chhattisgarh S.V.T. Uni., Bhilai, CG, INDIA

Abstract: In the digital world nowadays, the security of digital image has become more and more important because of the advances in communication technology and multimedia technology. Various researches have been developed for security issues to protect the data from possible unauthorized instructions. There are many image encryption schemes have been proposed, each one of them has its strength and weakness. This paper presents image encryption/decryption scheme using biometric template (Palm Print) and proposed key generation method. The proposed scheme is especially useful for encryption of large amounts of data, such as digital images. This scheme satisfies the characters of convenient realization, less computation complexity and good security. The salient features of the proposed image encryption method are loss-less, asymmetric public key encryption, a very large number of secret keys, and key-dependent pixel value replacement.

Keywords: Image processing, Biometric, Image encryption and decryption, Palm Print.

ISCA-ISC-2012-7ENGS-17

An Overview on the Influence of Nano Silica in Concrete and a Eesearch Initiative

Maheswaran S.[1], Bhuvaneshwari B.[1], Palani G.S.[1], Iyer Nagesh R.[1] and Kalaiselvam S.[2]
[1]CSIR-Structural Engineering Research Centre, CSIR Campus, Taramani, Chennai-600 113, INDIA
[2]Department of Mechanical Engineering, College of Engineering, Anna University, Chennai- 600 025, INDIA

Abstract: Nano science and technology is a new field of emergence in materials science and engineering, which forms the basis for evolution of novel technological materials. Nano technology finds application in various fields of science and technology. This article presents a critical review of the literature on the influence of nano silica in concrete and its application for the development of sustainable materials in the construction industry and to study the pore filling effect and its pozzolanic activity with cement towards improvement of mechanical properties and durability aspects. Thus, there is a scope for development of crack free concrete towards sustainable construction.

Keywords: Nano silica, cement paste, cement hydration, concrete, flowability, mechanical properties

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Critical Appraisal of Various Techniques used for flow Modelling in Non Prismatic Compound Open Channel Flow

Nayak B., Dash S.S. and Khatua K.K.
Department of Civil Engineering, N.I.T. Rourkela, INDIA

Abstract: Each river in the world is unique. Some are gently curve, others meander, and some others are relatively straight and skewed. The size of river geometry changes from section to section longitudinally due to different hydraulic and surface conditions called non -prismatic channel. Much works done on river hydraulics are found to be done on prismatic compound channels only. There has also been significant progress of work in meandering channels. But an area which has been somewhat neglected is that of Non-prismatic channels. This paper scrutinizes various phenomenon related to non prismatic channel in different type of flow systems. As discharge prediction is a vital issue in flood risk management and more important for a river in changed geometry. Therefore, a critical appraisal of the various techniques developed by various researchers across the globe for the past few decades to predict the stage-discharge relationship of

a non-prismatic compound channels is extremely essential. Because it will facilitate the researchers to focus on the area of river hydraulics and that may lead to solve for other related objectives. Many methods adopted and developed by earlier researchers for both prismatic and non-prismatic compound channel are analysed in this paper.

Key words: Compound channel, prismatic, non-prismatic, stage, discharge, velocity, flood, geometry.

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Regression Modeling of Gaseous Air Pollutants and Meteorological Parameters in a Steel City, Rourkela, India

Kavuri N.C., Paul K.K. and Roy N.
Department of Civil Engineering, National Institue of Technology, Roukela 769008, Odisha, INDIA

Abstract: Traditional algorithms such as diffusion model employed for estimating the distribution of pollutants in ambient air are complicated involving the solution of complex differential equations. Employing multivariate statistical models which attempt to find the underlying relationships between a set of inputs and outputs may give an easy way to predict these gaseous pollutants. A multiple linear regression model has been developed for predicting sulphur dioxide, oxides of nitrogen, ammonia and carbon monoxide in a steel city using the meteorological parameters like temperature, relative humidity, wind speed and wind direction. Results have shown a good correlation between predictors and predicted values (R^2H"0.7). A uniform effect of the meteorological parameters in distributing these gaseous pollutants has been observed.

Keywords: regression modelling, steel city, correlation analysis.

ISCA-ISC-2012-7ENGS-21

A Review Energy Production from the Waste Potato-Anaerobically

Gundaraniya Hitesh[1] and Chokshi Nikita[2]
[1]Gundraniya Hitesh, Institute of Technology, Nirma University, Gujarat 382481, INDIA
[2]Chokshi Nikita, Institute of Technology, Nirma University, Gujarat 382481, INDIA

Abstract: Potato is the world's fourth important food crop after wheat, rice and maize because of its great yield potential and high nutritive value. It constitutes nearly half of the worlds annual output of all root and tuber crops. With an annual global production of about 328.87 million tonnes, potato is an economically important staple crop in both developed and developing countries. Around 18-23% of the total production is waste potato and cannot be used as food. However this waste potato can be used to generate renewable fuel using an anaerobic digestion system. The objective of this study is to characterize anaerobic biodegradation of waste potato and to compare energy production in different condition. A two-phase anaerobic process to produce hydrogen and methane from potatoes was studied. In the first phase, hydrogen was produced using heat-shocked sludge. In the second phase, methane was produced from the residual of the first phase using methanogens. Lab scale UASB and packed bed reactor were used for treating a potato leachate. COD removal efficiency of both reactors was greater than 90% based on the total COD of the effluent. Based on the literature review we found that with increasing Organic Loading Rate (OLR) and Inoculums to-Substrate ratio (ISR) the yield of methane increases.

Keywords: Potato waste, Anaerobic digestion, leachate, biogas, methane yield.

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A Survey on M-Learning for Distance Education and its Tools

Mahajan Dheeraj[1] and Rawat Abhishek[2]
[1]Department of Computer Science and Engineering, Lovely Professional University, Jalandhar, Punjab, INDIA
[2]Department of Electronics and Communication, Venkteshwar Institute of Technology, Indore, MP, INDIA

Abstract: Every decade, learning and performance technology gets new medium, communicate and interact. Mobile technologies are commonly use in some commercial sector, but for learning purpose in education sector, its use is rare. m-Learning leads itself to new method of delivering, however that are highly suited to the "Just-Enough, Just-In Time and Just-For-Me". We present an Overview of mobile learning concepts, its role for positioning educators, its advantages and disadvantages, connected future and it's Tools on Distance Education. Mobile handheld IT devices available today, then compares the devices currently on offers, such as Personal Digital Assistant (PDAs), Mobile Phones, Laptops and Tablets PCs, in teaching and Learning.

Keywords: m-Learning; distance education; e-Learning; m-technologies; ICT, PDAs.

ISCA-ISC-2012-7ENGS-23

Simulation of an Educational Institute: Supply Chain Management

Akash Tomar, Abhishek Mishra
Infinity Management and Engineering College Sagar M.P., INDIA

Abstract: Supply chain management plays a vital role in the growth of the industry, survival in the market, the production rate and the dynamic interaction among the suppliers and the customers. Strategic decision makers need comprehensive models to guide them in efficient decision making that increases the profitability of the entire chain. System dynamic is a methodology whereby complex, dynamic and nonlinear interactions can be understood and analyzed. The objective of the paper to show the system dynamic and simulation model for the educational institute to control the losses, and also to make the policies. This paper presents a simulation of supply chain model of a new Education institute which will produce 300 engineer's yearly, and also the dynamic interaction between the companies using system dynamic approach. Under different delay conditions, rejection rates, conditions, the policy experimentations carried out considering various factors of the Education institute and their degree of development. The model results have been discussed and validated based on the actual results of a from the Education institute. This paper has addressed many important issues related to demand of the companies, passing student annually.

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The Study of Influence of Various Parameters on Viscosity of Free Fatty Acid Methyl Ester of Rice Bran oil by Response Surface Methodology

Deshpande D.P.[1], Haral S.S[2] and Kanse N.G.[3]
[1]TKIET,Warananagar,Kolhapur, MS, INDIA,
[2]Government Polytechnic, Jalna, MS, INDIA
[3]Finolex College of Engineering and Management, Ratnagiri, MS, INDIA

Abstract: As supply of fossil fuel is limited whilst energy demand continues to rise, hence alternative renewable fuels have received increasing attention for future utilization. In this respect, fermentation, transesterification and pyrolysis of biomass, industrial and domestic wastes have been proposed as alternative solutions for the increasing of energy demand and environmental awareness. In this paper response surface methodology (RSM), has been used to study the effect of variables on biodiesel production, the four variables of transesterification reaction methanol to oil molar ratio, catalyst (KOH) concentration, reaction temperature and reaction time to viscosity of rice bran oil methyl esters. Central composite design with 2^4 full factorial experiments was conducted to develop the quadratic model. The empirical model predicted that gives lowest viscosity of biodiesel would be 4.32 Cst at the follow operating conditions; a reaction time 60 min, a reaction temperature 55^0C, a catalyst concentration 1.5 wt %, and methanol to oil ratio 6: 1.The quadratic model is suitable to maximize the viscosity of biodiesel. All the properties were determined for the same experiment and these are satisfying almost all specification.

Keywords: Transesterificatio, pyrolysis, biodiesel, response surface methodology.

ISCA-ISC-2012-7-chem.E-02

Extractive Deep-Desulfurization of Model Liquid Fuel Using Ionic Liquids

Wasewar Kailas L.[1], Dharaskar Swapnil A.[1], Varma Mahesh N.[1], Shende Diwakar Z.[1] and Yoo Chang Kyoo[2]
[1]Advance Separation and Analytical Laboratory, Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, INDIA
[2]College of Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do, KOREA

Abstract: The desulfurization of model liquid fuel in the presence of ionic liquids is reported. For this purpose, the desulfurization efficiency of several ionic liquid has been tested. The effects of different ionic liquids in the removal of dibenzothiophene from n-dodecane were investigated. 1-butyl-3-methyl imidazolium chloride [bmim] Cl was screened for its dibenzothiophene extraction ability. Imidazolium based ionic liquid with chloride exhibited the highest extraction capabilities with 77.15% sulfur removal efficiency in a single stage extraction process. It was also found that [bmim]Cl can be reused after regeneration with considerable extraction efficiency.

Keywords: Desulfurization, model fuel, extraction, ionic liquids, green technology.

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Intensifying the Desulfurization of Liquid Fuels using Ionic Liquids

Wasewar Kailas L.[1], Dharaskar Swapnil A.[1], Varma Mahesh N.[1], Shende Diwakar Z.[1] and Yoo Chang Kyoo[2]
[1]Advance Separation and Analytical Laboratory, Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, INDIA
[2]College of Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do, KOREA

Abstract: Sulfur present in transportation fuels leads to sulfur oxides (SO_x) emissions into the air and inhibits the performance of pollution control equipment on vehicles. Therefore to minimize the negative health and environmental effects from automobile exhaust many countries recently have mandated a reduction in the sulfur content in motor fuel. For example in 2012, the maximum sulfur content will be limited to 10-50 ppm, compared to today's permitted value of 500 ppm in most western countries. The European Union has stringent fuel quality rules that require maximum diesel sulfur content of 50 ppm in 2005 (350 ppm in 2000), and maximum petrol (gasoline) sulfur content of 50 ppm in 2005 (150 ppm in 2000). In India as per the Central Pollution Control Board (CPCB) norms the current value of total sulfur content in liquid fuels is upto 350 ppm which has to be lower down into it possible extent. Consequently, the deep desulfurization of liquid fuels has attracted increased attention in the research community worldwide. In the petroleum industry, low sulfur fuels are often obtained from hydrocracking processes or hydrotrating processes. Also utilizes catalytic processes for desulfurization of transportation fuels through hydroprocessing. While the performance of conventional hydroprocessing catalysts have been highly effective for the reduction of sulfur levels, further removal of residual sulfur from the processed fuels is seen to largely increase the cost of hydroprocessing. So that these processes are highly energy intensive and consume large amount of hydrogen. There are many processes for deep-desulfurization of liquid fuel such as extraction, absorption, azeotropic distillation, hydrodesulfurization, catalytic hydrodesulfurization etc.Use of green technology is the demand of time in view of environmental concerns. Ionic liquids which are termed as green solvents can be used for desulfurization of liquid fuel due to their very low vapour pressure and wide range of applications with unique physical and chemical properties. The potential of ionic liquids for new chemical technologies is beginning to be recognized as they have different application in many areas like as solvent for synthesis, catalysis or extraction, as an enzyme-'friendly' co-solvent, in batteries, as lubricant additives, in polymerization, in synthesis of nanoparticles, in analytical chemistry, etc. A few applications to mention are like in purification of essential oils by extraction, separation of azeotropic mixtures, in hydrogen purification, in extraction of rare earth metals, in extraction of carboxylic acids, for removal of sulfur from refinery streams, in separation of isomers, for microfuidic separation using enzymatic reaction, in microextraction, for separation of fission products, in extraction and recovery of dyes, for extraction of ethanol etc. In addition to these applications of ionic liquids, it can be found that these noble solvents are very useful in many other fields with its recycle ability and without any impact on environment which is the most impressive factor in the present era of environmental concern.The potential of ionic liquids have been recognized worldwide. Scientists and engineers have been working in the advancement of preparation and applications of ionic liquid so that it can provide a range of options to industrialists looking to minimize the environmental impact of their chemical processes and processing cost. In petroleum and hydrocarbon industries, various solvents have been used such as ethers, amines, alcohols and other volatile organic compounds for the processes like extraction, absorption, azeotropic distillation etc. These solvents have their own limitations as environmental issue, recycle ability etc. These limitations can be overcome by the use of ionic liquids. In view of this present work on deep desulfurization process the synthesis of ionic liquids and its application in the desulfurization process is going on under CSIR project. Few ionic liquids which are best suited for the use as an extractant for the sulfur removal have been synthesis and its characterization has been done at our laboratory. The effect of ionic liquid loading, extraction temperature and extraction time in the removal of sulfur from liquid fuels were investigated. This work is very useful in view of the environmental concerns. So in the present paper possibility of various ionic liquids was explored for sulfur removal from liquid fuel. Their characteristics along with effect of various parameters on desulfurization were also presented.

Keywords: Desulfurization, ionic liquid, extraction, green technology, industrial application.

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Investigation on Kinetics and Sorption Equilibrium of Nicotinic Acid on Low Cost Adsorbent (Neem Leaves)

Waghmare Mangesh D.[1], Wasewar Kailas L.[2], Sonawane Shriram S.[2], Gupta Sheetal K.[3] and Yoo Chang Kyoo[4]
[1] Priyadarshini Institute of Engineering and Technology, Nagpur-440019, MS, INDIA
[2]Advance Separation and Analytical Laboratory, Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, INDIA
[3]Mahila Mahavidyalaya, Nandanvan, Nagpur-440009, MS, INDIA
[4]College of Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do, KOREA

Abstract: Adsorption as a treatment method for liquid and gas is extensively studied both theoretically and experimentally. The process is usually applied in chemical and pharmaceutical industries as post-treatment of a stream with a view to improve the quality of the product present in the main stream. As the consciousness of the community rises, the industrial authorities are facing more and more stringent environmental requirements, and trace amount of some component, which is considered to have adverse effect on public health is to be removed from a fluid stream before being disposed to the environment i.e. the treated stream, in such cases, no longer possesses economical value. Also due to the sharp increase in petroleum cost, carboxylic acids, widely used in the food, pharmaceutical and chemical industries, are important chemicals. Fermentation technology for the production of carboxylic acids in particular has been known for more than a century and acids have been produced in aqueous solutions. Number of methods are available such as precipitation, distillation, membranes, ion exchange, dialysis, reactive extraction etc. to recover carboxylic acids from fermentation broths or aqueous streams. Calcium hydroxide precipitation has few shortcomings like consumption of large quantities of reagents (H_2SO_4 and lime), huge amount of waste generation per ton of acid produced, disposal problem of waste and very poor sustainability. Dialysis has good potential but has drawbacks of frequent cleaning requirement, membrane fouling and requirement of larger dialysis unit as compared to fermenter. Higher power consumption is the main problem with electrodialysis although it allows simultaneous separation and concentration of the acid. Ion-exchange requires a large amount of chemicals and huge waste generation. Distillation method is a well-established technology, but its drawbacks are formation of high-boiling internal esters, dimers and consume more power. Adsorption is found to be the better separation process as the wide variety of conventional adsorbents are available. But the use of conventional and traditional expensive adsorbents has to be abandoned, and search for novel and cost effective adsorbents has to be initiated. In recent years many cheap, widely-available materials have been identified as suitable adsorbents for the removal of carboxylic acids from wastewaters and fermentation broths. Nicotinic Acid (also called Niacin) is an important carboxylic acid. Severe lack of niacin causes the deficiency disease pellagra. Niacin has proved to be useful as a food additive and in pharmaceuticals. The main sources of nicotinic acid are fruits, plants and seeds. In present paper it is proposed to apply neem leaves as low-cost sorbent of nicotinic acid. An adsorbent was developed from mature leaves and stem bark of the Neem (*Azadirachta indica*) tree. Environmental parameters affecting the sorption process such as pH, contact time, initial acid concentration, adsorbent concentration and rpm were evaluated. The equilibrium adsorption data were evaluated by Langmuir and Freundlich isotherm models. Also the kinetics of adsorption was investigated in column studies where the breakthrough curves were measured and observed that the breakthrough time increases with increasing height and decreases with increasing the feed concentration.

Keywords: Adsorption, nicotinic acid, neem leaves, breakthrough curve, freundlich isotherm.

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Extraction of Algal Oil for Biofuel

Ajmire S.R.[1], Wasewar K.L.[2], Varma M.N.[2] and Yoo Chang Kyoo[3]
[1]Jawaharlal Darda Institute of Engineering and Technology (JDIET), Yavatmal-445001, MS, INDIA
[2]Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, MS, INDIA
[3]College of Engineering, Kyung Hee University, REPUBLIC OF KOREA

Abstract: Petroleum crude oil and gas used now days is made up of ancient algae deposits, resulting from tremendous pressure and temperature for thousands of years on them. Over mining of fossil fuels having limited stock of it, increase of price of crude oil leads to increase in prices of prime commodities of life. Biofuels are the solution for all the mentioned problems. Main feedstocks for biofuels are corn, soyabean, sunflower, etc., which often destroys farmlands, disturbs global food supplies, and creates environmental problems. Algae is found to have a greater potential to produce more oils than crop based oils also not affecting global food chain and supply. To commercialize the algal biofuels there are some main hurdles, one of them is extraction of algal oil. Extraction of oil is costliest process in algal biofuels synthesis, which can determine the sustainability of algae-based biodiesel. There are numerous ways of algae oil extraction like

Expeller/Press, Hexane solvent oil extraction, Supercritical Fluid extraction, Enzymatic extraction, Osmotic shock, Ultrasonic-assisted extraction, Hydrothermal liquefaction, hydrodistillation (HD), focused microwave-assisted hydrodistillation (FMAHD), Gasification. In this paper various extracting methods are discussed to finding economically viable and environmentally friendly renewable energy.
Keywords: Algal strain, oil extraction, different extraction methods, comparison.

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Third Generation Fuel: Biodiesel from Algae

Ajmire S.R.[1], Wasewar K.L.[2], Varma M.N.[2] and Yoo Chang Kyoo[3]
[1]Jawaharlal Darda Institute of Engineering and Technology (JDIET), Yavatmal-445001, MS, INDIA
[2]Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, MS, INDIA
[3]College of Engineering, Kyung Hee University, 1732 Deogyeong-daero, Giheung-gu, Yongin-si, Gyeonggi-do, KOREA

Abstract: Petro Diesel fuels demand to meet energy requirements, is increasing by every passing day and oil reserves are reducing drastically. Rapid rise of crude oil price, its effect on environment and limited reserve push researchers to look for a replacement of petroleum based fuel. Biodiesel has been coming as a potential replacement for petro-fuel. Maximum of biodiesel production feedstocks come from edible oils. The properties of biodiesel produced from these oils are identical to diesel and better substitute for conventional diesel. However, it may cause some problems like competition with the edible oil market, which increases both the cost of edible oils and biodiesel, also land required for growing edible oil plants may affect normal crop cultivation in farms. Phytoplankton is gaining interest due to their fast growth and relatively high lipid, nutrients, and carbohydrates. These properties indicates that algae is an excellent source for biofuels such as biodiesel, bioethanol and biomethane. The present review is an analysis of the commercialization potential of microalgae biodiesel. The available literature on various aspects of microalgae, e.g. its cultivation, mass production, extraction of algal oil, has been scanned and a critical analysis has been presented. The main factors for economic viability of the process are increase in production of algal biomass and minimizing the operational and maintenance cost for successful commercialization of algal fuels.
Keywords: Biodiesel, algal strain, oil extraction, different methods.

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Study of Effect of Pretreatment and Drying Kinetics of Ginger in Tray Dryer

Deshmukh A. Waheed[1], Wasewar K.L.[2] and Varma M.N.[2]
[1]Priyadarshini Institute of Engineering and Technology, RTMN University Nagpur-440018, Maharashtra, INDIA
[2]Advance Separation and Analytical Laboratory, Visvesvaraya National Institute of Technology (VNIT), Nagpur-440010, INDIA

Abstract: Ginger is high value and export oriented commodity crop, which play an important role in agricultural economy of India. Proper drying techniques are required to capitalize this crop. In the present study the drying kinetics of ginger in a laboratory tray dryer was studied. Effect of pretreatment with alkaline ethyl oleate solution was compared with untreated ginger at selected temperatures of 45, 55 and 65^0C with a constant air velocity of 1.8 m/s. The drying rate curves showed that drying process took place only in the falling rate period. Thin-layer drying models of Newton, Page, Modified Page, Henderson and Pabis and Wang and Singh evaluated based on coefficient of determination (R^2), reduced chi-square ($\div^2$) and root means error (RMSE). The Page model was found to be a better model for describing the drying kinetics of the ginger. It is observed that pretreated ginger offers less drying time as compare to untreated ginger. Rehydration of pretreated sample was much faster than untreated sample. The transport of water during drying was described by Fick's equation and effective diffusivity varied from $5.67\times 10^{"10}$ to $2.23\times 10^{"9}$ m^2/s.
Keywords: Tray drying; drying kinetics, alkaline ethyl oleate; diffusivity.

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Effect of Different Electrodes Coated with Alcohol Oxidase in Performance of Ethanol Biosensor

Kaveh S.[1], Farahbakhsh A.[2*] and Farahbakhsh I.[3]
[1]Department of Chemical Engineering, Quchan branch, Islamic Azad University, Quchan, IRAN
[2]University of Applied Science and Technology, Shirvan Center, Shirvan, North Khorasan, IRAN
[3]Department of Mechanical, Quchan branch, Islamic Azad University, Quchan, IRAN

Abstract: Ethanol biosensor was used to measure low values of ethanol with precision and high selectivity by amperometric method in different industrial fileds. In this paper, the performance of biosensor has been evaluated by measuring the current rate transferred in different concentrations of ethanol and different Working Electrodes (W.E). The obtained results

of comprise Pt-PEDOT, Pt-PVF, SCP-C, SCP-Pt electrodes coated with alcohol oxidase as the anode in amperometric biosensor were indicated that SCP-C electrode has high efficiency in ethanol concentrations less than 0.6 mM.

Keywords: Ethanol biosensor, alcohol oxidase, amperometric, working electrode.

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Bio-Diesel – A Green Fuel from Green Cells Cultured from Flue Gases-a Green Initiative

Soma Sekhar S.A.
Department of Engineering Chemistry, Andhra University, INDIA

Abstract: The sustainable production of alternative sources of fuels is a potent issue than the business in Wall Street, except the seriousness is overshadowed by other issues like poverty, feticide in a developing country like India. The production of biofuels as such biodiesel has many feasible itineraries out of which the production from algal strains is the best. The oil content or the lipid content of the microalgae is the source for biodiesel production. The microalgae adapt themselves to harsh conditions and thus can be cultured in situ of flue gases and even in high carbon dioxide conditions. This paper focuses on the production of biodiesel from algae which are cultured by using carbon dioxide from flue gases from an oil industry which is a kind of biological sequestration and thus leads to the production of biomass i.e. algal culture and from this biodiesel is produced which is much cost effective than other sequestration techniques using adsorbents and thus the economy of the process is also focused. Since carbon dioxide is most cherished culprit behind some of our serious problems like Global warming, Ocean acidification, and the statistics show an alarming rise in the amounts carbon dioxide globally, the situation demands sequestration. And to support this context a case study was conducted along the coast of Visakhapatnam .i.e. the process of ocean acidification by studying relative strengths of carbonate and bi-carbonate ions was studied. It is focused that how exactly this process of biodiesel production is green, including utilization of waste materials left over after extraction of biodiesel, economically viable and the best thing is curbing carbon dioxide. Development is mandatory for a society and it should be sustainable which can be achieved by clamping it with green technology.

Keywords: Bio Diesel, Algae carbon dioxide sequestration ocean acidifcation case study.

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Conversion of Paper Mill Sludge into Absorbent

Dhage Tirupati, Katre Pallavi and Waghmare Mangesh
Department of Chemical Engineering , Priyadarshini Institute of Engg. and Tech., Nagpur, Maharashtra 440019, INDIA

Abstract: Paper mill sludge (PMS) is generated during the wastewater treatment process in paper production. Its handling and disposal techniques are of great concern. In India annual production capacity of recycle paper industry is 2.345 million tons and waste generated there is 15%.It is clear those materials represents a big environmental burden and increase the costs for paper production, while on the other hand those material presents a big potential raw material source.It can be land filled as waste or else it can be converted into useful products and thus become a material with added value. One of the possibilities is its usage as an absorbing agent which might replace other expensive mineral and synthetic absorbents for cleaning water surfaces containing hydrophobic substances (vegetable, synthetic and mineral oils, animal fats, fuels, organic chemicals and even coal dust). By appropriate pretreatment (hydrophobation, mechanical and thermal treatments) of PMS an efficient lightweight absorbent (ELA) material can be produced, which floats on the surface of the water and efficiently binds hydrophobic substances. After application it can be incinerated due to its high caloric value, to produce energy. From incineration residues granules can be manufactured which are applicable as collectors of fluids from solid surfaces. In this CAPS technology where industrial waste is converted to usable material with high added value and accordingly while at the same time decreasing emission into environment, reducing waste quantity and offers implementation of a new production program for paper producers which may have a substantial effect on economic efficiency and on the preservation of the employment.

Keywords: paper mill sludge, absorbent, cleaning water surfaces, recycling, reuse.

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Isolation, Purification and Characterization of Melanin from Marine *Pseudomonas* sp.

Tarangini Korumilli and Mishra Susmita
Department of Chemical Engineering, National Institute of Technology, Rourkela–769 008, Orissa, INDIA

Abstract: Melanin pigment from natural sources like microorganisms was an attractive choice for commercial scale production. In this study, marine bacterium capable of melanin production on marine broth/agar was isolated and identified as Pseudomonas sp. (closely related to guinea) on phenotypic characterization. Melanin production activity of the isolate

was studied in liquid mediums such as pure marine broth and vegetable waste. In pure marine broth, melanin yield was ~5.35 mg/mL and pigment production was absent in pure vegetable waste. However in the presence of marine broth (as starter culture) melanin yield increased to ~2.79 mg/mL. This indicates melanin production may be initiated austerely by marine broth. Pigment from the bacterium was purified and characterized using UV-visible and FTIR analysis. The morphology and size of the bacterium was visualized in scanning electron microscopy (SEM) and the pigment nature was identified by SEM/EDX analysis. The results indicated that the synthesized melanin was very near to synthetic dihydroxyphenylalanine (DOPA)-melanin in all aspects.
Keywords: marine bacterium, marine broth, vegetable waste, pigment, dihydroxyphenylalanine

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Optimization of Parameter for Transesterification Reaction

Deshpande D.P., Bhosale V.A., Patil K.I. and Shinde N.H.
Department of Chemical Engineering TKIET,Warananagar, INDIA

Abstract: Biodiesel is a nonpetroleum-based fuel that consists of alkyl esters derived from either the transesterification of triglycerides (TGs) or the esterification of free fatty acids (FFAs) with low molecular weight alcohols. The flow and combustion properties of biodiesel are similar to petroleum-based diesel and, thus, can be used either as a substitute for diesel fuel or more commonly in fuel blends. In this paper a simulation tools are used for finding out the optimum parameter for the transesterification reaction. The parameters used for optimization are reaction Time, oil to alcohol Ratio, Catalyst concentration and Reaction temp. The experiments were performed in batch reactor using used soya oil.
Keywords: Transesterification, Biodiesel, Alcohol, Batch Reactor.

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Ultrasonic -Assisted Extraction of Aloin from Aloe Vera Gel

Jawade Ninad R. and Abhijeet R. Chavan
[1]Dr. Babasaheb Ambedkar Technological University, Lonere, Tq: Mangaon, Dist: Raigad-402103, INDIA

Abstract: Ultrasound assisted extraction (UAE) intensifies the kinetic of the extraction process by acting upon the interfacial area, through the disintegration of particles. Compared with batch extraction, it improves the extraction process decreasing both extraction time and temperature while increasing the rate of extraction. UAE technique was used to obtain active principle aloin from a herbal plant Aloe Vera. Methanol was selected as organic solvent as found maximum extraction of aloin with it. The active principle aloin was quantified using WATER's HPLC system. The optimum extraction conditions were estimated as extraction temperature , extraction time and dry gel loading . Effective intraparticle diffusivity of aloin in methanol solvent was estimated using unsteady state mass diffusion model, and activation energy of diffusion using Arhenius equation respectively**.**
Keywords: Activation energy, Aloe Vera, Aloin, Diffusivity, UAE.

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Management of Vegetable Oil Mill Waste (*karanja* pod) by Converting it into a Valuable Product

Ganvir V.N. and Singh Swarnalata .K.
Department of Petroleum Refining and Petrochemical Technology, Laxminarayan Institute of Technology, Nagpur, INDIA

Abstract: Solid waste disposal has become a major problem in vegetable oil mill / refinery. Either it has to be disposed safely or use for the recovery of valuable materials. Karanja oil has medicinal value and widely used in soaps, leather tanning and 'attar'. Nowadays karanja oil is used for preparation of biodiesel. Karanja pod remains as waste. Therefore, we have prepared activated carbon from karanja pod which is thrown out as a waste from karanja oil mill and have no further use after seed removal. The objective of this experiment is to manage the vegetable oil mill solid waste and converting into a valuable adsorbent. The experiments were carried out with carbonization temperature varied from (400°C to 550°C) and carbonizaion time varied from (10 min to 30 min). The optimized condition is found at temperature 450ºC for time 10 min and specific surface area is found maximum at the same condition. The XRD analysis shows that the phase change from amorphous to crystalline form has been taken place.
Keywords: Activated carbon, karanja pod, surface area and XRD.

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Synthesis and Stabilization of Silver Nanoparticles by *Aegle marmelos* Leaf Extract Polyphenols

K. Jagajjanani Rao and Santanu Paria*
Department of Chemical Engineering, National Institute of Technology, Rourkela–769 008, Orissa, INDIA

Abstract: In the recent years there has been an increasing trend for the green route synthesis of nanoparticles over the conventional wet chemical routes because of its eco-friendly nature. The present study reports one-pot synthesis and in-situ stabilization of silver nanoparticles using *Aegle marmelos* leaf extract (LE). The nanoparticles of uniform spherical size (~ 60 nm) were synthesized within 25 min reaction time at room temperature. A minimum concentration of LE required for the complete reduction of the added metal precursor was identified. The crystallinity, size, and shape of the nanoparticles were well characterized with the help of X-ray diffraction, dynamic light scattering, and scanning electron microscopy measurements. The involvement of phenolic compounds in metal ion reduction and capping effect were supported by UV-vis-spectroscopy, FTIR, RP-HPLC, and zeta potential measurements. The reported phytosynthesis method will be economical for the large scale production of noble silver nanoparticles.
Key words: In-situ stabilization, one-pot synthesis, phenolic compounds, phytosynthesis

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Turbidity Removal from Water by Opuntia ficus-indica: A Natural Polyelectrolyte

Choudhari Deepika[1], Nargawe Tarachand[2], Dubey Arti and Thakkar Atul[3]
[1]Department of Chemical Sciences, Maharaja Ranjit Singh College, Indore, MP, INDIA
[2]Dept. of Chemistry, Govt. P.G. College Dhar, MP, INDIA
[3]Astral college of Engineering, Indore, MP, INDIA

Abstract: Turbidity is a principal physical characteristics of water . It is caused by suspended matter or impurities that interfere with the clarity of water. These impurities may include clay, silt, finely divided inorganic and organic matter. Coagulation is an important water treatment process used to reduce water turbidity by separating the suspended solids portion from the water. In this study Opuntia Ficus Indica , a species of the cactus are used as natural coagulants. Water, starch, cellulose, hemicelluloses, pectin, lignins and chlorophyll are the main constitute of cactus. Opuntia species suggests that these natural coagulants operate through different mechanism. It is suggested that opuntia species operate predominantly through a bridging coagulation mechanism. By the application of these plant for the treatment of turbid water may offer a practical, inexpensive and appropriate solution for producing pure water.
Keywords: Opuntia ficus indica, Natural Coagulants, Turbid water.

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Role of Algae in Wastewater Treatment and Fermentative Biogas Production

Sanjeev Kumar Prajapati, Prachi Kaushik, Poonam Choudhary, Anushree Malik, Virendra Kumar Vijay
Applied Microbiology and Biogas Laboratory, Centre for Rural Development and Technology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, INDIA

Abstract: Algae are being considered as best tool for wastewater treatment along with production of biomass for biofuel application. In the present study two native algal isolates *Chroococcus* sp.1 & sp.2 and one procured algae *Chlorella minutissima* were used for testing their potential for biomass production and wastewater treatment. Wastewater was collected from a drainage line and a pond from village Mubarakpur, Haryana (India). All three tested algae were able to bring wastewater parameters below dischargeable limits (except *C. minutissima* in case of reactive phosphorous) under sterile as well as unsterile wastewater condition. For all the three strains, biomass production potential up to 1.05 g dry biomass L^{-1} was obtained after 12 days cultivation. Based on phycoremediation and biomass production potential, native algae were selected for mass scale cultivation. The cultivated biomass was used in batch scale assay in order to determine the biogas potential and digestibility. Biogas potential of 0.487 ± 0.015.27 and 0.401± 0.003 m^3g^{-1} VS added were obtained for *Chroococcus* sp.1 and sp.2, respectively. Moreover, biodegradability of sp.1 was higher (43.83%) compared to that of sp.2 (34.96%). The present study reflected the possibility of integrated process development of algal wastewater treatment with biogas generation by replacing the expensive growth medium with wastewater.
Keywords: phycoremediation, biogas, biodegradability, *Chroococcus* spp.

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Effect of Agitation on Removal of Acid Blue Dye by *Aspergillus lentulus*

Mishra Abhishek, Kaushik Prachi and Malik Anushree
Applied Microbiology Laboratory, Centre for Rural Development and Technology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, INDIA

Abstract: Dyes discharged through textile, pulp and paper effluents in water bodies are potentially mutagenic/ carcinogenic and also reduce light penetration and thus the photosynthetic potential of the aquatic plants. Treatment technologies based on biological methods are economic and eco-friendly as compared to physico-chemical methods. In this study, a fungal isolate, *Aspergillus lentulus* FJ172995, was utilized for the removal of Acid Blue 120 dye and the effect of agitation on its removal efficiency was studied. The importance of agitation during growth and dye removal needs to be evaluated as it is useful in designing a suitable reactor system for industrial wastewater treatment. The fungal isolate is known to be alkali thermo and halo-tolerant and thus is ideal for treatment of dye waste water. The sterilized composite growth media was used to study the growth of fungi (5% spore suspension as the inoculum). Both biomass growth and dye removal were studied simultaneously by altering the conditions from shaking to static and vice versa. Effect on biomass growth in the absence of dye was observed by inoculating spore suspension to the media. Flasks were then kept in complete agitated and static conditions. Dye removal in agitated and static condition was observed in the absence of growth i.e. with pre-grown fungal pellets. Results suggested that although agitation was required for production of biomass in larger amounts, the same is not true for dye removal. Once a required amount of biomass is available, dye removal can be brought about in both agitated and static conditions.
Keywords: *Aspergillus lentulus,* dye removal; agitation.

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Utilization of Spent Fermentation Slurry for Remediation of Dyes

Kaushik Prachi and Malik Anushree
Applied Microbiology Laboratory, Centre for Rural Development and Technology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, INDIA

Abstract: Pulp and paper industries are a major source of environmental pollution because of its two predominant processes, pulp bleaching and pulp dyeing. Former involves the use of chlorine during pulp bleaching which is responsible for the destruction of the stratospheric ozone layer, and produces dioxin and organic chlorides. Recently utilization of microbial enzyme xylanase for pulp-bleaching has resulted in cheaper and cleaner production process by avoiding the use of chlorine. During pulp dyeing, excess amount of dyes are released into the discharged wastewater. These dyes are recalcitrant compounds which are not easily removed by conventional wastewater treatment systems. Moreover, the left over pulp from these processes is also discarded into the waste streams. In the present study, this waste pulp was tested for its potential to be used as a substrate for the production of xylanase enzyme utilizing a fungus *Aspergillus lentulus.* Through solid state fermentation 125.22 U/g xylanase activity was obtained when handmade paper pulp was used as the substrate. Later, spent fermented slurry after enzyme extraction was utilized for the removal of various cationic (Methylene Blue, 10 mg/l) and anionic (Acid Navy Blue, 200 mg/l) dyes yielding 96.91 % and 87.90 % dye removal in 5 h of contact, respectively. Thus, a multi way pollution reduction strategy was adopted by utilizing the waste pulp for the production of xylanase enzyme, which could further be used for pulp bleaching in place of chlorine, and the utilization of this spent fermented slurry for the removal of dyes being discharged after the dyeing process.
Keywords: Dye removal; fermentation; pulp; spent slurry; xylanase.

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Estimation of Bioavailability and Speciation of Zinc, Copper, Cadmium and Lead During Water Hyacinth Composting

Singh Jiwan and Kalamdhad Ajay S.
Department of Civil Engineering, Indian Institute of Technology Guwahati (IITG), Guwahati-781039 Assam, INDIA

Abstract: The bioavailability of heavy metals plays an important role in the toxicity of heavy metals during composting following land application. The potential toxicity risk from heavy metals depends on their chemical speciation. Therefore, studies were carried out on bioavailability and speciation of heavy metals (Zn, Cu, Cd and Pb) during 20 days Rotary drum composting of water hyacinth (Eichhornia crassipes). The Tessier sequential extraction method was employed to investigate changes in heavy metals speciation during composting. The bioavailability of heavy metals was investigated

in the terms of water soluble and diethylene triamine penta-acetic acid (DTPA) extractable. Results showed that, the total metal concentration was increased during the composting. The water soluble and DTPA extractable Cu and Zn were reduced but water soluble and DTPA extractable Cd and Pd were not detected during the composting. The leachability of Zn, Cu, Cd and Pb were reduced during composting. Reducible and oxidizable fractions of Cd and Pd were not found during water hyacinth composting. From this study it can be concluded that the appropriate proportion of cattle manure addition significantly reduced the mobile and easily available fractions (exchangeable and carbonate fractions), and increase the residual fraction during the composting process. The residual fraction is more stable form and considered as unavailable for plant uptake.

Keywords: Water hyacinth, rotary drum, heavy metals, bioavailability, speciation

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Stability Analysis of Sewage Sludge Compost

Nayak Ashish Kumar and Kalamdhad Ajay S.
Department of Civil Engineering, Indian Institute of Technology Guwahati (IITG), Guwahati-781039 Assam, INDIA

Abstract: Sewage sludge is an unwanted by-product of wastewater treatment processes; its disposal and management is generally precious or easy to pollute the environment. Being rich in micro-and macronutrients; could be reused in agriculture as fertilizer or soil conditioner. Hence, composting of sewage sludge is one of the important disposal alternatives. In addition, nutrients balance plays a crucial role in the composting process which is expressed as carbon to nitrogen (C/N) ratio. In present study, the alteration of sewage sludge into stable compost product is carried out in agitated pile composting technique, in which sewage sludge coupled with saw dust in four different proportions based on C/N ratios (20, 25 and 30) including control. It was observed that C/N 25 produced the best compost, showed highest temperature profile, higher reduction in C/N ratio, oxygen uptake rate (OUR) and CO_2 evolution during the composting process; implying the total amount of biodegradable organic material is stabilized. Therefore, it has been found that agitated pile composting of sewage sludge with C/N 25 proportions produced more stable compost at the end of 30 days; while C/N 20, 30 and control poses least stable.

Keywords: Sewage sludge; saw dust; C/N ratio; OUR; CO_2 evolution.

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Study of Scour Pattern in the Stilling Basin Using end Sills

Tiwari H.L. and Gahlot V.K.
Department of Civil Engineering, Maulana Azad National Institute of Technology, Bhopal, Madhya Pradesh, INDIA

Abstract: This research paper presents an experimental investigations of scour pattern for stilling basin for non circular outlet using end sills of different geometry. The study was conducted by designing new stilling basin models were tested in a rectangular shaped pipe outlet of size 10.8cm x 6.3 cm with three inflow Froude numbers Fr = 1.85, 2.85 and 3.85. To study the scour pattern downstream stilling basin total 33 test runs were examined using same test run time and movable sand bed. The scour pattern (depth and location) after the end sill were measured for each test run. The study indicates that there is a significant effect of the shape of the end sill geometry on the scour pattern downstream end sill in the stilling basin.

Keywords: Downstream, froude number, scour pattern, stilling basin.

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Influence of Cellulose Superplasticiser on the Strength Property of Cementitious Materials

Bhuvaneshwari B. and Iyer Nagesh R.
CSIR-Structural Engineering Research Centre, Chennai, INDIA

Abstract: Functions of newly synthesized cellulose based Superplasticiser(SP) on cementitious materials during development of strength have been studied and the results are compared with polycarboxylic ester (PCE) SP added mortar. Marsh cone test is conducted for finalizing the required amount of SP for the mortar mix. Preliminary characterization studies such as X-ray Fluorescence (XRF), X-ray Diffraction (XRD) and Scanning Electron Microscopy (SEM) have been conducted on precursor materials such as Cement, Fly ash (FA), Silicafume (SF) for evaluating the elemental or oxide composition, presence of phases and surface morphology respectively. Quantification of cement and SF have been carried out through the Reitvield quantification software or Total Pattern analysis Software (TOPAS).

Compressive strength studies on mortar samples have been conducted for cellulose and PCE SPs added mortar mixes and the results are compared with each other. It is found that, the mix having Cement + FA (25%) + SF (10%) + Cellulose SP (1.5%), shows compressive strength higher after 28th days to 60 days, when compared to the mortar mix having Cement + FA (25%) + SF (10%) + PCE (2.5%). Hence, it is concluded that, activation of mineral admixtures such as SF and FA has occurred in the presence of cellulose SP, which resulted in strength gain. It is observed that there is no strength reduction by using the cellulose SP and thus it gained the confidence and added advantage to use as SP towards the promotion of mineral admixtures usage for high strength or high performance concrete.
Keywords: Cellulose, Superplasticiser, XRD, SEM, Marsh cone, Compressive strength.

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Application of Multi-layer Composites in Construction and their Future Challenges

Sankaran Apurva[1], Bhuvaneshwari B.[2], Maheswaran S.[2], Santhi A.S.[1] and Iyer Nagesh R.[2]
[1]VIT University, Vellore, INDIA
[2]CSIR-Structural Engineering Research Centre, Chennai, INDIA

Abstract: A concise state-of-the-art survey on fiber-reinforced polymer (FRP) composites for civil engineering towards construction applications is presented. It is an emerging trend in construction field, since it is one of the main repair and retrofitting material, in general and has profound applications in aerospace and marine construction in particular. FRPs are well known for enhancing the mechanical and durability properties of concrete. The paper is organized into separate sections on the various mechanical properties like compressive strength, bond strength, flexural strength; durability properties like chloride ion penetration, elevated temperature, freeze thaw cycle, corrosion resistance, seismic behavior of FRP wrapped structural concrete members proposed by various authors are also discussed. Each of these sections is segmented into a short review and future challenges including problem identification based on literature review as well as authors view point. Based on the experimental investigations of various authors, it can be concluded that FRP wrapping on concrete members increases the strength, ductility and also durability of concrete. However, the associated problems due to continuous exposure of moisture at the concrete-epoxy interface need to be addressed in detail. The problem identification and the methodologies for rectification are also discussed in this paper. Functions of epoxy and scope on functional modification for better bonding between the multi-layer composites i.e, concrete-epoxy-(fiber wrap)$_n$-epoxy-(fiber wrap)$_n$, where n - no. of layers are discussed.
Keywords: CFRP, GFRP, Functional epoxy, Multi-layer composites, Strength, Durability.

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Influence of Alkali Resistance Glass Fibers on Strength of Concrete Polymer

Vairagade V.S.[1] and Kene K.S.[2]
[1]J.L. Chaturvedi College of Engineering, Nagpur, Maharashtra, INDIA
[2]KDK College of Engineering, Nagpur, Maharashtra, INDIA

Abstract: Concrete is characterized by brittle failure, the nearly complete loss of loading capacity, once failure is initiated. This characteristic, which limits the application of the material, can be overcome by the inclusion of a small amount of short randomly distributed fibers (steel, glass, synthetic and natural) and can be practiced among others that remedy weaknesses of concrete, such as low growth resistance, high shrinkage cracking, low durability, etc. This paper deals with comparative study of effects of alkali resitance glass fibers reinforced concrete over control concrete for M20 grade concrete. Based on the laboratory experiment of alkali resitance glass fiber reinforced concrete (GFRC), cube and cylindrical specimens have been designed with alkali resitance glass fiber reinforced concrete containing fibers of 0%, 0.25% and 0.3% by weigth of cement were used without adding admixtures. For compression test, the cube (15cmx15cmx15cm) and cylinders (10cm diameter and 20cm length) were used. For splitting test, cylinders (10 cm diameter and 20 cm length) were used. Comparing the result of GFRC with plain concrete, this paper validated the positive effect of alkali resitance glass fiber with different aspect ratio in compression and splitting strength improvement of specimen at 7 and 28 days, analyzed the sensitivity of alkali resitance glass fiber to concrete with different strength.
Keywords: Fiber reinforcement, Compression strength, Glass fibers, Crack resistance.

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Energy Loss for a Highly Meandering Open Channel Flow

Dash Saine S., Khatua K.K., Nayak B. and and Mohanty P.K.
Department of Civil Engineering, N.I.T. Rourkela, INDIA

Abstract: Selection of proper value of Roughness coefficient is essential for evaluating the actual carrying capacity of Natural channel. An excessive value underestimates the discharge and a low value can over estimates. Suggested values for Manning's n are found tabulated in many standard articles such as Chow (1959) etc. Roughness characteristics of natural channels are given by Barnes (1967). During uniform flow in open channels the resistance to the flow is dependent on a number of flow and channel parameters. The usual practice in one dimensional analysis is to select a value of n depending on the channel surface roughness and take it as uniform for the entire surface for all depths of flow. The influences of all the parameters are assumed to be lumped into a single value of n. Pang (1998), Khatua (2008) etc. have shown that Manning's coefficient n not only denotes the roughness characteristics of a channel but also the energy loss in the flow. The larger the value of n, the higher is the loss of energy within the flow. An experimental investigation concerning the loss of energy of flows for a meandering channel for different flow condition, geometry and roughness are presented.

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Comparative Study on Distortional Buckling Strength of Cold-Formed Steel Lipped Channel Sections

Vijayasimhan M[1]., Marimuthu V[2]., Palani G.S[2]. and Rama Mohan Rao P[1].
[1]VIT University, Vellore, INDIA
[2]CSIR-Structural Engineering Research Centre, Chennai, INDIA

Abstract : Usage of cold formed steel structural components for buildings and structures is gaining popularity in India for a decade. Hot rolled steel member behaviour and design are well developed, whereas the cold formed steel member behaviour and design is not developed fully compared to the rest of the world. The Indian code for cold-formed steel design, IS 801 was revised during 1975, which is in line with 1968 edition of AISI standard. Bureau of Indian standards is in the process of revision of IS 801 to catch up with the latest developments and design methods with the other codes of practices in the world. As a background for the development of codal provisions, the design provisions developed in the various codes of practices have been reviewed and a comparative study has been carried out on design flexural strength of cold formed steel lipped channel sections. For this purpose, experimental results are collected from the literature. Based on the comparative study, direct strength method (DSM), which gives flexural strength closer to experimental results has been chosen for further parametric studies. There are several failure modes among which distortional buckling is one such failure mode that affects the strength of the section. In order to assess the influence of distortional buckling, a parametric study has been conducted by varying the lip depth, which is the influencing factor for distortional buckling strength. This paper presents the details of the studies carried out and the conclusions arrived.
Keywords: Cold-formed steel, Lipped channel, Direct strength method, Distortional buckling.

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Stage Discharge Prediction Using RBF and Elman Neural Networks

Adhikari Alok, Patra K.C. and Khatua K.K.
Department of Civil Engineering, N.I.T., Rourkela, INDIA

Abstract: The artificial neural networks are popular tools in the study and analysis of stage discharge relationship. Stage discharge relation is considered to be important for reliable planning, design and management of any water resources systems. Most of the time discharge estimation is either over or under estimated causing loss of massive structures and or lives. Two neural networks have been studied taking stage discharge data of an Indian river named Brahmani. Performance of each network has been summarized and accordingly ranking is done. Accuracy of each network model is based on the percentage of successful predictions on the test sets of each data set. Accuracy is measured via the holdout method as well as through cross validation. The present work suggests the suitability of a neural network as a tool for predicting discharge which will be useful in different field of science and engineering.
Keywords: artificial neural networks, rbf, Elman network, stage, discharge.

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Analysis of Flexural Members using an Alternative Approach

Patel Rakesh[1], Dubey S.K.[1] and Pathak K.K.[2]
[1]Department of Civil Engineering, Maulana Azad National Institute of Technology, Bhopal, MP, INDIA
[2]Department of Civil and Environmental Engineering, NITTTR, Bhopal-462002, MP, INDIA

Abstract: An alternative approach used for the analysis of flexural members is method of initial functions (MIF). The equations of two dimensional elasticity have been used for deriving the governing equations. Numerical solutions of the governing equations have been presented for simply supported orthotropic beam. The method of initial function (MIF) is an analytical method of elasticity theory. The method makes it possible to obtain exact solutions of different types of problems, i.e., solutions without the use of hypotheses about the character of stress and strain. This method has applications in various fields of structural engineering such as plates, shells and beams. It is very useful in case of thick, sandwich, and layered beams.
Keywords: Flexural members, method of initial functions, stress, strain, flexural member.

ISCA-ISC-2012-7EngS-Elel-01

Fabrication and Characterization of Titanium Dioxide Based Sensitized Solar Cell Using Vinegar

Alex N. Remegio, Jr. Jomer H. Mejica and Victorino M. Laviste
Sultan Kudarat State University, Kalamansig, Sultan Kudarat, Mindanao-09808, PHILIPPINES

Abstract: A project is designed primarily aimed to Fabricate Solar Cell Using Titanium Dioxide and Vinegar as an alternative energy source to save consumption of electrical energy and protect the harmful effect of carbon oxidation in the atmosphere. This technology is aimed to design a device that can collect electrons from solar energy and convert it into electrical energy. A Titanium Dioxide based sensitized solar cell (SSC) using vinegar was fabricated on a regular glass plate and characterized with aluminum coating electron collector. The cell had TiO_2 as photoelectrode, copper sheet as an negative electrode and aluminum foil as a counter electrode. The photo electrochemical characteristics of TiO2 based SSC were tested under simulated sunlight. Two Cells were fabricated. Each cell constructed on one square foot and has twelve blocks of cell 2x3 in each. Based on the results obtained from day 1 under shadowed area from 5pm to 6pm the first cell obtained 6.24 volts with 154 microamperes, the second had 7.81 volts with 169 microamperes. Under moderate light source from 7am -8 am, the first panel obtained 6.42 volts with 191 microamperes, the second panel had 7.90 volts with 210 microamperes. Under strong light source from 11am -12nn, the fist panel obtained 6.50 volts with 190 microamperes, and the second 8.7 volts with 252 microamperes. Results of the study show that strong exposure to sunlight exhibit the highest voltage mean generated by the solar panel compared to moderate and shadowed exposure. This implies that in terms of current generation, the stronger light available, the higher the current produced by the solar and the voltage produced does not affect any of three conditions exhibited.
Keywords: Titanium Dioxide.

ISCA-ISC-2012-7EngS-Mech-01

Optimization and Validation for Injector Nozzle Hole Diameter for Single Cylinder Diesel Engine using GT-Power Software

Nerkar Abhishek
Automotive Research Association of India, Pune, MS, INDIA

Abstract: Single Cylinder Diesel Engines are widely used as a power source of Gen-sets, Three wheelers as well as agricultural machines in small house-hold applications in Indian automotive sector. Due to its simple structure and mechanism, the operation, maintenance and repairing for this kind of engines is also simply done. Now, in order to satisfy stringent emission there is a need for the development of the above engines. In this Paper, Software predicted performance at different Modes are being determined by using GT-Power. This performance is being validated with the actual Experimented Performance Results. In the above mentioned simulation I basically used EngCylCombDIJet Simulation model. The validated model is used for further work. Critical parameters were listed based on the sensitivity analysis on the base model. Critical parameters were optimized for achieving the desired Fuel injector nozzle hole diameter. A very close validation with less than 1% difference is achieved at full load. While a less than 10 % difference is achieved at part loads. The simulation model predicts the Power, Torque, BSFC, A/F Ratio, Cylinder pressure,

Exhaust Temperature and NO_x with a very good accuracy. The optimization nozzle hole diameter of the above engine and validating with the experimental model and comparing with the Base-line model is being done in this paper. Thus, an improvement in Performance and Emission results is achieved. The real testing of the engine on engine dynamometer with various hardware combinations is very time consuming and expensive. So, by directly implementing the optimized combination of hardware saves unnecessary time and cost.
Keywords: Direct injection, EngCylCombDIJet, BSFC.

ISCA-ISC-2012-7EngS-Mech-02

Recent Trends in Application of Nano-Technology to Automotive Pollution Control

Thakur Mukesh[1] and Saikhedkar N.K.[2]
[1]Department of Mechanical Engineering, Rungta College of Engineering and Technology, Raipur, Chhattisgarh, INDIA
[2]Department of Mechanical Engineering, Raipur Institute of Technology, Raipur, Chhattisgarh, INDIA

Abstract: Nanotechnology is the generation next technology. It is an emerging field that covers a wide range of technologies which are presently under development in nano-scale. It plays a major role in the development of innovative methods to produce new products, to substitute existing production with improved performance products resulting in less consumption of energy and environmental protection. The rate at which the automotive industry is hampering the environment makes the application of nano-technology mandatory to prevent further damage. This research paper gives a comprehensive review on the recent trends in application of nano-technology in automotive pollution control. First, the essential aspects of environmental problems due to automotive industry are discussed and then the application of nanotechnology towards the prevention and control of these problems are described. This paper can be very helpful in understanding the concept of nano-technology and its effectiveness in curbing the grave problem of automotive pollution.
Keywords: Automotive pollution; environmental protection; nanotechnology.

ISCA-ISC-2012-7EngS-Mech-03

Approach to Recover the Noise and Vibration Problems in Helical Gears

Pathak Sunil, Chandak Amit and Sharma Rahul
Sanghvi Innovative Academy, Indore, MP, INDIA

Abstract: The crucial requirement of effective power transmission in various machines, automobiles, elevators, generators, etc has created an increasing demand for more accurate analysis of the characteristics of gear systems. For instance in automobile industry highly reliable and lightweight gears are essential. Furthermore the best way to diminution of noise in engine requires the fabrication of silence gear system. Noise reduction in gear pairs is especially critical in the rapidly growing today's technology since the working environment is badly influenced by noise. The most successful way of gear noise reduction is attained by decreasing of vibration related with them. The reduction of noise by vibration control can be achieved through a research endeavour by an expert in the field. Gear analysis can be performed using analytical methods which required a number of assumptions and simplifications which aim at getting the maximum stress values only but gear analyses are multidisciplinary including calculations related to the tooth stresses and to failures like wear. In this thesis, an attempt will been made to Analyze static contact and bending stresses to resist bending of helical gears, as both affect transmission error. Helical gears have become a subject of research interest because the dynamic load, attention of the noise level during operation and the demand for lighter and smaller in size. In such type of gears there is a problem of failures at the root of the teeth because of the inadequate bending strength and surface pitting. This can be avoided or minimized by proper method analysis and modification of the different gear parameters. In view of this the main purpose of this thesis is by using numerical approach to develop theoretical model of helical gear in mesh and to determine the effect of gear tooth stresses.

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Description and Optimization of Plain Milling, Face Milling and End Milling

Deepak S.S.K.
Rungta College of Engineering and Technology (R1), Raipur-492099, CH, INDIA

Abstract: Milling is one of the operations which produce several shapes with varying surface roughness value. In milling, a predetermined amount of material is removed from the work piece at a relatively slow rate of movement or feed by a milling cutter rotating at a comparatively high speed. Basically, milling is divided in to: Plain milling, Face milling and End milling. The End milling process is widely used in industry because of versatility and effectiveness. Optimum selection of the cutting conditions effectively contributes to the increase in the productivity and reduction in the production cost, therefore utmost attention is paid to this problem. Optimization of cutting parameters is essential for a manufacturing unit to respond effectively to severe competitiveness and increasing demand of quality product in the

market. An optimization technique provides optimal or near optimal solution of optimization problem, which can be implemented in the actual metal cutting process. . In general, the selection of parameters is based on acquired experience considering the shape of work-piece, the technological requirements and the capability of the machine, the cutting tool and the work-piece material. The empirical aspects of this selection process do not result in an optimal solution. Thus, it is advisable to use a mathematical formulation aimed at optimization of operating conditions to satisfy an economic objective. This research paper throws some light on the introduction to milling process, its types and some of the optimization approaches applied to milling.
Keywords: milling, optimization, selection.

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Design of Solar Powered Long Endurance Flying Wing

Prasad Shiva U., Srinivas G. and Srinivasan C.R.
MIT-Manipal, Karnataka, INDIA

Abstract: The primary objective of the paper is to develop the design methodology of a flying wing that has a capacity to carry payloads for sufficiently large amount of time with solar energy as the driving force along with another on board power source to supplement the solar power. The total plane weight has limited to 10 kg, inclusive of additional payloads which can be of any sort i.e. cameras, sensors etc. Complete theoretical lift and drag analysis have been evaluated as the initial input for the design of solar powered Unmanned Aerial Vehicle (UAV). From the survey of various solar cells the efficient solar cell has to be chosen to meet the required power requirements. The secondary objective is to look for the supplementary green power source to power the UAV when the solar cells fail to do so. Apart from this structural analysis is also carried on the wing to specified load in this work and validated with the existing results.
Keywords: Flying wing, Solar energy, Lift, Drag, Structural Analysis.

ISCA-ISC-2012-7EngS-Mech-06

Optimization of Operating Parameters and Performance Analysis of Counter Flow Cooling Tower by using Taguchi Method

Singh Bhanu Pratap[1] and Tiwari Shashank[2]
Department of Mechanical Engineering, SRCEM Banmore, M.P, INDIA

Abstract: This Paper discusses the application of Taguchi method in assessing maximum cooling tower effectiveness for the Forced draft counter flow cooling tower. An experimental study has been carried out for Taguchi's L9 orthogonal array. According to Orthogonal array the trail was performed under different inlet conditions of flow rate of water, air and Inlet water temperature. Signal-to-noise ratio (S/N) and regression were carried out in order to determine the effects of process parameters on cooling tower effectiveness. Finally confirmation tests verified this reliability of Taguchi method for optimization of forced draft counter flow cooling tower performance with sufficient accuracy. Confirmation experiment was done using optimum combination showed that cooling tower effectiveness was found by experiment is closer to the predicated value.
Keywords: Optimization, cooling tower, performance, taguchi method.

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Review on Forming Behaviour of Tailor-Welded Blanks

Shah Harindra, Patel B.C. and Shah Jay[3]
Shris'ad Vidya Mandal Institute of Technology, Bharuch, Gujarat, INDIA

Abstract: In this paper, an overall review of the different parameter affecting on formability of tailor-welded blanks process is presented so that other researchers can concentrate on same to further critical investigations in this area. Tailor-welded blanks has been widely used in automobile and aerospace application now-a-days. It is the combination of more than or equal to two sheets having different material, thickness and coatings. Efforts have been put for determining the formability of TWB by various authors. Authors have been compared various test data for formability tests of TWB analytically with the help of various software. They have compared analytical data with practical data which were carried out in early 90's for formability test when various software were not available. The testing of data and analyzing them by generating Forming Limit Diagram (FLD) for various tests parameters carried out by Limit Dome Height (LDH) test has been being much simpler analytically rather than conducting them practically. The efforts have also been put to conduct data and to verifying them analytically for deep drawing process of formability for TWB sheets with the help of various available software codes. Future scope may include to conduct data practically and to analyzed them by varying various test parameters for deep drawing process of a cylindrical cups on a new software HYPERWORKS which is now-a-days

immerging as a powerful tool for software applications due to its some key features of being more efficient and accurate than other available software codes. The analyzing process is very fast, reliable and accurate compare to other finite element code available in the market.

Keywords: Tailor-welded blanks, Formability, Deep drawing process.

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Effect of Parameters in Once-Through Boiler for Controlling Reheat Steam Temperature in Supercritical Power Plants - Review

Kumar P. Ravindra[1], Raju V.R.[2] and Kumar N. Ravi[3]
[1]Laki Reddy Bali Reddy Engineering College (Autonomous), Mylavaram, Vijayawada, Krishna (DT), AP, INDIA
[2]JNTU College of Engineering, Vijayanagaram (DT) AP, INDIA
[3]MVGR College of Engineering, Vijayanagaram (DT) AP, INDIA

Abstract: In once through boilers, superheated steam generated at a pressure and temperature above the critical point of 221.2 bar & 375^0C is controlled by means of coordinated feed water flow and spray attemperation. For controlling Reheat steam temperature, many methods are being adopted namely Burner Tilt, Gas Recirculation, divided back pass dampers, excess air and steam bypass as primary control and feed water attemperation is considered as an emergency control. When the boiler is operated in sliding pressure mode the cold reheat steam temperature is higher compared to constant pressure operation. The adjustment required for maintaining constant Reheat outlet temperature is larger in constant pressure operation mode. In general spray is not used for RH steam temperature control for boilers designed for constant pressure operation since the spray quantity required will be large and it will effect on plant heat rate. Utility boilers are operated under sliding pressure mode and hence RH steam temperature control by spray is a common practice especially for once-through boilers. This paper deals with the benefits and losses of using spray for RH steam temperature control in lieu of other control mechanisms. If the plant incorporates reheat and several stages of feed heating, there is about a 2% gain in thermal efficiency compared with the corresponding subcritical cycle.

Keywords: Once-Through Boilers, Supercritical cycle, Reheat, and Superheat, Gas Recirculation.

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Implementation of New CONKAN System: A Case Study

Pathak Ravindra[1] and Somani K. Sunil[2]
[1]S. Gyan Vihar University, Jaipur, INDIA
[2]Medicaps Institute of Technology and Management, Indore, MP, INDIA

Abstract: The KANBAN Control was designed to prevent individual buffer levels from designated limits and CONWIP was designed for controlling of buffer of the entire line. Therefore we developed the hybrid systems where the CONWIP control is supplemented with KANBAN cells.We developed several New Hybrid Control systems namely CONKAN With Single Card -KANBAN Control System , CONKAN With Multi Card -KANBAN Control System , CONKAN With Single Card CONWIP Control System, CONKAN With Multi Card –CONWIP Control System. In this paper we implemented these models in industry and we evaluated the performances measures like production rate, cycle time and Work In Process for demand rate with various buffer capacities for all control policies and comparatively evaluated them with each other. From the results we concluded that, the CONKAN Production control systems perform superior to the Basic Control policies in a typical assembly manufacturing system. We also showed the individual performance of different policies. Therefore, this research contributes a new control policy and understanding of control mechanisms, and provides valuable insights to production managers.

Keywords: KANBAN, CONWIP, CONKAN.

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Prediction of Flank Wear of Single Point Cutting tool During Turning Process using Soft Computing Techniques

Ratna Sanatan[1] and Ghose Joyjeet[2]
[1]GLA University, Mathura-281406, UP., INDIA
[2]BIT Mesra, Ranchi-835215, INDIA

Abstract: This paper focuses on the learning and generalization ability of the artificial neural network (ANN) for predicting tool wear during hard turning process under oblique turning conditions. In this paper theoretical and experimental studies are carried out to investigate the intrinsic relationship between tool flank wear and operational conditions in metal cutting process (turning) using uncoated carbide cutting inserts and without using any coolant. A set of tool wear

cutting tests using uncoated carbide cutting inserts are performed under different operational conditions and the tool flank wear values are measured with help of an optical microscope. The flank wear is taken as the response (output) variable measured during turning while cutting speed, feed, depth of cut and machining time were taken as the input parameters. Predictions for the response variable is obtained with the help of neural network (NN). Predicted values of the responses by ANN technique were compared with the experimental values and their closeness was determined. A good agreements between the predicted and measured tool flank wear land width show that the ANN model can accurately predict the tool flank wear up to an appreciable extent.
Keywords: Artificial neural network; Flank wear land width; Metal cutting; Response variable; Carbide cutting insert.

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Molecular Dynamics Simulation Study of Novel Properties of Defect Full Single Walled Carbon Nanotubes

Mausam Kuwar, Singh P Ravindra and Sharma Kamal
[1]Mechanical Engineering Department, GLA University Mathura, Uttar Pradesh- 281406, INDIA

Abstract: Basis of the present study is comparative investigation of effects produced by Stone-Wales (S-W) and vacancy defects (VD) on the novel performance of single walled carbon Nanotubes (SWCNTs). The variation of defect is 1 to 4 in both VD and S-W. Molecular dynamics (MD) simulation has been used to generate the mechanical performance of SWCNTs. Simulations have been carried out on a 42.59Å long armchair (6, 6) and (10, 10) SWCNTs by varying their relative positions and orientations. Tensile strengths are reduced by an average value of 23.48% and 28.2% for 4 VD and 4 S-W defects respectively. The Young's modulus of pristine CNT is weakened by 9.38% and 11.23% for S-W defects and VD respectively.
Keywords: Single-walled carbon nanotube; Mechanical performance; Young Modulus; Molecular Dynamics; Stone Wales defect; Vacancy defect.

ISCA-ISC-2012-07-EngS-Tex-01

Occupational Health Hazards Experienced by Knitting Industry Workers

Meenaxi Tiwari and Sudha Babel
College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, INDIA

Abstract: Work kills more people than war, says ILO some 6000 workers a day, or on every 15 seconds, die from occupational accidents & diseases (T.K. Joshi, 2004). In India the traditional public health concerns likes communicable diseases, malnutrition, poor environmental sanitation and reproductive health care get emphasis and priorities in the health policy. The work environment has been described as the aggregate of all living and working conditions that may influence the life and health of the workers or workmen. There are different factors, which are responsible to create the hazards in the working environment. In industry these are Physical, Biological, Chemical and Ergonomic (personal) factors. There are some other aspects, which are responsible to create hazards in the work place environment i.e. shift work, smoking at work place, job strained improper use of personal protective equipments etc. The introduction of hazards technologies in industry has resulted in high accident rates, occupational diseases, and unhealthy working environments. Most workers are illiterate and do not know what protective measures should be adopted for their jobs. Most of the workforce is not prepared to cope with the hazards posed by manufacturing and industrial processes. The present study was designed to know the impact of hazards in knitting industry workers. Hazards in the workplace are often caused by the use of materials, tools, machinery and chemicals. Diseases and accidents in the work place are an appalling tragedy.
Keywords: Knitting industry, Occupational health hazards,working environment,health.

ISCA-ISC-2012-07-EngS-Tex-02

A Step Towards Environmental Protection in Textile Wet Processing

Shah S.R. and Shah J.N.
Faculty of Technology and Engineering, The M. S. University of Baroda, Vadodara 390 001, INDIA

Abstract: Environmental awareness is the most often talked subject in today's industrial and social scene all over the world. In India, right now the quantum of problem associated with the effluent by industrial waste is small but with rapid industrialization, increases rapidly to a significant level. Chemical processing of textile material is one of the leading consumers of water (50 to 300 liters of water per kg of textile material) and the second biggest effluent generating industry. Among the various wet processing steps, pretreatment process, utilize the highest amount of water. Many approaches, namely, development of machines/techniques to reduce liquor consumption, application of green chemicals,

biotechnology applications, quality control and inventory management, and others have been made to minimize water/ effluent minimization. In the present research, the two important steps in pretreatment process, namely mercerization of cotton and scouring of synthetic fibers have been centralized through water consumption to minimize effluent loads. Both these processes have been performed in the present work through the application of solvents (no water used). After the said pretreatment processes more than 90% of solvent can be recovered and recycled for next processes. The new innovative processes were compared with the conventional processes. The results obtained are quite comparable to that of conventional process and encouraging. In future commercialization of these processes will be tried.
Key words : Environment, Pretreatment, Solvent, Textiles, Wet processing

ISCA-ISC-2012-07-EngS-Tex-03

Innovative Plasma Technology in Textile Processing: A Step Towards Green Environment

Shah J.N. and Shah S.R.
Department of Textile Chemistry, Faculty of Tech. and Engg., The M.S. University of Baroda, Vadodara, Gujarat, INDIA

Abstract: Langmuir I. invented plasma terminology in 1926 as 4th state of the matter. Plasma is a special state of matter in which existing at the same time positive ions, negative ions, electrons... and the total positive charge is equal to negative charge. Since plasma is related to high energy charged particles, so people can use plasma to give energy to other compounds for surface treatment, etching, cleaning, sputtering. This technology can be explored in the field of textile processing as an unconventional process. The conventional wet treatments applied in textile processing for fibre surface modification and others are associated with many constraints. These treatments mainly concern with energy, cost and environmental issues. Application of Plasma technology at low temperature in textile processing can prove to be the best alternative for these issues. Various machines and techniques have been developed for generation and application of plasma to the textile materials. The innovative reactions mainly occur on the fibre surface, forming free radicals resulting in surface modification. Plasma technology can be explored in various areas of textile processing e.g. surface modification of fibres, removal of natural/added impurities from the textile material, improvement of wettability of textiles and imparting functional finishing which have been reviewed considerably in this communication.
Keywords: Plasma, textiles, wetprocessing, surface modification, grafting.

ISCA-ISC-2012-07-EngS-Tex-04

Application of Multi-Criteria Decision Making (MCDM) Techniques for Ranking of Handloom Fabrics as Summer Clothing

Mitra A.[1] and Majumdar P.K.[2]
[1]Visva-Bharati University, Department of Silpa-Sadana,Textile Section, INDIA
[2]Govt. College of Engineering and Textile Technology, Textile Department, Serampore, Hooghly, WB, INDIA.

Abstract: Multi-criteria Decision Making (MCDM) is a very popular discipline of Operations Research (OR). It deals with the selection of optimal alternatives according to their preferential rank from all feasible alternatives/options under the presence of multiple (finite number of) decision criteria. Although MCDM techniques have wide range of applications in different areas including production and other engineering fields, their application in the domain of textiles is very limited. There is no reported attempt for ranking of fabrics and thereby selecting the best fabric for a specific application using MCDM methods. However, selection of best fabric for a particular end-use requirement, like for the purpose of summer clothing, in this case, is not a very easy task. Here, multiple criteria have to be taken into consideration while ranking the fabrics or selecting the best fabric. This is a typical situation which involves multi-criteria decision making (MCDM). In the present article, an attempt has been made to develop an index of handloom fabric quality, which should be a benchmark for choosing the handloom fabrics as summer clothing. The Analytic Hierarchy Process (AHP) and Multiplicative Analytic Hierarchy Process (MAHP) of MCDM technique have been used here for ranking 25 handloom cotton fabrics in terms of their quality value considering their applicability towards summer clothing on the basis of three important comfort attributes namely drape coefficient, air permeability and thermal resistance. The efficacy of the two variants of MCDM methods was determined by considering a rank correlation analysis. The rank correlation among the two MCDM methods was found to be 0.926 which implied that the rankings given by both AHP and MAHP were in high degree of agreement with each other, and any of the two methods could be chosen for ranking the fabrics.
Keywords: Multi-criteria Decision Making, Decision criteria, Handloom fabric, Analytic Hierarchy Process.

ISCA-ISC-2012-07-EngS-Tex-05

Investigation of Suitability of Eri over Acrylic and Woollen Yarn for Making Winter Garments through Multi-Criteria Decision Making (MCDM) approach

Choudhuri Prabir Kumar[1] and Majumdar Prabal Kumar[2]
[1]Visva Bharati University, Silpa Sadana, Sriniketan-731236, WB, INDIA
[2]Government College of Engineering and Textile Technology, Serampore-712201,WB, INDIA

Abstract: Eri silk among the four commercially available variety of silks in India possess all required properties to be converted into ring spun yarn and consequently into fabrics. This variety of silk is reported to have excellent thermal insulation character which is very closer to wool. But its extent of suitability as an alternative to wool or other cheaper fibre like acrylic, widely used for warmth giving fabrics remained unexplored. This paper deals with the manufacturing of plain woven fabrics made of eri silk, acrylic and woolen yarn under identical conditions, evaluation of tensile properties of the respective yarns and thermal insulation values of the fabrics made out of these. With the values of the above stated parameters obtained and using the multiplicative AHP method of Multi-Criteria Decision Making (MCDM) technique, a branch of operations research, the suitability of eri over wool and acrylic has been investigated. It is found that when raw material cost, thermal insulation values and tensile behavior are altogether taken into considerations, the eri becomes more acceptable than woolen yarn for manufacturing winter garments.
Keywords: Acrylic, AHP, Eri silk, MCDM, tensile properties, thermal insulation value.

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Eco-Friendly Plasma Technology for Surface Modification of Woollen Substrates

Agrawal Bipin J.
Dept. of Textile Chemistry, Faculty of Tech. and Engi., The Maharaja Sayajirao Uni. of Baroda, Vadodara, Gujarat, INDIA

Abstract: The present day scenario in the textile processing calls for the conservation of energy or usage of low amount of energy. The chemical wet processing of textiles continues to expand each year as older products and processes are replaced by the introduction of novel products and innovative processes. Plasma technology is one such cleaner technology, which is well known for imparting functional finishes to textile materials without the use of harmful chemicals or water. Plasma, the fourth state that comes after solid, liquid and gaseous states, is the most active state of matter. It comprises ions, electrons, excited atoms and molecules. There are various methods for the application of plasma to the textile substrates. However, the use of atmospheric pressure cold plasma is now well established as a versatile technology for modifying the surfaces of textiles. Plasma surface treatments show distinct advantages, because they are able to modify the surface properties of inert materials, sometimes with environment friendly devices. The treatment produces no more than a surface reaction and it does not alter the bulk properties of textiles. Since plasma action is limited to the depth of some tens of nano-metres below the fiber surface, changes occur in the superficial properties of textiles, in particular the surface chemistry and morphology. On textile surfaces, three main effects can be obtained depending on the treatment conditions: the cleaning effect, the increase of micro roughness and the production of radicals to obtain hydrophilic surfaces. The energetic species of cold plasma can break the covalent bonds of the fiber at its surface and etch or functionalize its surface. The present paper deals with various opportunities for plasma treatment for enhancing wettability, dyeability, printability, for improving thermal properties, or for decreasing shrink resistance of wool. Plasma processing does not require the use of water or chemicals, resulting in an economical and ecological process. It is an environmentally friendly process and has an edge over chemical processes.
Keywords: Plasma, substrate, dyeability, thermal properties, shrink resistance

ISCA-ISC-2012-07-EngS-Tex-07

Foam Processing of Textiles – A Novel Approach for Conservation of Energy and Water

Agrawal Bipin J.
Dept. of Textile Chemistry, Faculty of Tech. and Engi., The Maharaja Sayajirao Uni. of Baroda, Vadodara, Gujarat, INDIA

Abstract: Foam processing is an energy-conserving alternative to the conventional wet processing, viz. pretreatment, dyeing, printing and finishing of textiles. The application of foam processing leads to considerable savings in the energy required for heating, drying, thermo-fixing, and steaming because the water content is very low. The foam processes bring down the liquor ratios required for pretreatment, dyeing and finishing by producing uniform foam with the required

characteristics in terms of viscosity, stability, and blow ratio. During the foam application method, air replaces water as the transport medium between the reagent and the textile. The foam processing is a novel application system for treating porous substrates with foamed chemicals at very low wet pick-ups. It involves the use of a rapidly-breaking low-density foam or froth as the delivery medium for finishing chemicals, precise metering and flow control for delivery of foam to the substrate, pressure-driven impregnation of the foam into the substrate, and an applicator system designed to allow uniform high-speed application and collapse of the foam in a single step. Foam processing technology is a typical solution of low-wet and energy-saving; it guarantees a minimum volume of liquors for applications, and can make uniform distribution of chemicals, which is in compliance with direction of the green environment. Foam technology has a wide application, such as foam sizing, foam bleaching, foam mercerizing, foam printing, foam dyeing and various foam finishing processes, mainly for cotton, synthetic fibers and their blends. Textile finishes such as water repellent finish, fire retardant finish, soil release finish, permanent finish, softening finish, resin finish, moth proofing finish, antistatic finish, etc. can be readily achieved with foam finishing technique.
Keywords: foam processing, energy-saving, low wet pick-up, finishes, applicator.

ISCA-ISC-2012-07-EngS-Tex-08

Smart Textile Materials

Kumar Alok[1] and Das Biswa Ranjan[2]
[1]Uttar Pradesh Textile Technology Institute, Kanpur-208001, Uttar Pradesh, INDIA
[2]Department of Textile Technology, Indian Institute of Technology, New Delhi-110016, INDIA

Abstract: Smart textiles are defined as the textiles, that can sense and react to environmental conditions or stimuli from mechanical, thermal, chemical, electrical or magnetic sources and according to their functional activity, these smart textiles can be classified in three broad categories; passive, active and ultra smart textiles. In this review article, the principles of various types of materials; like phase change, shape memory, chromic, luminescent, conductive, membrane & photovoltaic, which make them as suitable candidate to use in smart textiles are discussed. The various applications of smart materials in textile products are brought out.

ISCA-ISC-2012-8EVS-01

Solid Waste Pollution Study along Mithi River of Mumbai, India

Singare P.U.
Department of Chemistry, Bhavan's College, Munshi Nagar, Andheri (West), Mumbai 400058, MS, INDIA

Abstract: The Mithi River is one of the most polluted rivers in Mumbai region. This River is a confluence of tail water discharges of Powai and Vihar Lakes. Mithi River originates at Powai and meets Arabian Sea at Mahim flowing through a residential and industrial complex of Powai, Sakinaka, Kurla and Mahim over a distance about 15 Kms. The river once upon a time, acted as a storm water outlet of the city has turned into one of the dirtiest drainage filled with mud, sludge, etc. This river is treated like an open drain by the citizens who discharge raw sewage, industrial waste and garbage unchecked. The water with sewage and industrial waste is a threat to marine life and the river is showing sign of total loss of life support system. The river has turned into one-third of its size due to reclamation of Bandra -Kurla Complex (BKC). Moreover, a large mangrove patch that provided a natural barrier against flooding was illegally reclaimed in between the river and the complex. In 1994, the National Environmental Engineering Research Institute (NEERI) and the Indian Institute of Oceanography submitted a joint report on the improvement of the river and warned about the ineffectiveness of the river as a rainwater outlet due to severe pollution. Despite of the previous report by NEERI, no detailed quantification studies on the accumulation of Non-Biodegradable Solid Waste (NBDSW) material have been made. It is important here to note that these NBDSW materials where one of the major factor for water logging along Mithi river causing havoc among the urban people in general, and the poor, in particular, especially those living in sub-standard housing in the most vulnerable locations along the Mithi river during 26 July, 2005 deluge in Mumbai. Understanding the existing status, an attempt has been made in the present study to quantify the accumulation of three important types of Non-Biodegradable Solid Waste (NBDSW) material namely plastics, synthetic rubber and glass at three sampling stations along the Mithi River namely Airport, CST road, and BKC of Mumbai. The results of present investigation indicates that in the initial collection (before spring tide) along different sampling stations of Mithi River, contribution due to plastic materials varies from minimum of 34.3 % to maximum of 62.7 %, synthetic rubber materials contribution was between 35.0 % and 59.5 %, while contribution of glass was between 2.2 % to 6.2 %. Similarly in final collection (after spring tide) along different sampling stations, contribution of plastic materials was minimum of 23.4 % and maximum of 34.7 % that of synthetic rubber was between 62.0 % and 70.1 %, while glass contributes to minimum of 3.5 % and maximum of 6.9 %. On the basis of above findings, it is suggested that accumulation of plastics and synthetic rubber can be controlled by recycling and incineration, while accumulation of glass can be controlled only by recycling. Further the pollution due to NBDSW materials along Mithi River can be avoided be clearing them at the point source itself, by relocating the small scale processing unit and controlling the encroachment by hutments along the River. It is expected that the damage, human loss and transport disruptions that the city faced due to the heavy rain on July 26 would be avoided in future if steps are taken in time to rejuvenate the river.

Keywords: Non-Biodegradable Solid Waste; plastics; synthetic rubber; glass; Mithi River; Mumbai; India.

ISCA-ISC-2012-8EVS-02

Heavy Metal Accumulation in *Azolla Pinnata* of Dal Lake Ecosystem, India

Shafi Nuzhat, Pandit Ashok K. and Kamili Azra N.
Centre of Research for Development, University of Kashmir, Srinagar-190006, Jammu and Kashmir, INDIA

Abstract: Free floating macrophytes play a significant role in removing different types of metals from the water bodies and carry out its purification. In view of their potential *Azolla pinnata* was collected from Dal lake, an urban anthropogenic affected water body of Srinagar city and were studied for accumulation of 5 heavy metals. *Azolla pinnata* were exposed to 4 mg/l concentration of 5 different heavy metals in the form of (Cu) $CuSo_4$, (Pb) $PbNo_3$, (Cr) $K_2Cr_2o_7$, (Cd) $CdNo_3$ and (Zn) $ZnSo_4$ for 10 days experimentation period in laboratory conditions. Atomic absorption spectrophotometric analysis has shown initial concentration of these metals in *Azolla pinnata* as Cu(0.02ppm), Pb(0.085ppm), Cr(0.07ppm), Cd(0.006ppm) and Zn(0.06ppm) and after 10 days period the plant has accumulated Cu(0.90ppm), Pb(0.42ppm), Cr(0.27ppm), Cd(0.042ppm) and Zn (2.1ppm) in the order of Zn>Cu>Pb>Cr>Cd. Present study highlights the fact that *Azolla pinnata* bioaccumulates high concentration of heavy metals, therefore can play an important role in their bioremediation from lake ecosystems under heavy stress of anthropogenic pressures and the waste water treatment plants, if restored and harvested on scientific basis.

ISCA-ISC-2012-8EVS-03

Predicting Soil Erosion Potential and Drainage basin Characteristics of Lidder Watershed (catchment) in Lidder valley (Kashmir Himalaya), India

Sumira Rasool[1], Wanganeo Ashwani[1], Ashok K. Pandit[2] and Shakeel Ahmad[3]
[1]Department of Environmental Science and Limnology, Barkatullah University, Bhopal, MP, INDIA
[2]Centre of Research for Development PG Department of Environmental Science, University of Kashmir Srinagar, J&K, INDIA
[3]Department of Geography and Regional Development, University of Kashmir Srinagar, J&K, INDIA

Abstract: The present study was carried out on Lidder drainage basin in Kashmir Himalayas supporting a varied topography and exhibiting altitudinal extremes of 1600 m and 5200 m (msl). Present paper revealed that the drainage density (Dd) and Stream frequency (Fu) of the Lidder is 2.52 and 3.32 which signifies that Lidder stream has efficient drainage. Lidder stream is sixth order stream; in which the largest share is contributed by first order streams. It also highlights the different soil erosion levels and classifies the Lidder catchment in to five soil erosion zones with respect to soil erosion intensities.
Keywords: Erosion levels, topography, Bifurcation ratio, drainage density, stream fr.

ISCA-ISC-2012-8EVS-04

Utility of Physicochemistry and Zoobenthic Community as Indicators of Pollution Status in River Jhelum in Kashmir, India

Sumira Rasool[1], Syed Abida[2], Syed Ifshana[2] and Mohd Farooq Mir[2]
[1]Department of Environmental Science and Limnology, Barkatullah University Bhopal, MP, INDIA
[2]Hydrobiology Research Laboratory, S P College Srinagar, J&K, INDIA

Abstract: A detailed study was carried out on River Jhelum in which physico-chemical parameters including pH, temperature, electrical conductivity, total hardness nutrients and zoobenthic community were studied for the period 2010-2011. Significant variations were observed in relative diversity of zoobenthic community. The dominance of Ephemeroptera over Trichoptera and Coleopteran in the upstream reach indicated its pollution free status. While downstream (mouth of river) Annelida was dominant over Arthropoda and Mollusca was show vice versa of above. The overall density of insects decreased down the stream and a significant increase in population density of Dipterans, Annelids and Molluscs indicate that the river is nutrient rich as also shown by water chemistry. The water of the River was well buffered as the range of pH was always greater than 7. Downstream water was hard water type which seemed to be influenced by the Anthropogenic activity in the catchment area.
Keywords: River, zoobenthos, Indicators, Physico-chemical, Pollution.

ISCA-ISC-2012-8EVS-05

Synthesis and Efficiency of Magnetic Nanoparticles Loaded Poly (Acrylamide-co-Maleic acid) Hydrogel in Uptaking Copper Ions from Aqueous Solution

Sharma Neeraj and Tiwari Alka
Department of Chemistry, Govt. V.Y.T. PG. Autonomous College, Durg-491001, Chhattisgarh INDIA

Abstract: A novel magnetic nanoparticles loaded poly(acrylamide-co-maleic acid) (PAM) hydrogel has been synthesised & it is cross-linked by methylene bisacrylamide for the investigation of it's efficiency in uptaking copper ions from aqueous solution by batch method. The swelling behavior of the hydrogel were investigated. Metal ion uptake capacity of the copolymer was evaluated in the light of varying pH, contact time, temperature, adsorbent dose and concentration.The synthesized copolymer was characterized by FTIR & SEM analysis. The size, structure and coating of the magnetic nanoparticles were characterized by TEM, XRD and FTIR respectively. The adsorption data was fitted well in the Langmuir and Freundlich models and various static parameters were calculated. It is stated that this hydrogel can be regenerated efficiently (>95%) and used repeatedly.
Keywords: magnetic nanoparticles, hydrogel, copper ions, copolymer acrylamide, maleic acid.

ISCA-ISC-2012-8EVS-06

Association between 10.7cm Flux and Temperatures, Winds Monsoon and Climate Change

Joshi Indira Sudhir
Indian Institute of Tropical Meteorology, Dr. HomiBhabha Road, Pashan, Pune- 411 008, MH, INDIA

Abstract: An examination has been undertaken between 10.7cm Solar Flux, winds and temperatures during winter (November-January) and their relation to monsoon over India. 26-year data of winds and temperatures of high/low-

latitudes during the winter period at 200mb and 30mb levels are utilized. 10.7 cm Flux data are collected from Solar Geophysical Data Books. Percentage departures of rainfall (June-September) data are collected from India Meteorological Department (IMD). From the above study it is inferred that 10.7 cm Flux and high latitudes temperatures are positively associated and they are having an in phase relation with monsoon activity over India.

ISCA-ISC-2012-8EVS-07

Impact of Human Activities on the Quality of Groundwater from Sangamner Area, Ahmednagar District, Maharashtra, India

Deshmukh K.K.
Sangamner Nagarpalika Arts, D.J. Malpani Commerce and BN Sarda Science College, Sangamner, MS, INDIA

Abstract: Groundwater is liable to contamination through anthropogenic and other sources like use of chemical pesticides, addition of industrial waste, domestic and agricultural waste to the water bodies. During last decades, it has been observed that the groundwater gets polluted drastically because of increased human activities. Consequently, the number of cases of waterborn diseases have been seen causing health hazard. The study has been carried out to assess the impact of human activities on the quality of groundwater of Sangamner area, Ahmednagar district, Maharashtra. 25 groundwater samples were collected along the Pravara river during Pre and Post mansoon season and assessed the physico chemical parameters such as P^H, EC, TDS, TH, Ca^{2+}, Mg^{2+}, Na^+, $K^{+,}$ HCO_3^-, SO_4^{2-} , NO_3^- and boron. The chemical characteristics of groundwater have been found to be dominated by Ca+Mg > Na + k –HCO_3 +CO_3 indicating dominance of cation and anion exchange process. This suggests the contamination of groundwater is due to human activities. The groundwater from the majority of the samples is not suitable for drinking purposes as compared with standard limit suggested by WHO. This is posing the serious health hazard to the local population. Satinisation of groundwater, nitrate pollution, health problems, changing nature of geochemical character of groundwater has been identified as the impact of human activities in the area. People awareness regarding the remedial measures with respect to water quality should be given prime importance. In addition water quality surveillance program infrastructural set up and public participation is the need of the hour.
Keywords: Human activities, salinisation, nitrate pollution, health hazard, remedial measures.

ISCA-ISC-2012-8EVS-08

Environmental Impact Assessment of River Bed Mining, India

Mondal Subhankar, Joshi H., Singhal D.C. and Jain M.K.
Department of Hydrology, Indian Institute of Technology, Roorkee, Roorkee-247667, UP, INDIA

Abstract: The total number of parts of riverbeds presently identified for auction in the State of Himachal Pradesh is about 300 and out of this about 110 parts of river Beds are under operation. In addition, about 156 leases in river beds have been granted for the establishment of stone crushers and about 14 leases have been granted for setting up of screening plants/hollow blocks units. In total about 47.3 km^2 area is involved in rivers/stream bed mining. Swan River flowing through Una district of the state. Swan River has a total catchment area of 1200 Sq. Km and has a length of 65 Kms in Himachal Pradesh. There are 73 tributaries in the catchment area and almost all the tributaries are in the range of river bed mining, few of them are adversely affected by river bed mining. This mining activity threatening bridges, sand mining transforms the riverbeds into large and deep pits, as a result, the groundwater table drops leaving the drinking water wells on the embankments of these rivers dry. It is observed that the stage of ground water development in Una valley is 97.63 percentages and there is a falling water table trend with significant decline in pre and post monsoon which indicate that it is in critical zone. It has become clear that short-term benefits must be weighted and balanced against the resulting long-term effect of resource depletion and decline in the state of the environment. Increasing evidence of potential problems from over-extraction of river/stream beds, and the community increasing demand on and expectation of the river system. Therefore, in future Riverbed mining should be based on the principle of sustainable development.
Keywords: Swan River, Sand Mining, River Bed, Una Valley, Water Table, Sustainable Development.

ISCA-ISC-2012-8EVS-09

Seasonal Variation in Air Pollution Tolerance Index of Various Plant Species of Baroda City, India

Bhattacharya Tanushree[1], Kriplani Leena[2] and Chakraborty Sukalyan[1]
[1]Dept. of Envi. Science and Engineering, Birla Institute of Technology, Mesra Ranchi, Jharkhand, INDIA
[2]Dept. of Envi. Science, Inst. of Science and Tech. for Advanced Studies and Research, Gujarat, INDIA

Abstract: Clean air, pure water and nutritious food are basic amenities of life but the quality of air, water and land is deteriorating continuously. Air Pollution is any atmospheric condition in which certain substances are present in such concentration that can produce undesirable effects on man & its environment Industrial air pollution is more complex than

most other environmental challenges. Air pollution tolerance level differs from plant to plant. To evaluate the tolerance level of plant species to air pollution, four leaf parameters are used to drive an empirical number indicating the Air Pollution Tolerance Index (APTI) Air pollution tolerance index has also been used to rank plant species in their order of tolerance to air pollution .The aim of this study is therefore to determine the APTI values of six plants species which were collected from 9 sites of Baroda city. Leaf samples of selected plant species found at all the sampling sites were collected i.e *Azadirachtaindica, Polyalthialongifolia,Ficus bengalensis, Mangifera indica, Acacia arabica & Peltophorum pterocarpum* in three different seasons (Monsoon, Winter& Summer). Chlorophyll value was highest during monsoon season & decreased in winter and summer. All the plant samples collected from polluted site exhibited a pH towards acidic side. Present study showed higher leaf relative water content in all the species was in monsoon season. Whereas the higher average ascorbic acid concentration was found in winter season followed by summer and least in monsoon. Based on the highest calculated APTI irrespective of the season the plants were found to having the following order *Polyalthia longifolia* > *Azadirachta indica* > *Ficus bengalensis* > *Acacia Arabica* > *Peltophorum pterocarpum* > *Mangifera indica*. But if the average APTI values of all the season is to be considered then the order will be as follows: *Azadirachta indica*> *Polyalthia longifolia*> *Mangifera indica*> *Ficus bengalensis*> *Acacia Arabica*> *Peltophorum pterocarpum.* Except *Acacia* all the other species showed insignificant seasonal variation in APTI according to ANOVA, á=0.05.

Keywords: APTI, seasonal variation, air pollution, tolerance, Baroda city.

ISCA-ISC-2012-8EVS-10

Spatial Distribution of Heavy Metal Concentrations in the Seawater and Surface Sediment Samples Collected from Gulf of Kutch, India

Chakraborty Sukalyan[1], Bhattacharya Tanushree[1] and Singh Gurmeet[2]
[1]Department of Environmental Science and Engineering, Birla Institute of Technology, Mesra, Ranchi - 835215, INDIA
[2]School of Environmental Science, Jawahar Lal Nehru University, Delhi, INDIA

Abstract: Coastal pollution is an alarming phenomenon occurring throughout the world. India is not an exception due to the transformation of the coastlines into industrial hub for logistic convenience. Gulf of Kutch coastline in Gujarat, bordering the Arabian sea similarly has become the centre of industrial growth and economic boom in Gujarat. Innumerable industries like petroleum and petrochemicals-based industry, soda ash, cement, fertilizer industries, salt works, thermal power stations and ship-breaking units flourish in this area. The present study was attempted to assess the heavy metal contamination levels in water and sediment of the Sikka and Vadinar areas, two heavily industrialised sites. Total metal concentrations of Cd, Cr, Cu, Fe, Mn, Ni, Pb, Zn were determined in seawater and surficial sediments during November to January 2011. Onsite parameters viz. pH, salinity, EC and TDS of the water was also recorded. The level of pollution was evaluated using pollution indicators like Contamination factor, Enrichment factor and Geochemical index in order to determine anthropogenic influence. The sampling sites were found to be enriched with Cd and Zn showing higher EF and I_{geo}. TDS showed positive correlation with salinity and conductivity suggesting the inherent contribution of sea water. Significant inter-elemental correlations (i.e. Fe-Mn, Fe-Cu, Fe-Cr, Fe-Zn, Cr-Cu, Cu-Mn, Cd-Zn) and inverse correlations (i.e. Cd-Pb, Ni-Pb, and Zn-Pb) were also observed in the sea water. Further significant correlations of organic carbon with most of the metals (except Zn Ni and Mn) indicates that the sediment organic matter is acting as metal carrier and plays an important role in their distribution pattern.

Keywords: Seawater, sediment, heavy metals, geostatistical calculations, Gulf of Kutch.

ISCA-ISC-2012-8EVS-11

Adsorption of Cadmium ions onto nano iron oxide loaded Chitosan microspheres

Dhiwar Chanchanl and Tiwari Alka
Deparment of Chemiatry, Govt. V.Y.T. PG. Autonomous College, Durg-491001, Chhattisgarh, INDIA

Abstract: This study describes the batch adsorption process for the removal of cadmium ions from aqueous solution using nano iron oxide loaded chitosan microspheres. The adsorption data were applied to Langmuir and Freundlich isotherm equations. In the batch mode experiments the influence of pH, temperature, time, presence of salts and chemical composition were studied. The maximum adsorption of cadmium ions was observed at 4.0 pH for 20 $mgdm^{-3}$ initial metal ion concentration.

Keywords: Iron oxide, adsorption, chitosan.

ISCA-ISC-2012-8EVS-12

Removal of Malachite Green from Water Using Magnetic adsorbent Composed of Nano Iron Oxide and Alginate Beads

Soni Anjali and Tiwari Alka
Govt. V. Y. T. PG. Autonomous College, Durg 491001, CG, INDIA

Abstract: The adsorption of malachite green dye onto magnetic adsorbent was carried out and various factors were studied for optimum removal of this dye. The effects of different reaction parameters such as initial concentration, contact time, temperature and pH were investigated. The uptake of Malachite green was found to increase with increasing initial concentration, contact time and temperature up to a certain level and then observed to decrease. The adsorption equilibrium data were best represented by the freundlich model. The adsorbent was characterized by SEM, XRD and FTIR analysis.

Keywords: Adsorption isotherm, Malachite Green, Magnetic adsorbent.

ISCA-ISC-2012-8EVS-13

A laboratory Study on Removal of Arsenic from Contaminated Groundwater by Oxidation-Coagulation Process at optimized pH

Bordoloi Shreemoyee and Dutta Robin K.
Department of Chemical Sciences, Tezpur University, Tezpur 784028, Assam, INDIA

Abstract: The potential of enhancing As(III) removal was investigated in a pilot study for the process of oxidation, precipitation and direct sand filtration at optimized pH. The process included pre-oxidation of As(III) to As(V) with potassium permanganate and co-precipitation of arsenic by adding ferric salt and at optimized pH by addition of sodium bicarbonate as buffering agent and subsequent filtration of the water through a bucket sand filter. Sand filters exhibit good potential for removing ferric precipitates with adsorbed arsenic. The arsenic level goes from initial 500-100 to 5-1 mg/L when the water does not contain iron initially. The final pH of the water remains at about 7.3, which is within acceptable range for drinking. The pH of 8.3 provided by baking soda has been brought to 7.3 by $FeCl_3$, which is a Lewis acid and produces OH^- ions by hydrolysis.

Keywords: Arsenic, oxidation-coagulation, $FeCl_3$, pH.

ISCA-ISC-2012-8EVS-14

Studies on Physico-Chemical Analysis of Ground Water From Villages Around Nashik City, Maharashtra State, India

Dhondge Pratap D. and Toche R.B.
Department of Chemistry, MVP Samaj's, KTHM College, Nashik 422002, INDIA

Abstract: The present investigation was carried out to study the physico-chemical characteristic of ground water samples collected from surrounding villages of Nashik district of Maharashtra State, India. The study area is situated between 18.33 degree and 20.53 degree North (Latitude), 73.16 degree and 75.16 degree East (Longitude) and It lies in the northwest part of the state and stands perched at an altitude of around 565 meters above the sea level. The present work has been conducted by monitoring two types of ground water i.e. dug well water and bore well water of 11 villages near to the Nashik City. Attempts were made to study and analyze the physico-chemical characteristics of the underground water. Various parameters like Electrical conductivity(EC),total dissolved solids(TDS),temperature, pH, total suspended solids, alkalinity, dissolved oxygen (DO),chemical oxygen demand(COD), chloride, sodium, potassium, sulphate (SO_4) phosphate(PO_4), etc. During the present work the questioner was prepared to check the awareness about quality of water amongst the villagers. Analysis of questioner clearly shows that, the average water quality awareness level among the villagers is medium. The results gives a clear picture of ground water quality parameter in both dug well and bore well water. In conclusion, the water tested from 11 villages near Nashik city were found below the pollution level and thus are suitable for the use of various purposes like domestic, agricultural and industrial etc.. While from the general hygienic view, awareness is a basic need of time accordingly further steps must be designed and applied by the responsible authorities.

Keywords: Underground Water, Physico-Chemical Characteristics, Parameters, water quality awareness questionnaire etc.

ISCA-ISC-2012-8EVS-15

Comparative Effect of the Flowers of *M. oleifera* and the Flowers of *A. indica* During dye Wastewater Treatment

Gupta Saru[1] and Verma P.S.[2]
[1]Department of Chemistry, Manav Rachna College of Engineering, Faridabad-121001, INDIA
[2]Department of Chemistry, University of Rajasthan, Jaipur-302004, INDIA

Abstract: The present study investigates the comparative effect of the flowers of *M. oleifera* and the flowers of *A. indica* in the electrochemical treatment of dye wastewater collected from textile industries situated in the Sanganer town of Jaipur. The dye wastewater was tested for various parameters like pH, TDS, TSS, BOD, COD and heavy metals and electrochemical treatment performed using SS316 electrodes at a current density of 35A/cm^2 for 45 minutes at 60°C and the same parameters tested again. Thereafter, electrochemical treatment was performed in two sets, I and II, using same conditions with the flowers of *M. oleifera* added in set I and the flowers of *A. indica* in set II. The parameters analyzed for the treated water of set I showed that TDS, BOD, COD, Fe, Zn decreased by 72%, 57%, 22%, 85% and 58% respectively as compared to the dye waste water effluent. The parameters analyzed for the treated water of set II, showed that the TDS, BOD, COD, Fe and Zn decreased by 68%, 100% , 42%, 64% and 30% as compared to the original dye wastewater effluent.
Keywords: M. oleifera, A. indica, parameters, dye wastewater, electrochemical treatment.

ISCA-ISC-2012-8EVS-16

Uptake, Accumulation and Translocation of Metals in *Trigonella foenum-graecum* (L.) Fenugreek grown on Soil Amended with Paper Mill Sludge

Kumar Vinod* and Chopra A.K.
Department of Zoology and Environmental Sc., Faculty of Life Sciences, Gurukula Kangri University, Haridwar, Uttarakhand, INDIA

Abstract: Uptake, accumulation ant translocation of metals was investigated in *Trigonella foenum-graecum* (fenugreek) grown on soil amended with paper mill sludge (PMS). The plants of *T. foenum-graecum* were grown in soil amended with 10%, 25%, 50%, 75%, and 100% PMS to study the effect of metals viz. Fe, Zn, Cd, Cu, Cr, Pb, Mn. The different rates of PMS showed significant (P<0.01) effect on pH, EC, CEC, OM, NO_3^{2-}, PO_4^{3-}, Fe^{2+}, Zn, Cd, Cu, Pb and Cr of the amended soil in comparison to their controls. The accumulation of the metals was found more in the soil and shoots, roots leaves and fruits of *T. foenum-graecum*. The maximum accumulation of metals was in order of shoot> root> leaves> fruits and it was increased with increase in sludge amendments. Significant positive correlation was recorded between metal accumulation and EC, CEC, OM, NO_3^{2-}, PO_4^{3-}, Fe^{2+}, Zn, Cd, Cu, Pb and Cr of the soil. The chlorophyll content showed significant (P<0.01) increase in lower amendment of sludge up to 10% to 25% in comparison to controls.
Keywords: *Trigonella foenum-graecum*, Paper mill sludge, Metals, Amendments, Accumulation, Translocation.

ISCA-ISC-2012-8EVS-17

Cadmium Removal from Ground Water by Activated Charcoal: Effect of pH, Temperature and Contact Time

Mittal Megha and Makkar Anju
Manav Rachna College of Engineering, Faridabad, HR 121001, INDIA

Abstract: Extensive industrialization and improper disposal are attributed to be a prime factor responsible for the release of heavy metals into the ecosystems. Once released, the heavy metals tend to bio-accumulate in higher trophic levels of the food chain. Cadmium has widespread use in industries and potential water pollution impact. Traditional reverse osmosis technology seems difficult to apply in developing countries like India, due to its high energy consumption. As most of the heavy metals are present as a divalent oxidation state there has been much interest in the use of adsorption technique for effective removal of divalent ions. Activated charcoal was selected for this study as it is cost effective and has good adsorption potential for heavy metals. Adsorption of cadmium on activated charcoal was carried out under two conditions: a) in column, and b) on shaker at 120 rpm. 100 mg of activated charcoal was added to different concentrations of cadmium 5, 10, 25 and 50 mg/l to obtain suspension. Rate of adsorption was determined at regular interval 5, 15, 30, 45 and 60 min. It was found that with increase in contact time on shaker, cadmium concentration decreased significantly while in column no such decrease was observed. The amount of adsorption of Cd(II) depends mainly on the pH value of the solution, contact time between adsorbent and adsorbate and temperature of the solution. Optimum conditions for the

adsorption were pH 6, temperature 40^0C and contact time 45min. The reaction followed pseudo second order kinetics and fits best to Langmuir adsorption isotherm. It was concluded that the above mentioned conditions were effective for the removal of Cd (II) up to 25 ppm only and become less effective for higher concentrations of cadmium.

Keywords: Adsorption; Cadmium; Activated Charcoal.

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Performance Evaluation of Small-Scale 'Vermifilter' for the Treatment of Wastewater

Ramakrishnaiah C.R. and Srikantha G.
BMS college of engineering, Bangalore-19, INDIA

Abstract: In recent days many developing nations cannot afford to construct and maintain costly wastewater treatment plants. They need more options for wastewater treatment at low cost. In both developed and developing nations, centralized sewage treatment system may not fulfill sustainable wastewater management requirements in future due to ever-increasing demand. Therefore in the present study an attempt is made to know the efficiency of vermifilter and non-vermifilter as decentralized treatment for parameters pH, removal of Biological oxygen demand and chemical oxygen demand as well as Solids in the wastewater. In this study the performance of a non-vermifilter and a vermifilter containing the earthworm, for the treatment of synthetic wastewater was evaluated. The synthetic wastewater was prepared with reference to actual medium wastewater concentration. The performance of vermifiltration unit using the earthworm, for wastewater treatment was studied during a 7-weeks period. The average removal efficiencies of the vermifilter were as follows: chemical oxygen demand(COD), 82.9%; Biological oxygen demand(BOD), 95.8%; Total dissolved solids, 94.4%; Total suspended solids, 89.3%; and Turbidity, 93.2% after the study state operation occurs. From the experiment data it was found that percentage reduction in concentration of BOD and COD in vermifilter was more efficient than non-vermifilter. During the process of vermifiltration, there was no sludge formation in the process and was also an odor-free process and the resulting vermifiltered water was clean enough to be reused for farm irrigation and gardens. In addition, analysis of earthworm characteristics implied that larger earthworm (>0.4 g) abundance might play more positive role on wastewater treatment in vermifilter, compared to smaller worm. Thus, earthworm activities had significant relationship with treatment efficiency of parameters by vermifilter of wastewater.

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Estimation of Acetaminophen in Waste Water of Bhilai Region, India

Mathai Rena V. and Santosh Kumar
Department of chemistry Bhilai Institute of Technology, Durg, Chhattisgarh, INDIA

Abstract: Two simple, rapid and sensitive spectrophotometric methods were selected for the estimation of acetaminophen in waste water. The first method was based on oxidation of drug with iron (iii) ions. The second method is based on reaction of drug with sodium bismuthate. The first method is found to be comparatively successful. The results have been statistically compared with those obtained by proposed methods.

Keywords: Spectrophotometry, Acetaminophen, Iron (iii), Sodiumbismuthate.

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Influence of Reaction Intermediates on the Oscillation in the Concentration of insitu formed Hydrogen peroxide during the Photocatalytic Degradation of Phenol Pollutant in Water on Semiconductor Oxides

Sindhu Joseph, Jyothi K.P., Suja P. Devipriya, Suguna Yesodharan and Yesodharan E.P
School of Environmental StudiesCochin University of Science and Technology, Kochi 682022, INDIA

Abstract: Phenols are common pollutants in many petrochemical industry wastewaters. Due to the stability of the aromatic ring their destruction requires extreme conditions. Photocatalysis using semiconductor oxides as catalysts is found to be an effective Advanced Oxidation Process (AOP) for the mineralisation of phenol. The degradation proceeds through the formation of various intermediates which eventually get mineralized to yield CO_2 and H_2O. The intermediates identified are hydroquinone, catechol, and benzoquinone which are formed by the interaction of photogenerated OH radicals with phenol. These intermediates do not accumulate beyond a particular concentration even though the phenol degradation continues unabated. The insitu formed H_2O_2 concentration increases and decreases periodically in a wave

like fashion indicating concurrent formation and decomposition. Externally added H_2O_2 enhances the degradation rate of phenol initially due to the generation of more reactive OH radicals by inhibiting the recombination of photogenerated electrons and holes as well as by its own self decomposition. Externally added catechol and hydroquinone inhibit the degradation of phenol initially. However their influence on the fate of H_2O_2 is not quite significant. The study also shows that the formation/decomposition of H_2O_2 is concentration dependent and after the initial build up, the formation or decomposition takes precedence depending on the concentration and composition of the reaction system. Possible reasons for the observed phenomenon are analysed and a mechanism is proposed.

Keywords: Photocatalysis, Zinc oxide, Titanium dioxide, Hydrogen peroxide, Phenol, Oscillation.

ISCA-ISC-2012-8EVS-21

Global Warming: An Impact Assessment on Cyclonic Disturbances over South Asian Region

Kazi N.M.
PG and Research Dept. of Geography, SPDM College, Shirpur, MS, INDIA

Abstract: The monsoon region of Asia is a very distinctive part of the world. It embraces the territories of the countries on the mainland from West Pakistan to Manchuria together with the arc of off-shore islands stretching from Shrilanka to Japan. It has defined the region primarily in terms of its climate which is its basic differentiating feature as Russell and Kniffen have said "it includes the maritime southern and eastern coasts of the continent ,where monsoon influences either dominate climates or are rather strongly felt". For a country like India, where the economy of the country mainly depends on agriculture, the performance of monsoon both in space and time is very crucial and important. Providing regional climate, PRECIS is an atmospheric and land surface model of limited area and high resolution which can be configured for any part of the globe, Pounding Regional Climates for Impact Studies, a regional climate modelling system developed by Hadley Centre for Climate Prediction and Research U.K. is applied over the Indian domain to investigate the impact of global warming on the cyclonic disturbances such as depressions and storms. The PRECIS simulations at 50x50 km. horizontal resolution are made for two time slices, present (1961-1990) and future (2071-2100), for two socioeconomic scenarios A2 and B2. The model simulations under the scenario of increasing green house gas concentrations and sulphate aerosols are analyzed to study the likely changes in the frequency intensity and tracks of cyclonic disturbances forming over Bay of Bengal, Arabian Sea and the Indian landmass during monsoon season, The model overestimates the frequency of cyclonic disturbances over the Indian subcontinent in baseline simulations. The change is evaluated towards the end of present centaury with respect to the baseline climate. The present study indicates that the storm tracks simulated by model are southwards as compared to the observed tracks during the monsoon season especially for the two main monsoon months, viz. July and August. The analysis suggests that the frequency of cyclonic disturbances forming over north Indian ocean is likely to reduce by 9% towards the end of the present century in response to the global warming. However the intensity of cyclonic disturbances is likely to increase by about 11% compared to the present.

Keywords: Climate change, Global warming, Cyclonic, Satellite remote sensing, Summer monsoon.

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Photocatalytic Degradation of Acid Orange -7 Using Nano Meter-Sized TiO_2

Sharma Sangita, Trivedi Parul, Patel Jayshree N., Mittal Thakkar, Gothi Vaishali and Chaudhary Smita
Department of Chemistry, Hemchandracharya North Gujarat University, Patan- 384 265, Gujarat, INDIA

Abstract: Advanced oxidation processes (AOPs) have proved used for degradation of dye named acid orange-7 present in the wastewater. Homogeneous photocatalytic degradation of acid Orange-7 with UV/H_2O_2 and heterogeneous photocatalytic degradation with UV/TiO_2 interface UV/TiO_2/H_2O_2 has been investigated. To know more about the degradation processes visible /TiO_2 and Visible/TiO_2/H_2O_2 has also been studied. The rate of reactions follow pseudo first order Kinetics. The rate of disappearance of acid dye was monitored spectrophotometrically at the visible maximum absorption wavelengths. It was found that the rate of decolourization rises by increasing the initial dosage of H_2O_2 up to critical value at which it is maximum and beyond which it is inhibited. The photo catalytic degradation studied depends on structure of dye, Dye concentration, TiO_2 concentration and pH of medium. Mechanism of photo catalytic degradation process under UV – Visible light illumination has been explained.

Keywords: TiO_2 concentration, illumination, illumination, decolourization, dosage.

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Mechanical Properties, Water Resistance and Biodegradability of Esterified Coffee Dust/poly(vinyl alcohol) Blend Film

Kathiresan Sathasivam*, Angela Teoh C.L., Rathinam Xavier, Kasi Marimuthu
Faculty of Applied Sciences, AIMST University, Semeling 08100 Bedong, Kedah, MALASIYA

Abstract: Of Late, the utilization of agricultural waste as reinforcement material in polymer composite is gaining great attention due their availability and low cost. The main drawbacks of these wastes are their hydrophilicity nature and poor mechanical properties. With an aim to overcome these disadvantages, spent coffee dust was esterified (ECD) and added to poly vinyl alcohol (PVA) to form composite films (PVA/ECD). The mechanical properties, water resistance and biodegradability of the films were investigated. It was found that PVA/ECD had higher mechanical properties and water resistivity properties as compared native coffee dust/ PVA film. Microbiological and soil burial biodegradation results indicated that the biodegradability of the PVA/ECD film strongly depended on the coffee dust proportion in the film matrix.
Keywords: Agricultural Waste, Coffee Dust, Esterification, composite.

ISCA-ISC-2012-8EVS-24

Comparative Study of Effect of PAC and GAC on Removal of COD contributing component of Sugar Industry waste water

Lakdawala M.M.[1] and Lakdawala J.M.[2]
[1]Chemistry Department, S P T Arts and Science College, Godhara, Gujarat, INDIA
[2]Prime Interior, Vapi, Gujarat, INDIA

Abstract: Rapid globalization leads us on the way to industrialization. Pollution of water by organic and inorganic chemicals is of serious environmental concern. Sugar industry is one of the biggest consumer of water, and can also introduce serious pollutant to the environment. Chemical as well as biological treatments to these waste waters are in practice since long. Powdered Activated Carbon (PAC) prepared from wood and nutshell charcoal with specific surface area of 5602.352 cm^2/gm and particle size 44 ì m and Granular Activated Carbon (GAC) prepared from wood and nutshell charcoal with specific surface area of 10.50 cm^2/gm and particle size 1.08 mm are used as adsorbents to the combined waste water of Sugar mill at room temperature. The different dosage of PAC and GAC is kept in contact for 24 hours and analyzed before and after treatment. The results of COD removal follow the Freundlich and Langmuir adsorption isotherm. Among PAC and GAC -PAC removes 62.26% of COD at the dose of 20gm/L further at the dose of 30 gm/L its 66.04%, whereas GAC removes 62.26% of COD at the dose of 20gm/L and found exhausted for higher dosages. It proves that rates of adsorption increases with the reduction in particle size.
Keywords: Adsorption isotherm, Adsorption intensity (1/n), Adsorption energy (b x 10^3), Adsorption capacity(K, $è_0$).

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Heavy Metal Contamination in Soil and Plants at Mechanic Villages, Nigeria

Ogbonna P.C., Ezenwa L.I. and Nwoha J.C.
Department of Forestry and Environmental Management, Michael Okpara University of Agriculture, Umudike, PMB 7267
Umuahia, Abia State, NIGERIA

Abstract: The study assessed the concentration of heavy metals in soil and plants at Aba and Umuahia mechanic village, Nigeria. Soil and plant samples were analyzed for zinc (Zn), lead (Pb) and cadmium (Cd). The highest concentration of Zn (3533.15 ± 37.97 mg/kg) and Pb (1154.50 ± 75.66 mg/kg) was obtained from Aba while Cd (44.00 ± 6.50 mg/kg) was Umuahia at 0-10 cm. In plants, the highest concentration of Zn (210.05 ± 5.59 mg/kg), Pb (157.65 ± 13.64 mg/kg) and Cd (22.05 ± 1.77 mg/kg) was accumulated by *Vernonia amygdalina*. The levels of Cd, Pb and Zn in soil ranged from 33.05 ± 4.31—44.00 ± 6.50, 633.00 ± 62.64—1154.50 ± 75.66 and 1449.50 ± 46.10—3533.15 ± 37.97 mg/kg while their concentration in *V. amygdalina* ranged from 9.20 ± 1.69—22.05 ± 1.77, 86.50 ± 6.36—157.65 ± 13.64, and 114.75 ± 8.70—210.05 ± 5.59 mg/kg, respectively. The concentration of Cd, Pb and Zn in *V. amygdalina* is higher than the maximum allowable limit (MAL) and this can constitute serious health risks to potential consumers since *V. amygdalina* is used as medicinal plant and for soup preparation in southern Nigeria.
Keywords: Mechanic village, heavy metals, soil, *Vernonia amygdalina*.

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Evaluation of Water Quality Index for Drinking Water of Lower Manair Dam, Karimnagar, AP, India

Reddy A. Venugopal, Reddy A. Rajender, Srujana G. and Reddy V. Krishna
Department of Botany, Kakatiya University, Warangal, Andhra Pradesh – 506009, INDIA

Abstract: The present study was intended to evaluate Water Quality Index (WQI) of Lower Manair Dam (LMD), Karimnagar (A.P) in order to ascertain the quality of drinking water. LMD is located on Manair, a tributary of river Godavari, Karimnagar (Longitude 79˙-8' E and Latitude 18˙-24' N). LMD receives inflows from its catchment area and from Sri Ram Sagar project located on river Godavari, through Kakatiya canal and Flood flow canal. Its total storage capacity is 24 TMC. LMD serves as source of irrigation water for more than 9 lakh acres in Karimnagar, Warangal, Khammam and Nalgonda districts and it is also source of drinking water for the towns of Warangal, Karimnagar, Siddipet and several other rural habitations for about 25lakh people. WQI provides a single number that express overall water quality at specific location and time, based on several water quality parameters. The method consists in the computation of Water Quality Index (WQI) on the basis of physico-chemical and biological parameters. For calculating the WQI, the following 10 parameters have been considered viz, p^H, Hardness, Calcium, Magnesium, Nitrate, Sulfate, Phosphate, BOD, COD and DO. The analysis reveals that the water quality status of the study area is good, but it also needs to be protected from the source of contamination.

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Role of Anaerobic Digestion for Global Warming Control and Energy Production: A Review

Sairam K. Veerabathini*, Pawan J. Padaki and V.P. Bhange
Department of Biotechnology, Priyadarshini Institute of Engineering and Technology, Nagpur-19, INDIA

Abstract: Anaerobic digestion is a natural biological process, that involves the group of micro-organisms that degrade organic waste matter under oxygen free conditions to produce biogas. The goal of reducing the usage of landfills, for waste disposal and generation of biogas for electricity can be achieved through Anaerobic Digestion(AD) Technology. Biogas is formed by the activity of anaerobic bacteria. It is composed of about 60 to 70% methane(CH_4), 25 to 40% carbon dioxide(CO_2), and between 0.2 to 0.4% hydrogen sulphide(H_2S). The heating value of biogas is about 60% of natural gas and about 1/4th of propane(C_3H_8). Since, the methane accompanies the major composition of biogas and is one of the primary greenhouse gases associated with global warming and it is a clean and cheap source for energy production. The whole process is carried out in a Anaerobic digester. Anaerobic digester is a kind of bioreactor wherein the organic waste derived from various sources is converted into usable form of energy. It is the need of the hour for a new, clean, revolutionary source of energy which can ease the heavy dependence on fossil fuels which pollute the environment. This review summarizes all the advances of anaerobic digestion and its role in controlling global warming, energy generation for electricity, control parameters of anaerobic digestion, economic feasibility of the technology and its benefits.
Keywords: Anaerobic digestion, Biogas, Global Warming, Energy production, Fossil fuel, Bioreactor.

ISCA-ISC-2012-8EVS-28

E-Waste Hazard : The imminent challenge

Yaduvanshi Mamta Singh
Applied Science Department, Chandigarh Group of Colleges, Mohali, Punjab, INDIA

Abstract: Extensive use of upgraded computer technology and electronic equipments make people dump their old electronic goods hence generate the e-waste. This, in the absence of proper disposal, finds its way to scrap dealers. Many of these electronics items contain valuable elements such as gold, silver, and platinum. Unfortunately, e-waste can also contain potentially harmful substances such as lead, cadmium, and mercury. Regardless of whether its elements are valuable or potentially hazardous, if not handled properly pose a threat to environment and human health. Due to the lack of governmental legislations on e-waste, standards for disposal, proper mechanism for handling these toxic hi-tech products, mostly end up in landfills or partly recycled in a unhygienic conditions and partly thrown into waste streams. Moreover handling and recovery of e-waste can be a costly undertaking thus these considerations have led to intense debate about management of e-waste. Various technical solutions are available but a legal framework, proper collection system, logistics and other services need to be implemented before a technical solution can be applied. Many of these

products can be reused, recycled or revamped in an eco-friendly way. NGOs and Government should adopt a participatory approach in forming the legislation on e-waste management. There is urgent need for E-waste legislation given the fact that almost unregulated management of E-waste is being continued leading to environment and health hazards in the country.

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A Novel Process for Reduction of Color from effluents of Pulp and Paper Industry: Ozonation in Absence and Presence of Catalyst

Tripathy Upendra Prasad[1], Panda Sunakar[1] and Panigrahi Jagadish Chandra[2]
[1]PG Dept of Chemistry, Berhampur University, Berhampur, Ganjam, Odisha-760007, INDIA
[2]Pulp and Paper Research Institute, Jaykaypur, Rayagada, Odisha 765017, INDIA

Abstract: The pulp mill of pulp and paper industry is a water intensive industry, producing large volume of effluents containing different organic and inorganic substances which include residual ionic species, ligneous fragments organic solids etc. The pollutants in the effluent should be removed before its discharge to water sources. One of the novel processes for treating effluent is its oxidation through ozonation, which is a greener way of degrading pollutants. The efficiency of ozone in reducing color, COD (Chemical oxygen demand) and other pollution parameters has been compared with the results of other method under different experimental conditions in presence and absence of catalyst. It is found that 15 minutes ozonation of 500ml Kraft bleach plant post oxygen stage effluent having initial color 2500 P.C.U at a rate of 2.64 gm/hr removes COD by 75.3% and color by 84%. With an increase of ozone dose, the color reduction efficiency enhances sharply. Conducting ozonation of pulp and paper industry effluents in presence of catalytic amount of $FeCl_3$, TiO_2 and Nano-ZnO, the color reduction efficiency gets enhanced significantly. Ozonation of intermediate stage effluents having high color load is more effective for industrial application and re-utilization.
Keywords: Ozonation, Colour, Effluent, COD.

ISCA-ISC-2012-8EVS-30

Adsorption of Metal from Synthetic Wastewater by Plant Material

Vaishnav Vinod, Daga Kailash and Madan Lal
Environ-Industrial Lab., Department of Chemistry, Jainaryan Vyas University, Jodhpur, Rajsthan, INDIA

Abstract: The major objective of this paper was to investigate the removal of Cadmium (II) from synthetic wastewater using poly vinyl alcohol coated activated carbon prepared from leaves of Calotropis Procera (PVAC-CP) an unconventional adsorbent. The dried leaves of calotropis procera plant were used at different adsorbent/metal ion ratios. The influence of pH, contact time, metal concentration, and adsorbent loading weight on the removal process was investigated. Batch adsorption studies were carried out at room temperature. Removal efficiency increased with an increase in contact time before equilibrium is reached. The adsorption data fit well with the Langmuir and Freundlich isotherm models. This research focuses on understanding adsorption process and developing a cost effective technology for treatment of heavy metals-contaminated industrial wastewater. Comprehensive characterization of parameters indicates Calotropis Procera to be a good material for adsorption of Cd (II) to treat wastewaters containing low concentration of the metal.
Keywords: Wastewaters, *Calotropis Procera*, Adsorption isotherms.

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Water Resources, Pollution and Treatment Technologies- Special Emphasize on CECRI Technologies

Vasudevan S.
CSIR - Central Electrochemical Research Institute, Karaikudi–630 006, INDIA

Abstract: The continuous increase in word population as well as phenomenal growth of industries will make enormous demands on global resources and consequently affect the biosphere – the air and water. The global awareness to the growing energy demand, depletion of fossil fuel and alarming rate of environmental pollution had drawn the attention of researchers all over the word the explosive alternate energy system. In this context, it is hopefully expected that the hydrogen energy system, where hydrogen is produced by electrolysis of water, can form the good link between the new energy source and solving environmental pollution. Further the role of electrochemistry on environmental pollution abatement will be broadly discussed. Thus for the removal of pollutants there are few very powerful tools based on electrochemical principal which are: Electrodialysis eg. Desalination of brackish water and waste recovery, Electrocoagulation, electroflotation and electro flocculation eg. removal of fluoride, arsenic, dye from water etc., Cathodic

process eg. recovery of metals from wastes, Anodic process (indirect and direct oxidation) andElectrochemical Advanced Oxidation Processes (EAOP) Low cost *in situ* electrokinetic remediation or reclamation has become the recent trend on waste management of soil and will be discussed briefly. Electrochemical removal of gaseous pollutants like SO_2 , H_2S, CO_2 etc., will be dealt in the paper. New technique like electrochemical ion exchange (EIX) and capacitive deionisation (CDI) have been illustrated from the point of view of pollution abatement.
Keywords: Electrochemical treatment, water contamination, cathodic and anodic process.

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Carbon Sequestration Potential of Teak (*Tectona Grandis*) Plantations in Kerala, India

Sreejesh K.K., Prasanth K.M., Kripa P.K. and Thomas T.P.
Dept. of Soil Science, Kerala Forest Research Institute, Peechi-680653, INDIA

Abstract: Teak (*Tectona grandis*) is the most important forest plantation species and it occupies the major area under forest plantations in Kerala. In addition to its value as an ideal timber, it also plays an important role in storing carbon. The silviculture of teak necessitates felling at regular intervals of 5, 10, 20, 30 and 40 years and final felling at 50 years of age. The present study was carried out to estimate the carbon storage in different compartments of teak in each of these felling periods to arrive at an estimate of its carbon sequestration potential. Carbon content of teak biomass was estimated using CHNS analyser while the total soil organic carbon was determined by wet oxidation method of Snyder and Trofymow (1984). There was slight variation in carbon content between age groups and considerable difference between various parts of the tree. The wood contained around 46%, bark around 32 , branches around 40 and the roots around 45 percent carbon. The soil organic carbon content was found to vary with the age of the plantations and ranged from 50 to 170 tons per hectare. Regression equations were developed that can predict the total tree carbon storage from tree measurements.
Keywords: Teak, carbon sequestration.

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Heavy Metals and its Fractions in Soilso of Koratty Region, Kerala, India

Prasanth K.M., Sreekala P.P., Sandeep S. and Kripa P.K.
Dept. of Soil Science, Kerala Forest Research Institute, Peechi-680653, INDIA

Abstract: Heavy metal pollution of the environment is a universal problem and the soil often forms a repository of these elements. The developmental activities especially industrialization and high input agriculture contribute to accumulation of heavy metals to toxic levels in the soils. An attempt has been made to estimate the accumulation of heavy metals like Iron, Zinc, Copper, Cadmium, Lead, Nickel and Manganese in the soil of Koratty region in central Kerala which has a history of industrialization. The various fractions of these heavy metals namely, exchangeable, reducible, oxidizable and residual fractions were determined to reveal the fate of these metals in the soil. The fractionation was done following the BCR process suggested by European Community Bureau of Reference. Iron seemed to be the easily mobilized element, while Cadmium and Copper were least mobile. The order of mobility in the exchangeable fractions was Fe>Mn>Pb>Ni>Zn>Cu=Cd. In the case of other fractions the order was Fe>Ni>Pb>Mn>Cu>Zn=Cd. The result suggests that among all the fractions, Fe is the most mobile element and Cd the least throughout the soil profile. The degree of contamination factor, enrichment factor, and index of geoaccumulation revealed that Cadmium, Nickel and Lead are pollutants in Koratty region of Kerala.
Keywords: Heavy metal fractions, soil, environment.

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Aquatic Macroinvertebrates as Bioindicators of Stream Water Quality- A Case Study in Koratty, Kerala, India

Kripa P.K., Prasanth K.M., Sreejesh K.K. and Thomas T.P.
Dept. of Soil Science, Kerala Forest Research Institute, Peechi-680653, INDIA

Abstract: The paper discusses the results of an attempt to test the suitability of aquatic macroinvertebrates as bioindicators of stream water quality in a natural water course locally referred as Koratty chaal, that runs through the length of agricultural lands in Koratty region. Rapid bioassessment protocol recommended by Environmental Protection Agency (EPA) was followed utilizing Kicknet and D'net of 500µm mesh size to sample the macroinvertebrates. Family Biotic Index (FBI) calculated using the tolerance value of different taxa showed that there was remarkable variation in water quality along the stream. FBI values were around 4.1-5.0 in upstream reaches indicating good water quality. Deterioration of water

quality downstream was evidenced in the FBI value of 5.3-5.5 in the mid reaches and 6.0-6.5 in the lower reaches. These values were also found to be in conformity with the water quailty as assessed at the biomonitoring sites. It is thus concluded that biomonitoring is feasible in such streams in the region to obtain a quick assessment of water quality.

Keywords: Aquatic macroinvertebrates, bioindicators, stream water quality.

ISCA-ISC-2012-8EVS-35

Taxonomic Studies of Water Reservior of Bhatana, Aurangabad District Maharashtra, India

Bawane Vasant[1], Jadhav Mangesh[1], More B.R.[2] and Chandenshive A.T.[2]
[1]Jeevan Vikas Mahavidyalay, Shivoor, Tq. Vaijapur Dist Aurangabad-431 116, INDIA
[2]Sant Bahinabai college, Shivoor, Tq. Vaijapur Dist Aurangabad-431 116, INDIA

Abstract: Pollution creates many problems in words pollution means the undesirable harmful change in physical, chemical and biological characteristics of environment which adversely affects the life of organisms and there are various types of pollution among them water pollution is the major pollution.Water is essential for the life but contaminated water causes various serious diseases in human being water is get polluted by the presence of biotic factors like bacteria, protozoans, helminthes eggs, rotifers and arthropods.The present work is related to the biotic factors of water reservoirs at Bhatana near Aurangabad it is largest rainfed water reservoirs with rocky cum sandy surrounding on one side and fields on other side, these reservoirs is with a capacity of 5.7 meter ft. the water is useful for bathing, washing, drinking of domesticated animals and also for irrigation hence it is polluted, the taxonomic studies of reservoirs deals with the identification of recorded protozoans.

Keywords: Pollution, taxonomy, Environment, water reservoir, Bhatana and near Aurangabad

ISCA-ISC-2012-8EVS-36

Determination of Activation Energy from Pyrolysis of Paper Cup Waste Using Thermogravimetric Analysis

Singh R.K.*, Biswal Bijayani and Kumar Sachin
Department of Chemical Engineering, National Institute of Technology, Rourkela-769008 INDIA

Abstract: Paper cups waste represents a valuable source of energy. Therefore, it is studied to determine the quantity of energy obtained from waste of known amount and composition. For a waste to become an energy system, the kinetic parameter of waste is one of the important characteristics that determine the energy obtainable from wastes. TGA has frequently been employed in the kinetic study of the thermal degradation of cellulosic materials. In this work, we have studied the thermo gravimetric analysis of paper cup waste at 25 °C/min, 30 °C/min in the air and 30 °C/min in the nitrogen atmosphere and determine the activation energy by using thermogravimetric curves. The Activation energy increases from 17 KJ/mol to 28 KJ/mol with increasing heating rate from 25 °C/min to 30 °C/min in the air atmosphere. Activation energy is less 22 KJ/mol in nitrogen atmosphere as compared to 28 KJ/mol in air atmosphere at a heating rate of 30°C/min.

Keywords: Activation energy, paper cup waste, reaction kinetics, thermogravimetric analysis.

ISCA-ISC-2012-8EVS-37

Evaluation of the Range of Heavy Metal Concerntration and its levels of Accumulation in the Fish Sample of River Savitri at Mahad-Midc, MS, India

Chavan Nilesh S.[1] and Jawale ChetanS.[2]
[1]Department of Zoology, G.E. Society's, Art's, Commerce and Science College, Shriwardhan, Dist. Raigad, MS, INDIA
[2]PG Department of Zoology, G.E. Society's, HPT Arts and RYK Science College, Nasik-5 MS, INDIA

Abstract: The use and dispersion of heavy metals has increased vastly during the 20th century and the behavior of metals in the aquatic environment is therefore a matter of rising concern. Metals like all elements are not biodegradable and it can be transformed from one chemical state to another state.The effect of heavy metals pollution & accumulation of heavy metals in the Fishes have been studied with the view to check its ill effects. Sampling method was used for the study. The Water samples of River Savitri, (Taluka-Mahad, District-Raigad, M.S.) were collected from pre-defined 11 sampling points, upstream & downstream. including Mahad MIDC region to check the range of metal pollutants. One of the sampling sites was selected in upstream region, far away from Mahad MIDC to check the existence of metal pollutants in the river water before its flow through Mahad MIDC area. The site where maximum concentration of all the pollutants was observed was considered as Potent site. 11 sites studied under the sample survey. The sampling site number 9 (Mahad MIDC) shows excessive range of heavy metals compared to other upstream site number 8 & further still lesser

at site number 10 in the downstream area of river Savitri. Rest of the sites, under study show the upward stream area where heavy metal range is either within tolerable range or not detected. This shows that Mahad MIDC site number 9 is the Potent site for heavy metal contamination. Water samples in triplicates were collected from Potent site every month during study to heavy metals concentration. However fish samples were tested during July, January & March to check the accumulation level of heavy metals in different seasons.During the Monsoon season i.e. July to September, the heavy metals range are above normal range when compared with Standards.. The analytical study shows that the presence of heavy metals concentration are more in the month of July & further decreasing in the month of September indicating that the untreated industrial effluents are released directly in the River water or even after treatment of industrial effluents at CEPT plant, there exist elevated range of heavy metals in river water. & this itself suggest that there is some problem with the CEPT plant functioning. Fish samples were collected during three different seasons to check the concentration of heavy metals. The analysis have shown that fish samples also have heavy metal range above normal range. Heavy metals like Zinc, Iron are essential, even Fluoride is equally important, but analyses have shown that all these elements have accumulated in the fish body indicating a chance that the accumulated heavy metals can easily enter the Food chain.The results have been discussed in the Research Project.
Keywords : Water quality, Heavy metal pollution, Bioaccumulation.

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Biodiversity Conservation Through Sacred Groves (SGs): A Case Study of Hadoti Region, India

Shrivastava Neerja[1] and Jain Shuchita[2]
[1]Govt.P.G College, Kota, Rajasthan, INDIA
[2]Govt. J.D.B.Girls College, Kota, Rajasthan, INDIA

Abstract: A sacred grove is a grove of trees of great religious importance to a particular culture and preserved for centuries in the name of God . In India, sacred groves are scattered almost every part of country, The concept of sacred groves is present in Hindu mythology from beginning. Normally local villagers are responsible to protect such groves. Each grove is associated with a presiding deity, and the grove are referred to by different names in different parts of India. They were maintained by local communities with hunting and logging strictly prohibited within these patches. While most of these sacred groves are associated with local Hindu gods..Around 14,100 sacred groves have been reported from all over India, which act as reservoirs of rare fauna, and more often rare flora, amid rural and even urban settings. Hadoti region of India is situated in South part of Rajasthan state .It has very good floristic diversity but during last decades this part of Rajasthan has lost various plant species Experts believe that this is due loss of sacred groves. Threats to the groves include urbanization, over-exploitation of resources, and environmental destruction from Hindu religious practices. In the light of theses fact it is realized that theses sacred groves plays an important role in conservation of environment ,so there is urgent need to protect our ancient concept of biodiversity conservation that is -Sacred Groves(SGs).Present paper deals with sacred groves which are situated in and around Kota district of hadoti region . Ethno-medicinal flora of theses sacred groves were also recorded .The data were collected through frequent visits of study area. Ann interviews were also arranged with local people for collection of information. The collected data will be presented in tabular form with statistical analysis.
Keywords: Sacred grove, Conservation, biodiversity.

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Hydro Electric Energy: Indian Scenario

Sandilya A.M., Tiwari H.L. and Suresh S.
Maulana Azad National Institute of Technology, Bhopal, MP, INDIA

Abstract: Water power has been exploited by man from quite early times. All the new energy sources under development are mainly through electricity generation, it seems likely that world will be move increasingly to an electricity based energy regime. To make an effective contribution to new energy supply sources, hydro power could be exploited by the development of small generating units to meet local community needs. The hydro power generation is highly capital-intensive mode of electricity very little recurring cost and no high long term expenditure. It's cheaper as compared to electricity generated from coal & gas fired plants and also reduces the financial losses due to frequency fluctuation and pollution free source.This paper give overview of Indian scenario in hydro electric energy with a brief account of some of the problems encountered in hydro electric, particularly technological upgradation.
Keywords: Energy sources, Electricity, Renewable energy, Hydropower.

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Artificial Neural Network Modelling of Shyamala Water works, Bhopal, M.P. India: A Green Approach towards the Optimization of Water Treatment Process

Shrivastava Kriti and Joshi Smita
Sarojini Naidu Govt. Girls P.G. College, Bhopal, MP, INDIA

Abstract: The water industry is striving hard to produce higher quality water at a lower cost due to increased regulatory standards. Municipal Water Treatment Plants can be considered as the industries producing potable water. They also produce huge amount of sludge after coagulation sedimentation in the clarri- flocculator unit which is a type of waste effluent containing large amount of aluminium & organic contaminants. Commonly it is discharged into surface water without proper treatment and hence causes water pollution. Aluminium salts extensively used for coagulation has been implicated in dialysis dementia, Parkinson and Alzheimer's disease in Humans and also known to cause structural and functional problems in fishes, birds and animals. The present research work emphasizes to develop a green eco-friendly, clean and cost effective water treatment process to avoid the water pollution by non- judicious use of coagulant. Artificial Neural Network (ANN) technique is applied to the prediction of optimum coagulant dosing in Shyamala Water Treatment Plant, Bhopal. The alum sludge generated can be recycled and reused for waste water treatment.
Keywords: Water Treatment Plant, Coagulation, Alum Sludge, ANN Model.

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Removal of Malachite Green from Water Using Magnetic Adsorbent composed of Nano Iron Oxide and Alginate Beads

Soni Anjali and Tiwari Alka
Govt. V.Y.T. PG Autonomous College, Durg, C.G. 491001, INDIA

Abstract: The adsorption of malachite green dye onto magnetic adsorbent was carried out and various factors were studied for optimum removal of this dye. The effects of different reaction parameters such as initial concentration, contact time, temperature and pH were investigated. The uptake of Malachite green was found to increase with increasing initial concentration, contact time and temperature up to a certain level and then observed to decrease. The adsorption equilibrium data were best represented by the freundlich model. The adsorbent was characterized by SEM, XRD and FTIR analysis.
Keywords: Adsorption isotherm, Malachite Green, Magnetic adsorbent.

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Adsorption of Cadmium Ions onto Nano Iron Oxide Loaded Chitosan Microspheres

Dhiwar Chanchanl and Tiwari Alka
Deparment of Chemiatry, Govt. V.Y.T. PG. Autonomous College, Durg CG 491001, INDIA

Abstract: This study describes the batch adsorption process for the removal of cadmium ions from aqueous solution using nano iron oxide loaded chitosan microspheres. The adsorption data were applied to Langmuir and Freundlich isotherm equations. In the batch mode experiments the influence of pH, temperature, time, presence of salts and chemical composition were studied. The maximum adsorption of cadmium ions was observed at 4.0 pH for 20 $mgdm^{-3}$ initial metal ion concentration.
Keywords: Iron oxide, adsorption, chitosan.

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Non-isothermal Kinetic Study of Waste High-Density Polyethylene Pyrolysis using Thermogravimetric Analysis

Kumar Sachin and Singh R.K.
Department of Chemical Engineering, National Institute of Technology, Rourkela-769008 INDIA

Abstract: Thermal behavior of plastic materials can be improved by knowing thermal degradation kinetics for the optimal design and operation of pyrolysis process. In the present study, thermogravimetric analysis has been used for the non-isothermal kinetic study of waste high-density polyethylene pyrolysis under nitrogen atmosphere at different heating rates 10, 20 and 40°C/min. The kinetic parameters, activation energy and pre-exponential factor of waste HDPE pyrolysis were determined by the integral method. A first order degradation reaction was assumed, the activation energy values of

waste HDPE have been calculated as 207.43, 268.22 and 473.05 kJ/mol at 10, 20 and 40 °C/min heating rates respectively. It was observed that when the heating rate increases, the activation energy and degradation temperature of the waste HDPE also increases.

Keywords: Thermogravimetric analysis, activation energy, waste HDPE, reaction kinetics.

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Optimization Study on Removal of Hexavalent Chromium From Aqueous Solutions Using Sal Sawdust

Kumari Preeti[1] and Saha Papita Das[2]
[1]Department of Earth and Environmental Studies, National Institute of Technology-Durgapur, INDIA
[2]Department of Biotechnology, National Institute of Technology-Durgapur, INDIA

Abstract: Hexavalent chromium is extensively used in various metallurgical, chemical and leather tanning industries due to its various physico-chemical properties. It is considered to be potentially carcinogenic and mutagenic agent. Therefore, removal of chromium from wastewater before disposal is crucial for environmental protection and human health. The present work deals with the investigation of combined effect of different operating parameters like adsorbent dose, initial Cr (VI) ions concentration and pH on the removal of Cr (VI) ions from aqueous solution using Sal Sawdust which is environment friendly and easily available. Optimization of the chromium removal was studied using Response surface methodology (RSM). The main aim of optimization was to improve adsorption condition (i.e., minimum adsorbent dose and increased initial concentration of Cr (VI) ions) in batch process. It was observed that 98% of chromium was removed using Sal sawdust at optimum condition.

Keywords: Chromium, Sawdust, Optimization, Response Surface Methodology (RSM).

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Black Carbon Pollution: Effects and Mitigation

Devi Anuradha
The H.R.H Prince of Wales Institute of Engineering and Technology Jorhat, Assam, INDIA

Abstract: Black Carbon Pollution has been a major problem not only to human health but also to the entire global warming and climate change. Black Carbon is the result of incomplete combustion of fossil fuel and wood and is emitted as particles into the air. Its main sources are diesel vehicles and burning of biomass. Black Carbon absorbs sunlight and increases air temperature. When it falls on snow, changes the albedo of the surface. It can also darken snow and ice when falls on it, increases absorption of sunlight and accelerates the melting of ice and snow. However it has a short life time, only a number of days or weeks. So benefits from reducing black carbon emission will be rapidly noticeable. A recent study shows the effect of black carbon pollution in my native state Assam due to traffic congestion and rapid urbanization. Stopping burning biomass for cooking and heating and cleaning up diesel engine, black carbon can be removed from the atmosphere, which reduces its effect on health, premature death as well as help to mitigate climate change.

Keywords: Black Carbon, Climate Change, Health Effect, Black Carbon Pollution in Assam, Mitigation.

ISCA-ISC-2012-8EVS-46

Production of Neem Oil Methyl Ester (NOME) from Oscillatory Baffled Reactor

Ganvir V.N., Ramning Amol M. and Dhote Priya S.
Department of Petroleum Refining and Petrochemical Technology, Laxminarayan Institute of Technology, Nagpur, MH, INDIA

Abstract: The depleting petroleum reservoir, concern for environment or climate leads to many researches to search for renewable alternative source of energy. These renewable sources of energy include solar energy, Tidal energy, wind energy, Hydropower, Biomass and Biofuels. Among the different possible renewable sources one such alternative is produced by transesterification of vegetable oil with methanol in presence of catalyst (alkali and acid) in Convensional Batch Reactor. In our study the preparation of Neem Oil Methyl Ester (NOME) were carried out by varying different parameters like oil/alcohol molar ratio, reaction time, concentration of acid and base catalysts. Fatty Acid Methyl Ester produced by using Oscillatory Baffled Reactor 1-2% H_2SO_4, 1:9 oil/alcohol ratio, 10-15min reaction time, 25-30ºC temperature.

Keywords: Transesterification, Biodiesel, Neem Oil, Methanol, Oscillatory Baffled Reactor

ISCA-ISC-2012-8EVS-47

Cerium Hydroxylamine (Ce-HA), As a Novel Hybrid Material, Kinetic and batch Studies towards efficient Removal of Trivalent Arsenic from Water

Mandal Sandip, Patel R.K.
Department of Chemistry, National Institute of Technology, Rourkela, INDIA

Abstract: Novel materials are of concern because of easy approachability and wide properties with extensive benefits. In this work cerium hydroxylamine (Ce-HA) as a novel hybrid material was synthesised and used for the application towards water treatment. In this present study arsenic as water contaminant was taken and its removal studies were done. Arsenic is a carcinogenetic toxic material to human health. According to WHO and CPCB, India the maximum permissible limit of arsenic (III) towards drinking water is 0.1 mg/L and 0.5 mg/L respectively. Adsorption is the promising method, which is used for the removal of arsenic (III) in the present work. Batch studies and column studies are done to optimize the process. Various analytical instruments like TEM, XPS, XRD, FTIR, AAS, SEM and EDAX respectively, are used for characterization of Ce-HA novel hybrid material. After optimizing all the parameters, the maximum removal of arsenic (III) was found to be 95%. These studies report the result of an extensive investigation pertaining to arsenic removal and properties of a novel hybrid material and produce quality drinking water.
Keywords: Arsenic removal, Novel hybrid material, adsorption, AAS, XRD.

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Studies on Degradation of Synthetic Polymer Nylon 6 and Bylon 66 by *Pseudomonas aeruginosa* NCIM 2242

Chonde Sonal G., Chonde Sachin G. and Raut P.D.
Department of Environmental Science, Shivaji University Kolhapur, INDIA

Abstract: Polymer is a chemical which is characterized by having extremely long molecules. This tends to give polymers useful properties such as flexibility and elasticity. Nylon is a generic designation for a family of synthetic polymers known generically as polyamides. It is a polymer having amide group. Present study has examined the feasibility of a bacteria Pseudomonas *aeruginosa* NCIM 2242 for actively degrading synthetic polymer Nylon 6 and Nylon 6, 6. For present experiment Nylon 6 and Nylon 6, 6 was the sole source of nitrogen in the medium. The analysis was carried out using I. R. spectroscopy and mechanical techniques. Nylon sheets were inserted in fermentation broth which was incubated on a rotary shaker at 30°C and 90 rpm for 6 month duration. Substantial degradation of Nylon 6 and Nylon 66 was observed as the bacteria utilize nitrogen source from polymer. Weakening and breaking of polyamide bond have been confirmed by weakening in I. R. band. The degradation led to formation of new functional groups CH3, CHO and COOH. It was observed that Nylon 66 having more degradation than nylon 6.
Keywords: Nylon 6 degradation, *Pseudomonas aeruginosa* , Plastic waste management.

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Adsorptive Removal of Fe(III) from Aqueous Phase by using Activated Spent Tea Leaf

Reza Ruhul Amin, Sil Asim K. and Ahmaruzzaman M.
National Institute of Technology Silchar, Assam- 788010, INDIA

Abstract: The present investigation describes the evaluation of feasibility of spent tea leaf (STL) towards adsorptive removal of Fe (III) from aqueous phase. STL was prepared through chemical activation process using sodium hydroxide as an activating agent. The adsorbent was characterized with proximate analysis (moisture content, volatile matter, ash content and fixed carbon), SEM (surface morphology study) and also by FTIR spectra (functional groups analysis). The prepared adsorbent showed low ash content of 2.29%, fixed carbon of 58.26%, presence of -OH/-NH functional groups and high roughness of the surface morphology indicating a good removal capacity for Fe (III) from aqueous phase. Batch studies were conducted by considering the various parameters like adsorbent dose, contact time, temperature (298, 308, and 318K), and pH (2-5). Under optimum condition of variables (adsorbent dose 4g/L, contact time 4h, temperature 308K and pH 4) maximum adsorption capacity of the adsorbent was found to be 117mg/g. The equilibrium data were modelled by both Freundlich and Langmuir Isotherm. Equilibrium adsorption data were consistent with Langmuir Isotherm model having regression coefficient equal to 0.993 for uptake of Fe (III) by spent tea leaf. The experimental results indicate that STL can be employed as a low cost alternative in the removal of Fe (III) from water and waste water.
Keywords: Fe (III) Adsorption, NaoH treatment , Batch studies, Freundlich, Langmuir isotherms.

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BTEX Biodegradation in Soil-water System Having Different Substrate Concentrations

Gupta Pankaj Kumar[1], Ranjan Shashi[1] and Yadav B.K.[2]
[1]Department of Environmental Science, Central University of Rajasthan, INDIA
[2]Department Of Civil Engineering, Indian Institute of Technology Delhi, INDIA

Abstract: BTEX are aromatic compounds and can be a major pollution problem in the ground water. The BTEX group of chemical contaminants consists of benzene, toluene, ethyl benzene and three isomers of xylene and they make up a significant percentage of petroleum hydrocarbon. These compounds have a very high pollution potential, because of their high concentration in gasoline, relatively high solubility in water and chronic toxicity. These have harmful effects on human health and need to be removed. However they get bio-degraded with time by microorganisms. The natural bioremediation process is quite slow. The objective of this study was to find out the degradation kinetics of Toluene in soil-water system at different initial concentration of toluene. The experiment was done with batches of different concentration of toluene at room temperature; the batches contain 50% contaminated ground water which is collected from oil refinery near Panipath, 50% wastewater and 10 gram soil. Then the air phase samples were analysed on GC to find the degradation. Rate of biodegradation shows the Linear or first order kinetic upto 100 ppm and after that it follows Monod's Kinetics. ìmax (maximum utilization of substrate) and Ks (Half saturation coefficient) were calculated. Value of ìmax was approximately 7 and thus Ks were 3.5 which are half of the ìmax. These values were used to calculate specific growth rates (ì) at higher toluene concentrations. The slop -dt/dc is calculated and it shows an increase with increasing initial substrate concentrations upto 100ppm after that it shows declination in degradation rate.
Keyword: BTEX, Bioremediation, Biodegradation rate, Monod's Kinetics, Linear Kinetic.

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Secondary Effluent Polishing in Common Effluent Treatment Plant by Oxidation, Case Study at Vapi, Gujarat, India

Jain A. and Khambete A.
CED, SVNIT, Surat, Gujarat, INDIA

Abstract: Presently majority of the Common Effluent Treatment Plants (CETPs) in India are discharging the treated wastewater effluent well above the Central pollution control board discharging norms. Secondary effluent polishing for CETPs wastewater is for the betterment of environment as the secondary effluent in majority of CETPs contains high COD well above discharging norms. In this case study the secondary effluent at CETP, Vapi was independently oxidized with two aqueous oxidants i.e. Sodium Hypochlorite and Calcium Hypochlorite at different concentration and reaction duration and also the combination of both the oxidants is also tested at different concentration and reaction duration. The Combination of both the oxidants was potentially suitable oxidants as it reduces COD up to 62.50%.
Keywords: Common Effluent treatment plant, Secondary effluent, Sodium hypochlorite, Calcium hypochlorite, Oxidation.

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Determination of Water Quality Index with Different Methods for Mindhola River in Gujarat, India

Shah Abhishek, Kapoor Shivam and Khambete A.K.
CED, SVNIT, Surat, INDIA

Abstract: Quality of water gets deteriorated due to urbanization and industrialization across the water body. When a small river like Mindhola has to support some amount of wastewater within its basin it is very difficult to get pure water by self cleansing capacity. Six different locations on Mindhola River had been selected for the collection of samples. Samples were collected for two different seasons. Every sample was tested for eight important parameters like pH, Turbidity, TS, DO, BOD, Total Phosphate, Nitrate and Fecal Coliform. Water Quality Index was determined with the help of three different methods for six locations. The selected methods were USNSF, CCME and Weighted Arithmetic Index method. Quality of water in Mindhola River was good at upstream near Vyara and Bajipura which gets deteriorated near Sachin and Kansad. USNSF method label only the quality of water where the objective (bathing standard etc.) was not focused.

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Environmental Impact of Industrial Effluent in Vaigai River and the Ground Water in and around the River at Anaipatti of Dindigul District, India

Jesu A.[1], L. Prabu Doss Kumar[1], J. Ram Kumar[1], K. Kandasamy[1], M.V. Sooryakumari[2] and M.S. Deenadayalan[1]
[1]PG. and Research Department of Chemistry G.T.N Arts College, Dindigul, TN, INDIA
[2]RVS College of Education, Dindigul, TN, INDIA

Abstract: Environmental includes water , air, land and the inter-relationship which exists among water, air, land and human being, other living creatures, plants, micro organism and property. Environmental pollutant means any solid, liquid or gaseous substance presentation in concentration as may be injurious to environment. Environmental pollution means the presence in the environment of any environment pollutant. Hazardous substance means any substance or preparation which by reason of its physico-chemical properties or handling is liable to cause harm to human beings, other living creatures, plants, micro-organism, property or the environment. The problem of pollution of rivers and streams has assumed considerable importance and urgency to urbanization. It is therefore essential to ensure that the domestic sewage water is not to be allowed to discharge in to the water courses without adequate treatment. As such discharges would render the water unsuitable as source of drinking water as well as for supporting fish life and also for use in irrigation. Pollution of rivers and streams also causes increasing damage to the country's economy. An attempt has been made to study the impact of untreated sewage in the river located nilakkottai in Dindigul. In fact the sanitary waste water comprises about 99.9% of water along with micro-organism. Once the river water was used for bathing, washing and also for agricultural purpose, but at present the water has become the place of collection of sewage water along with industrial effluent. In order to evaluate the physical, chemical parameters, the water samples from the river and also from the well and from bore well were collected from the residence located in and around the river and also on the banks of the vaigai river. On any account the sewage water should not be discharged in to the river water, which causes river water pollution and ground water pollution. In long run the water becomes un fit for domestic and human consumption. The physico, chemical analysis of water in the river as well as the ground water sources around the river reveals that there is high turbidity, high TDS shows that the water cannot be used for drinking purposes. The electrical conductivity, the total hardness, the high chloride value in the ground water sources indicates that the water cannot be used for human consumption. The safest way for the residence is to abandon the river water sources in order to escape from the water borne diseases caused by the use of polluted river water.

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Assessment of Heat Stress on the Workers in Reheating Furnace of Merchant Mill

Madhurima Pandey and Satyendra kumar Dewangan
Department of Applied Chemistry, A.I.C.T.E. affliated, Bhilai Institute of Technology, Durg, 491001, Chhattisgarh, INDIA

Abstract: The objective of the present paper is the evaluation of *"Heat Stress"* generated by the Heat Transfer process of *"Reheating Furnace"* "of *Merchant Mill, Bhilai Steel Plant.* The *"Heat Stress"* was measured at different locations of the Reheating Furnace by instrument *"W.B.G.T. Heat Stress Monitor"*. The measured values of W.B.G.T. in different seasons were analyzed by the *student "t" test.* The student *"t"* test reveals that the heat stress is highly significant ($p<0.001$) in summer season and significant in other season. The values were compared with permissible range as per *Factory Act 1948 & O.H.S.* The average Air Velocity and Relative Humidity in work area was measured and found to be 0.77 m/sec (TLV 0.50 m/sec) and 43% to 54%. (45% normal value) respectively. It was concluded that Heat Stress of the Reheating Furnace (m*ean W.B.G.T. – 31.6^{0}C > TLV 26.7^{0}C)* affect the working efficiency of employees and the heat load varies as per season and ambient temperature. On the basis of this study some engineering control measures have been suggested in ***"Shop Floor"*** of Reheating Furnace area which is in the process of implementation.

Keywords: Reheating Furnace, Heat Stress, W.B.G.T. Heat Stress Monitor, *Control* Measures.

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Time for Green Technologies with Respect to Buildings

Ojha N.K. and Sarika
Construction Division, The Maharaja Sayajirao University of Baroda, Vadodara, Gujrat, INDIA

Abstract: A green Building is one that is ideally constructed with a smart design, and requires minimal maintenance. The overall harm to the environment is at a minimum and the residents remain healthy. The demand for houses, shopping malls, hotels, commercial complexes, Institutional buildings etc. are on the rise. An emerging alternative is to go green in buildings too. The benefits of green building are many. They help save energy, conserve water, better Indoor environmental quality and recycle waste. Green buildings are not new. There is a millennia-old reservoir of knowledge that can help reduce energy consumption in buildings today. Ancient spiritual thought integrates humans with the cosmos, presenting an understanding that the processes of the cosmos are directly related to human existence. With this understanding, ancient civilization has always respected its environment. Typical principles include climate-responsive design, use of local and sustainable materials, water harvesting, etc. Climate-responsive architectural design is especially sophisticated, with thousands of years of refinement. Architectural elements like courtyards, clusters, wind towers, roof terraces and jaalis (stone lattices), among others, are used for effective climate control and have become social and cultural elements. The challenge is to reconcile these ancient methods with modern technological innovations. The result is a simple eco friendly buildings where one possibly have the best form of natural light and fresh air, all the while recycling and reusing wastes for maximum benefit. Such technology will reduce our dependence on external sources of energy and water - indeed, the best way to reduce the impact of global warming. We have begun using green principles like water harvesting and waste management in projects. It emphasize the use of eco friendly building materials like fly-ash cement and blocks, steel and tiles, recycled aluminum, bamboo based products, green roofing products and so on. On the technology front too, there are a lot of options available to build green buildings. Energy saving air conditioners, high performance glass windows, water saving solutions, composting toilets, and efficient building management systems are just some of them. Tapping solar energy is another method used by green building. The use of a photovoltaic array on the rooftop is a good source of alternate energy as are solar thermal arrays. This way energy can be obtained from the environment, stored and used as required. A combination of innovative green ideas and high technology may be able to address energy and water needs. The study is emphasized on numerous ways and means to have sustainable development. It varies from place to place and given site condition.

Keywords: Sustainable development, water efficiency, energy efficiency, indoor environmental quality minimum indoor air quality performance, thermal comfort design & verification, daylighting Innovation in design process vastu principles, biodynamic farming, three tier cooling system, zero discharge, geo thermal cooling, wind towers bio-fence, thermal fence, green walls, hydroponics, regional priority.

ISCA-ISC-2012-8EVS-56

Quantifying the Cement Air Pollution Related Human Health Diseases in Maihar city, MP, India

Rai Priyanka, Mishra R.M. and Parihar Sarita
School of Environmental Biology, A.P.S. University, Rewa, MP, INDIA

Abstract: This paper present air pollutants (Suspended particulate matter, Sulphur dioxide and Oxide of nitrogen) emitted from Maihar cement plant and they may produce harmful effects on human health and his environment. This study was undertaken to investigate the quality of air in Maihar. Cement air pollution is rapidly becoming an environmental problem of public concern worldwide. It can influence public health and local or regional weather and climate. All the data were collected for a study period at five different locations (Bus stand, Labours colony, Maihar cement colony, Railway colony and Rewa road). In the present study at Maihar city, Primary pollutants such as SO_2 and NO_X were found within the standard value and SPM exceeding the standard value prescribed for residential and rural uses by CPCB, New Delhi. Maximum concentration of Suspended particulate matter, Sulphur dioxide and Oxide of nitrogen is found during winter months, moderate during summer and minimum during monsoon months indicate marked seasonal variation of pollutants under present investigation. Present study determines association between cement air pollution on one hand and occurrence of human health diseases on other hand. A questionnaire based survey was conducted to collect the data for incidence of air pollution linked diseases among the people of sampling sites. Result determine the maximum incidence of respiratory diseases (such as tuberculosis, bronchitis, cough, asthma etc.) compare to other diseases among the affected people.

Keywords: Ambient air pollution, human health diseases, Maihar cement plant, Maihar.

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Cellulose Crystallinity Change Assessment of Biochar Produced by Pyrolysis of Coir Pith

Rojith G. and Bright Singh I.S.
School of Environmental Studies, Cochin University of Science and Technology, Cochin, Kerala, INDIA

Abstract: Biochar production from biomass is a globally adopted strategy for carbon sequestration and also for integrated agricultural applications. In the present study biochar was produced at 600ºC by slow pyrolysis of lignocellulosic agro industrial residue coir pith. Chemical and structural transformation of coir pith happened due to pyrolysis process. Changes in cellulose crystallinity was analysed by XRD and FTIR method. XRD analysis indicates cellulose crystallinity index change. FTIR analysis shows several characteristic peak changes indicating structural transformations of cellulosic components.
Keywords: Coir pith, Biochar, Cellulose crystallinity, XRD, FTIR

ISCA-ISC-2012-8EVS-59

Reed Bed Technology: An Economical Treatment for Waste-Waster

Papalkar Mayur S., Tiwari Kartikey, Jha Shivendra Kumar and Khambete Anjali K.
Department of Civil Engineering, SVNIT, Surat, Gujarat, INDIA

Abstract: Reed-bed systems are a second stage treatment for onsite wastewater systems mostly for grey-water systems. The reed bed system is also economically viable. Materials required for this system can be obtained locally, with no requirement to import any special products. The proposal to implement the project on a small scale, school by school, means that the project will be economically manageable. The reed bed system consists of reed beds designed in such a manner that they are able to filter out grey water (i.e. water used in washing, bathing and other domestic processes) and black water. (i.e. water with human waste). The paper presents a 6 months performance of a pilot Reed Bed System, wherein studies it was observed that ammoniacal nitrogen (NH_3-N) reduction was found 90 mg/l to 35 mg/l. In developing countries, it is essential to adopt cost efficient technology to treat the sewage wastewater with ease & high performance.
Keywords: Reed Bed, sewage wastewater, reeds, environmentally viable, ammoniacal nitrogen removal.

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Investigation of Seasonal fluctuation in Different Parameters Contents of Domestic Wastes Effluents

Gupta Pallavi[1], Tanwar Rajkumar Singh[2], Dixit Savita[3], Jain Praveen[4]
[1,3]MANIT BHOPAL, MP, INDIA
[2]MVM College Bhopal, MP, INDIA
[4]M.P. Bhoj (Open University) Bhopal, INDIA

Abstract: Domestic waste contains inorganic and organic compounds which inflict the deterioration of the water quality. Domestic effluents endanger the aquatic environment and flora and fauna. Domestic waste contains toxic and hazardous compounds. When partially treated or untreated effluent discharges into water reservoir the toxic compounds comes in water sources which are undesirable because these have poisonous characters and create aesthetic problems. In upper lake at Bhopal, various domestic wastes are discharged. Effluents of the domestic waste are responsible for increasing the pollution load on water reservoir. If the present situation continues result may be harmful and dangerous. The effluents of sewage have been analyzed to observe the effect on water quality. During the whole study span it is found that maximum parameters are found in excess than permissible limits of BIS and APHA rules.

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Evaluation of Ground Water Quality in Borigaon Area, Maharashtra, India

Gogari P.K., Save S.N. and Chaudhari V.S.
N.B.Mehta Science College, Bordi, Tal-Dahanu, Dist-Thane, Maharashtra, Pin-401701, INDIA

Abstract: The study area Borigaon is situated near the western coast of India at the Maharashtra Gujrat border. The area is famous for its horticultural development for Chikoo (Sapote). The present study deals with the evaluation of ground water quality for irrigation in Borigaon area. The ground water samples were collected from 26 sites during premonsoon and post-monsoon seasons of the year 2008 and were subjected for chemical characteristics. The suitability of water for irrigation is evaluated based on Sodium Adsorption Ratio, Salinity Hazard and US salinity Diagram.
Keywords: Ground Water, Chemical Characters, SAR, Salinity Hazard, USSL Diagram.

ISCA-ISC-2012-8EVS-62

Domestic Waste Water Treatment using Macrophytes the Natural Tool for Improvement of Water

Dhote Sangeeta and Dixit Savita
Maulana Azad National Institute of Technology, Bhopal, INDIA

Abstract: The present era is the era of urbanization. The urbanization along with growth and development has an adverse impact on scarce natural resources, water being one such limited resource need to be dealt with utmost care. In most of the cities, waste water treatment particularly in the informal sector remains unattended. Phyto- remediation is a cost effective natural way of treating the domestic water. The present research is an attempt to identify and use the potential of free-floating plant E. crassipes and the submerged plant Hydrilla Vertcillata in removing the heavy metal and nutrients present in domestic waste water. The technique of treating waste-water using aquatic plants being natural and economic can be used effectively if correlated appropriately with the know capacity of the plants used and also the quantity of pollutants in the effluent.

Keywords: Macrophytes, BOD, Nutrients, Eichhornia crassipes and Hydrilla verticillata.

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Analysis of Physico-Chemical and Heavy Metals from Municipal Waste Water and Its Effieciency Study

Kushwah Ram Kumar[1] and Malik Suman[2]
[1]Dept. of Chem., Millennium Inst. of Tech. and Science, Nathu Barkhera Road, Neelbad, Bhopal, MP, INDIA
[2]Department of Chemistry, Sadhu Vaswani College, Bairagarh, Bhopal, MP, INDIA

Abstract: The present investigation was conducted to monitor the physico-chemical parameters and heavy metals of municipal waste water treatment plant Bhopal, constructed under Bhojwet Land project to control the water pollution. In most common uses, waste water refers to the municipal waste water that contains a broad spectrum of contaminants resulting from the mixing of waste water from different sources such as domestic waste, laundries and small industries. The results reveal that the untreated municipal waste water was high inorganic and organic pollution load. Municipal waste water treatment plant is based on waste stabilization technique using anaerobic and facultative ponds. Municipal waste water samples were collected to determine some physico-chemical parameters like pH, turbidity, chloride, and chemical oxygen demand (COD) and heavy metals Pb, Mn, Cu. In the present study, a significant removal was observed in the physico-chemical parameters and heavy metals after treatment. The maximum reduction turbidity (88.50%), chloride (42.73%), and chemical oxygen demand (76.95%) and heavy metals Pb, Mn, Cu of waste water were recorded in traces after final treatment. Thus the municipal waste water treatment plant had a significant role in the control of water pollution loads of municipal waste water.

Key wards: Waste water, turbidity, chloride, COD, Heavy metals.

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Initial Effect of Different Pretreatment Methods on Energy Recovery from Petha Wastewater by Anaerobic Digestion

Singhal Yogita and Singh Radhika
Department of Chemistry, Faculty of Science, Dayalbagh Educational Institute, Agra, 282110, INDIA

Abstract: Anaerobic digestion of the petha industry wastewater for production of biogas and hydrogen was carried out in 500 ml batch reactor. The pH of the wastewater taken was 14 and the COD was 3,300 mg/L. Suppression of methanogenic activity has been observed by the heat, chemical and pH pretreatment methods. The effect of each factor on the fermentative hydrogen production was monitored. The highest hydrogen production was 60.06% (R5[1]) when the inocula were pretreated at 100^0C. The methane production was high i.e. 46.8% in the reactor when no pretreatment was done. Reduction in the various physical parameters was also studied indicating the degradation in the organic matter.

Keywords: Petha wastewater, pretreatment methods, anaerobic digestion, methanogenic activity.

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Studies on the Generation of Biogas from Collagen Hydrolysate Obtained from Chrome Shavings by Alkaline Hydrolysis: A Greener Disposal Method

Pati A. and Chaudhary R.
School of Energy and Environmental Studies, Takshashila Campus, Devi Ahilya University, Indore, MP, INDIA

Abstract: The leather industry produces a significant amount of chromium bearing hazardous waste. Solid waste disposal is increasingly becoming a huge challenge to tanners due to paucity of landfill sites and strict environmental legislations worldwide. Hence, finding a holistic solution to the tannery solid waste disposal problem is a challenge for researchers. Protein based solid wastes acquire much attention due to its high value. In this work, proteinous matter recovered from chrome shaving through chemical process was feed to the anaerobic digester to generate biogas. Two different modes of alkaline chromed shaving dust hydrolysis i.e. using lime and KOH followed by neutralization with HCl and H_3PO_4 subsequently. The Full scale investigations conducted to evaluate the performance of anaerobic digestion of collagen hydrolysate. The feed and overflow of both digesters were monitored for various parameters such as Total solids %, Ash content %, Volatile Fatty Acids and Chemical Oxygen Demand (COD). COD reduction efficiency 34-46 % and 45-54% was observed in lime-HCl and KOH-H_3PO_4 digesters respectively. Gas generation is increased 30% in KOH-H_3PO_4 digester as compared to Lime-HCl and CO_2 % in KOH- H_3PO_4 digester was in the range of 19-20% as compared to Lime-HCl were it was 30-40%. Hence, it shows that CO_2 produced by the acidogens is effectively utilized by the methanogens in producing methane gas and potassium and phosphates are the macronutrients to the microorganisms.
Keywords: Chrome shavings, Hydrolysis, Collagen hydrolysate, Biogas, Leather processing.

ISCA-ISC-2012-8EVS-66

A Field Study by Bioaugmentation and Biostimulation Method for Degradation of Pyrene (PAHs) by Bacterial Strains Isolated from Petroleum Sludge

Singh Ratan[1], Pokhrel Sabita[2], Gautam Preeti[2] and Das Amarjyoti[2]
[1]Department of Environement and Sustainable Development Central University of Gujarat, Gujarat, INDIA
[2]Dept. of Environmental Microbiology, Babasaheb Bhimrao Ambedkar university (A central university) Lucknow, UP, INDIA

Abstract: Petroleum, being a major source of energy, supports the modern society and serves as a source for serious environmental pollutants leads to contamination of most parts of the Ecosphere.In May 2010, 4200 Jan 2010, 20000 gallons was spilled at port (Arthus, texa, coulf Mexico) In addition to the accidents of oil spillage, there are 20 oil refineries in India producing 28000 tons of sludge every year (Joseph & Joseph 2009). Disposed of Petroleum sludge serious environmental threat.Petroleum contaminated soil contains hydrocarbons mixtures, PAHs are considered as a major environmental threat because of their potential for toxicity, mutagenicity, and carcinogenicity. Due to large holding capacity for pollutant, soil acts as a long term sink and major repository of PHAs in environment (Wild & Jones, 1995). Microbial degradation serves as the major rout for ecological recovery of PAHs-contaminated sites. Bacteria play an important role in the bioremediation of petroleum hydrocarbon contaminated area they utilize a wide range of components within the oils as nutrient sources. Some of them also produce a lipid biosurfactant that increase the uptake rate of sludge by Bacteria. (Liu et al 2010).The use of microbiota for bioremediation of contaminated soil is great interest, as these microorganisms are more adapted to the particular soil environment than non-indigenous commercial microbial inocula.The purpose of microcosmic study was to the degradation of two major PAHs of petroleum sludge i.e. Pyrene (4 aromatic ring) by bioaugmentation of two native petroleum hydrocarbon degrading bacteria isolated from sludge of Barauni oil refinery.Isolated bacterial strains were inoculated to grow on MSM agar with Pyrene as carbon source. Isolated two bacterial strains coded as $BEnS_1$ & $BEnS_2$ were found to be utilizing both PAHs (Pyrene) after biochemical characterization, bacteria was pseudomonas strain and it was also a good biosurfactant producing bacterial strain. Petroleum sludge and its composition-Sludge contain a complex mixture of petroleum hydrocarbons of various molecular weights. Aliphatic compound- Alkanes, Alkenes, Alkynes. Aromatic compounds- (Polyaromatic hydrocarbons) - Nephthalene, Phenanathrene, Anthracene, Pyrene, Chrysene, Tetracene, Pentacene. Many bacterial isolates capable of degrading PAHs have been reported Mycobacterium (Gram positive) which uses pyrene as energy source is. Mycobacterium Spp. Are known to have high cell surface hydrophobicity and adhere to the emulsified solvent droplets. Other PAHs degrading strains isolates include Rhodococcus, Pseudomonas, Sphingomonas paucimobilis. These bacterial strains were found to have high potential to be utilized in the microbial technology for recovery of oil contaminated site.
Keywords: Bioaugmentation, Biostimulation, Consortia, Bioremediation, Biodegradation.

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Ozone Depletion: The Present Scenario

Prakash J., Singh A., Awasthi G., Singh S.N. and Verma R.
Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow Campus, Lucknow, INDIA

Abstract: Now a days, there are various activities done by humans which give significant effects on environment. Ozone depletion or thinning of the ozone layer is one of them and is an environmental issue of serious concern today. The ozone layer is responsible for protecting the earth's surface from ultraviolet radiation from the sun. Its depletion affects humans, plants, the ecosystem and materials. The objective of this article is to review the origin, causes, mechanisms and bio effects of ozone layer depletion as well as the protective measures of this vanishing layer. Xenobiotic compounds like chlorofluorocarbon are the main cause of ozone depletion. When CFCs, coming from various sources such as coolants, aerosols, and fire extinguishers, are released in the environment, they rise into the ozone layer and damage it. Due to the ozone hole, carcinogenic UV rays are coming to the earth surface and hamper the flora and fauna. Photosynthetic activities of plant especially of phytoplanktons are inhibited by the UV rays. It is important to take the necessary precaution to protect one's self. The health risks involved in ozone depletion are very high. With the reduction in ozone depleting substances, the ozone layer is expected to return to normal.
Keywords: Ozone layer depletion, CFC, UV rays.

ISCA-ISC-2012-8EVS-68

Treatment of Anaerobically Biodigested Distillery Effluent through Coagulation

Shukla S.K.[1], Mishra P.K.[2] and Kumari Lata[3]
[1]Center for Environmental Sciences, Central University of Jharkhand, Ranchi, INDIA
[2]Department of Chemical Engineering, IIT (BHU), Varanasi (221005), INDIA
[3]Department of Applied Chemistry, IIT (BHU), Varanasi (221005), INDIA

Abstract: A comparative study for colour removal of anaerobically biodigested distillery effluents (BDE) with four different coagulation agents like aluminium chloride, ferric chloride, potash alum and PAP (mixture of potash alum, aluminium sulphate and polyacrylamide polymer). It was investigated to optimize important coagulation parameters like pH, dose, and temperature. Potash alum is the best among all the three individual coagulants used but required dose of potash alum is more which result into large of solid waste generation. PAP treatment of distillery effluents offered a promising way for colour removal (90.2%) and COD reduction 75.4% obtained at dose 20:1:0.1 (g/L). The filtrate was characterized by FTIR and UV visible spectrophotometer for confirmation of decolourization of anaerobically biodigested distillery effluent (BDE).
Keywords: Anaerobically Biodigested Distillery Effluent, Potash Alum, and Polyacylamide Polymer.

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Water Quality Status of Bakewar (Etawah, India) area with Special Reference to the Health Status of their Local Population

Tripathi Ashish and Verma Rajesh Chandra
Janta College Bakewar, Etawah, INDIA

Abstract: Today the human kind stands at the most crucial juncture of responsibility,on account his continuous activities and the role in enhancing the population of his species there by continuously depleting and degrading the limited biological resourses on one hand and inhibiting the natural environment on the other to sustain its biological productivity of renewable energy and nutritional resources around us. Our aquatic eco-system have gradually turned into the sewer system of varying magnitudes. Not only the fresh water resourses have turned on un-potable to us in their row form, but have also turned highly unhygienic and unproductive to the aquatic life. Aqua environmentalists all over the world have started keeping a close watch on the health of the aquatic ecosystems using a variety of biotechnological tools, which also include the most trusted and simplest techniques of Piscine-clinical-haematology (Joshi, 2005). Blood of vertebrates has occupied a specific status with regard to physiological activities of various other tissues and organs,as it not only reflects the intrinsic metabolic activities going on within the whole organism,their requirements, their products besides acting as a transporter,but also exhibits impact of ambient environmental factors,as immediate or long term influences are also truly and fully reflected by it. And it is this characteristics of the circulating blood with its constituents which help us in the diagnosis of animal health under varying eco-biological and physio-pathological conditions.
Keywords: Natural resourses, eco-system, health, clinical-haematology, physio-pathological conditions.

ISCA-ISC-2012-8EVS-70

Tools for Pollution Control: Phytoremediation

Gupta Sapna[1], Nayak B.P.[2] and Khajuria H.[2]
[1]Shriram Institute for Industrial Research, New Delhi, INDIA
[2]Amity Institute of Forensic Sciences, Amity University, Noida, UP, INDIA

Abstract: Growing population means growing pollution. And, to cope with growing pollutions the scientific society is involved in developing new effective tools. Phytoremediation is one of them. That states "to mitigate environmental pollution by means of plants and other biological systems". Few aquatic plants and some microbes tend to absorb heavy metals (Iron, Chromium, Arsenic, Mercury etc.) from water and thus leaving a lower magnitude of metals in water, thereby minimizing the pollution load.
Keywords: Phytoremediation, Environmental Pollution, Pollution Load.

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Introduction to Fly Ash as Ecofriendly Construction Material

Vairagade V.S.[1] and Kene K.S.[2]
[1]J.L. Chaturvedi College of Engineering, Nagpur, Maharashtra, INDIA
[2]KDK College of Engineering, Nagpur, Maharashtra, INDIA

Abstract: Fly ash is finely divided residue resulting from the combustion of powdered coal and transported by flue gases and collected by electrostatic precipitation. Fly ash is most used pozzolanic material all over the world. The volume of fly ash produced is about 75 million tons per year, the disposal of which has become a major concern. Only about 5% of the total fly ash is utilized in India the remaining of which has to be disposed. Instead of doing so, it can be utilized in a major way. Portland cement (PC) concrete is the most popular and widely used building materials. Due to the restriction of the manufacturing process and the raw materials, some inherent disadvantages of Portland cement are still difficult to overcome. There are two major drawbacks with respect to sustainability. About 1.5 tones of raw Materials is needed in the production of every ton of PC, at the same time, about one ton of carbon dioxide (Co2) is released into the environment during the production. Therefore, the production of PC is extremely resource and energy intensive process. In this discussion it would be interesting to discuss on fly ash from the point of concrete making. This paper deals with detail study of used of fly ash in construction with partial replacement of cement and providing ecofreindly construction material. This paper also deals with the utility and versatility applications of fly ash.
Keywords: Fly ash, Ecofreindly material, Green Building, Partial Replacement of Cement.

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Evaluation of Current Environment Status of *Kottayam Chira*

Rakesh V.B., Adhem Shahin, Amarnath A. and Rojith G.
School of Environmental Studies, Cochin University of Science and Technology, Kochi, Kerala 682 022, INDIA

Abstract : *Kottayam Chira* is a significant water body with a total area of around 12 acres at present. It is believed that the chira encompassed an area of 14 acres and was corroborated from GIS based analysis. It is located about 1.5 km away from Kuthuparamba town of Kannur district, north western part of the Kerala State. The coordinates of the study area 11^0492 N and 75^0332 E. The *Kottayamchira* is environmentally, historically, religious and culturally of no match and is of utmost significance. Additionally it was part of the livelihood of the native population as it acted as reservoir to supply water for irrigation into the adjoining paddy fields and also people were dependent on it for its fish wealth. This significant wetland is now in an environmentally neglected and degraded form mainly due to eutrophication, weed-growth, siltation, etc. Due to excessive siltation it is seen that several stagnant portions have formed in the water body; which may act as a threat zone to yield various water borne disease. This study deals with the estimation of essential water quality parameters of the study area. The various parameters were calibrated and compared with the international standards. The obtained values were matched with WHO and ISO drinking water standards. The study revealed that due to the neglected state of the Chira various parameters are far beyond permissible limits. It is a clear cut example of how anthropogenic over exploitation and negligence can deteriorate a well-established water system.
Keywords: *KottayamChira*, reservoir, eutrophication, water quality parameters.

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Estimation of Effective Impervious Surface area of Cochin using Satellite Images

Chithra S.V., Amarnath A., Smitha S.V. and Harindranathan Nair M.V.
School of Environmental Studies, Cochin University of Science and Technology, Cochin-22, Kerala, INDIA

Abstract: Urbanization refers to the process in which an increasing proportion of a population lives in cities and suburbs. Urbanization fuels the alteration of the Land use/Land cover pattern of the region including increase in built-up area, leading to imperviousness of the ground surface. With increasing urbanization and population pressure, the impervious areas in the cities are increasing fast. An impervious surface refers to an anthropogenically modified surface that prevents water from infiltrating into the soil. Surface imperviousness mapping is important for the studies related to water cycling, water quality, soil erosion, flood water drainage, non-point source pollution, urban heat island effect and urban hydrology. The present study estimates the Total Impervious Area (TIA) of the city of Kochi using high resolution satellite image (LISS IV, 5m. resolution). Additionally the study maps the Effective Impervious Area (EIA) by coupling the capabilities of GIS and Remote Sensing. Land use/land cover map of the study area was prepared from the LISS IV image acquired in the year 2012. The classes were merged to prepare a map showing pervious and impervious area. Supervised Maximum Likelihood Classification (Supervised MLC),which is a simple but accurate method for image classification, is used in calculating TIA and an overall classification accuracy of 86.33% was obtained. Water bodies are 100% pervious whereas urban built up area are 100% impervious. Further based on percentage of imperviousness, the Total Impervious Area is categorized into various classes.
Keywords: Urbanization, Impervious surface, Remote Sensing and GIS.

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Preliminary Assessment of Degraded Kottayam Chira Wetland Using Gis and its Developmental Scope

Amarnath A., Rojith G., Adhem Shahin and Rakesh V.B.
School of Environmental Studies, Cochin University of Science and Technology, Cochin, Kerala, INDIA

Abstract: Conservation and restoration of wetlands is of utmost significance for sustainable development as well as natural resource management. Kottayam Chira, which spreads around an area of about 12 acres is located at the northern region of Kerala State centred at coordinates at 11^0492 N and 75^0332 E., is a significant wetland with irrigational potential to nearby four panchayats. The wetland is now in a degraded form and preliminary scientific analysis has been done to characterize the wetland for future restoration efforts. GIS studies were performed to identify geographical setting and to assess the wetland area change occurred over past two decades. General slope and drainage pattern were determined. Analysis of land use\land cover pattern which has decisive impact over surface and sub surface water was done. Invasive plant species spread over the wetland is visible even from the satellite image. Buffer zone and catchment area was demarcated for conservation strategies to be adopted. GIS analysis indicates shrinkage of waterbody over past years. Developmental scope of the wetland in terms of irrigational and ground water recharge potential and tourism opportunities is also presented in this paper.
Keywords: Kottayam Chira, GIS Analysis, Developmental Scope.

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Biohydrogen from Algae: Fuel of the Future

Sharma Shaishav, Singh R.N. and Tripathi Satyendra
School of Energy and Environment Studies, Devi AhilyaVishwaVidyalaya, Takshashila Campus, Indore, INDIA

Abstract: Hydrogen holds much promise as a future fuel because of the increase in pollution caused by fossil fuels and continuous decrease in the availability of fossil fuels. The biggest drawback of hydrogen is that its production involves fossil fuels thereby causing pollution of environment. Biohydrogen produced from algae is not only a clean source of energy but can also be a major substitute for the continuous depleting gasoline. Third generation biohydrogen from algae have provided solutions to drawbacks of first and second generation biofuels up to an extent. This review critically updates different processes available for biohydrogen production from algae with special emphasis on their merits and demerits. Some approaches to overcome existing problems have also been outlined.
Keywords: Biohydrogen, Algae, Biophotolysis.

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Speciation and Toxicity of Arsenic : A Human Carcinogen

Gupta Shailesh[1] and Gupta Vikesh[2]
[1]Govt. Polytechnic College, Nowgong (Chhatarpur), MP, INDIA
[2]Sushila Devi Bansal College of Engg., Indore, MP, INDIA

Abstract: Arsenic is an element found in nature in rocks, soils, water and air in fact, it is one of the most common elements on earth. Arsenic is widely distributed throughout Earth's crust, generally as arsenic sulfide or as metal arsenates and arsenites. The major source of arsenic pollution in the environment is the smelting of ores such as those of gold, silver, copper and others. Arsenic from these sources is distributed in the air, water, soil and finds its way into the human system by way of direct inhalation or through contamination of food and consumer products. The world health organisation (WHO) recommended that many authorities reduce their regulatory limits and it has established a provisional guideline value of 10 ìg/l for arsenic in drinking water. While arsenic has been used historically in industry in fertilizers and preservatives, it is probably best known as a poison, toxic to humans who ingest it. Large doses are fatal relatively quickly, while smaller doses over time can cause diseases such as several types of cancer and skin disorders. Arsenic can become an environmental hazard when it is weathered from local geologic units and enters the groundwater supply. In the world today, many populations are at risk for arsenic poisoning due to exposure from contaminated drinking water. Arsenic contamination of drinking water is presently a worldwide epidemic. Contaminated drinking water has been found in Argentina, Chile, Mexico, China, Hungary, West Bengal, Bangladesh and Vietnam. Of these regions, West Bengal and Bangladesh are most seriously affected in terms of the size of the population at risk and the magnitude of the health problems. An estimated 300,000 people in West Bengal alone suffer from arsenic-induced skin lesions. Serious illnesses related to arsenic such as melanosis, keratosis, cancer, and gangrene have been reported in West Bengal and Bangladesh. In the process of arsenic metabolism, inorganic arsenic is methylated to monomethylarsonic acid and finally to dimethylarsinic acid, followed by excretion through urine. Thus, arsenic exposure may cause DNA hypomethylation due to continuous methyl depletion, facilitating aberrant gene expression that results in carcinogenesis. Further, though arsenic is nonmutagenic, it interacts synergistically with genotoxic agents in the production of mutations, and also induces chromosome abnormalities and cell proliferation.

Keywords: Arsenic, pollution, drinking water, contamination, toxic.

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Preparation of Low Cost Activated Carbon from Tea Waste using Sulphuric Acid as Activating Agent

Ganvir V.N. and Wankhade Amey A.
Dept. of Petroleum Refining and Petrochemical Technology, Laxminarayan Institute of Technology, Nagpur, MH, INDIA

Abstract: Adsorption is an important surface operation in unit operation and unit processes. Among many type of adsorbent material activated are the most widely used ,because of their large adsorptive capacity. Cost is an important parameter for comparing the adsorbent material.Among many such materials like turmeric waste, ferronia shell waste , Jatropha curcus seed shell waste, delonix shell waste and ipomea carnia stem , Tea waste isone such alternatives which is cheap easily available. Activated carbons tea waste prepared by chemical activation with sulphuric acid as an activating agent. The effect of activation parameter such as carbonization temperature sulphuric acid concentration contact time on the final products was studied by varying the H2SO4 to tea waste ratio, activation temperature and preheat –temperature.

Keywords: Tea waste, Activated carbon, Adsorption, unit operation, unit processes.

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Emissions from Crop/Biomass Residue Burning risk to Atmospheric Quality - A Review

Tripathi Satyendra, Singh R.N. and Sharma Shaishav
School of Energy and Environmental Studies, Devi Ahilya Vishwavidyalaya, Takshashila Campus, Indore, MP, INDIA

Abstract: Recent crop harvesting practices use mechanical harvesters in the rice and wheat farm system in India. These practices leave behind large quantities of crop residue in the field. However, there is no suitable method available for managing the crop residues. Crop residues / biomass burning are cheap and easiest method to dispose the leftover crop residues (wheat, rice, sugarcane etc.) after harvesting, for land clearing and pest control. Burning of crop residues is a common approach to eliminate waste after harvesting all over the world. Burning of these residues emit gases like

sulphur dioxide (SO_2), oxides of nitrogen (NOx), carbon dioxide (CO_2), carbon monoxide (CO), black carbon (BC), organic carbon (OC), methane (CH_4), volatile organic compounds (VOC), non-methane hydrocarbons (NMHCs), ozone (O_3), and aerosols etc which affect the global atmospheric chemistry and climate. Crop residues / biomass burning not only influence the atmospheric air quality including climate, it also affects the human health. This review covers the burning of crop residues / biomass and its affect on atmospheric quality and climate and also suggested some management options for crop residue/biomass besides burning which may be reducing the air pollution, climate as well as possibility of risk on human health.

Keywords: Crop residues burning, atmospheric quality, climate.

ISCA-ISC-2012-8EVS-79

Impact of Aquatic Weeds on Potable Water and their Control Measures with Referance to Suketa Dem of Khandwa District East Nimar MP, India

Mahajan Saroj[1] and Billore D.K.[2]
[1]G.M.L.B.G. PG College Kila Bhawan, Indore, MP, INDIA
[2]Mata Jeejabai Govt Girls P.G. College, Indore, MP, INDIA

Abstract: Water is the basic and primary need of all vital life processes, Present paper deals with effect of of aquatic weeds present in Sukta Dem Khandwa district situated in southwest of Madhya Pradesh . Maximum and minimum height above mean sea level is 905.56 meter and 180.00 meter respectively. Important source of potable water is Suketa Dem , At quarterly field survey during 2009-2010. Reviled that presence of 48 species of aquatic weeds (emergent, floating and submerged.) in Suketa Dem . The study of aquatic weeds shows number of Environmental problems like water pollution, Fish production greatly affected , The decomposition of weeds creates foul smell, taste ,odor problems which are unpleasant to public convenience , and ideal for mosquitoes growth , impede of free flow of water in canals .These creates impact on potable water The control measures are physical or mechanical, chemical, and biological methods, suggestions for purification and management of water for Khandwa inhabitate.

Keywords: aquatic weed, potable water.

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Arbuscular Mycorrhizal Fungi: A Potential Biotechnological tool for Enhancing Phytoremediation of Heavy Metal Contaminated Soil

Bhalerao Satish A. and Kelkar Tushar S.
Environmental Sciences Research Laboratory, Department of Botany, Wilson College, Mumbai, INDIA

Abstract: Soil contamination due to the disposal of industrial and urban wastes generated by human activities has become a major environmental concern. Controlled and uncontrolled disposal of wastes to agricultural soils are responsible for the migration of contaminants into non-contaminated sites. Soil contamination by heavy metals may pose a threat to human health. Arbuscular Mycorrhizal Fungi (AMF) are soil microorganisms that establish mutual symbiosis with the majority of higher plants providing a direct physical link between soil and plant roots. AMF can contribute to plant growth, particularly in disturbed or heavy metal contaminated sites, by increasing plant access to relatively immobile minerals such as phosphorus. Soil degradation produces changes in the diversity and abundance of AMF populations. This is critical because of the role of mycorrhizal fungi in plant establishment and survival. Such elimination of AMF populations can lead to problems with plant establishment and survival. It is well known that the heavy metals cannot be chemically degraded and need to be physically removed or be immobilized. AMF are of importance as they play a vital role in metal tolerance and accumulation. External mycelium of AMF provides a wider exploration of soil volumes by spreading beyond the root exploration zone, thus providing access to greater volume of heavy metals present in the rhizosphere. A greater volume of heavy metals is also stored in the mycorrhizal structures in the root and in spores. It has been reported that heavy metal tolerant AMF could protect plants against harmful effects of excessive heavy metals. Several biological and physical mechanisms have been proposed to explain metal tolerance of AMF and AM fungal contribution to metal tolerance of host plants. AMF supply plants with essential nutrients from the soil through uptake by extra-radical hyphae. The fungus may constitute a biological barrier against transfer of heavy metals to shoot. Present review reveals some of the facts about AMF in relation to heavy metal phytoremediation of contaminated soil.

Keywords: Arbusclar mycorrhizal fungi, heavy metals, heavy metal tolerance, extraradial hyphae.

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Sorption of Heavy Metal- Chromium (VI) using Glass Grade Spodumene

Parakudyil Ancy S.[1], Sharma P.K.[2], Michael K.M.[3] and. Pillai A.K.[1]
[1]Dept. of Chemistry, Govt.V.Y.T.O.G. Autonomous College, Durg, CG, INDIA
[2]Analytical Chemistry Div., Bhaba Atomic Research Centre, Bombay 400085, INDIA
[3]Fuel Reprocessing Division, Bhaba Atomic Research Centre, Bombay 400085, INDIA

Abstract: Biosorption is a process of removing or retaining of heavy metals and trace metals from waste water and effluents from various sources. This potential method of removing or retaining heavy metals from waste water is effected using biosorbents such as seaweeds, moulds, yeast, bacteria, crab shells, agricultural products such as wool, rice, straw, coconut husks, peat moss etc. The paper is specially meant to carry out experiments on sorption of chromium (VI) from iron ore leachates using glass grade spodumene (GSS) powder. It was found that crushed GSS powder possess relatively high sorption capacity. The biosorption experiments were performed under various conditions such as different initial concentration sorbent solution, pH, biosorbent concentration temperature and addition of various ions such as chitosan and ammonium phosphate in acidic medium. It was found that the equilibrium of the process was reached after one hour at room temperature. About 1 gm of GSS of powder was found to be enough to remove 150 µg of metal from 10 ml solution. The optimum pH value was found to be 4. The procedure was successfully applied to remove chromium ions from different effluent samples. Biosorption has distinct advantages over the conventional methods which include: reusability of biomaterial, low operating cost, selectivity for specific metal, short operation time and no chemical sludge. The shell powder GSS contain the chemical composition: SiO_2 -78.70, MgO - 0.003, Al_2O_3 – 17.68 , TiO_2- Nil , Li_2O — 3.43, MnO — 0.01, Fe_2O_3 – 0.12, P_2O_5 — 0 .06 , CaO - Nil , K_2O - Nil, ZnO- Nil (report of analytical chemistry division BARC, Bombay). Main toxic metal like Pb, Cu As, Se Hg, Cr etc are absent in this Sorbent samples GSS (sea shore shell powder) used in this study were obtained, free of charge.
Keywords: Extraction chromatography, chromium(VI), glass grade spodumene, iron ore leachates.

ISCA-ISC-2012-8EVS-82

A Ecofriendly Way : To Prevent Cancer Caused by Pesticide (Control of Pest by Insect)

Yadav Reetu[1], Yadav Saurabh[2], Saran Dayal[3] and Agarwal Anshul[4]
[1]Dayalbagh Education Institute, (Deemed University), Dayalbagh, Agra, INDIA
[2]Department of Chemistry, IBS, Dr. B.R.A. University, Agra, INDIA
[3]Department of Physics, St John's College, Agra, INDIA
[4]Department of Chemistry, Faculty of Engg. and Tech., Agra College, Agra, INDIA

Abstract: Pesticides are harmful to human health. In farming most of the pesticides (99%) accumulate in environment. People with high exposures to pesticides, such as farmers, have found high risk of cancers. According to the media reports (The Hindu), published during August 2011, cancer among farmers was caused by excessive use of pesticides in Punjab. In this review, we offer ecofriendly way of controls on pests that are found on farms. Managing pest by using their natural enemies against them. Some beneficial insects which are harmless to people but they are born to consume farmer target pest insect.
Keywords: Pesticides, cancer, ecofriendly.

ISCA-ISC-2012-8EVS-83

Study on Potability of Water from Abna River at Nimar Region of MP, India

Mishra Shakun[1], Prajapati Anurag[1], Mahajan Saroj[2], Khanuja Parvindar[1], More Archna[1]
[1]S.N. Govt. P.G. College, Khandwa, MP, INDIA
[2]N.G. Govt. College, Indore, MP, INDIA

Abstract: In the present work , water samples were collected monthly from October 2011 to September 2012 in duplicate totaling 72 water samples. The three sampling locations were : BABRI BAN (BB) , THE KISHOR KUMAR MUKTIDHAM (KKM) & CHHAIGAON DEVI (CHD) water is the most essential commodity for human life. Various physico-chemical parameters like temperature, turbidity, pH, hardness, calcium, chloride, iron, fluoride and total dissolved solids have a significant role in determining the potability of drinking water (WHO 1971). The present study deals with above parameter to find out potability of water from abna river, 1 k.m. away from Khandwa city. Khandwa district lies between 21 05 " to 22 9 " N latitude and 78 01 " to 79 49 " E Longitude. It is bounded on east by Betul , Hoshangabad districts of Bhopal division And Amrawati (Maharashtra) district. On the south by Burhanpur district and Amrawati (Maharashtra), on the west by west nimar and in north by Dewas district.
Keywords: Potability, abana river, nimar region, MP.

ISCA-ISC-2012-8EVS-84

Challenges of the 21st century-Water

Shrivastava Sudha
Govt Kalidas Girls College Ujjain, MP, INDIA

Abstract: One of the greatest global challenges of the 21st century is Water**.** The issues surrounding this precious resource are daunting as the world needs clean water for drinking, agriculture, energy, food, human health, and more. Also, the global population is expected to grow by more than two billion people to nine billion in 2050 and about one billion people today lack a reliable water supply, while the situation is expected to grow only worse. The problems associated with this crisis will require, at the most fundamental level, new thinking about science and technology but they can't be completely resolved without addressing social, economic, and political challenges. Desalination or the removal of salt from seawater, resulting in potable water will be essential to solving the world's growing water crisis. Today's commercial desalination systems can't meet the water needs of many people, especially those in developing countries. Among other drawbacks, they are expensive, energy-intensive, use fossil fuels, and require infrastructure to distribute the resulting water that is often not available in rural or poorer areas. One promising alternative can be evaporation of seawater, leaving salts behind, followed by condensation of that water vapor into fresh water i.e. rain. Known as humidification-dehumidification (HD) desalination, the system separates these basic natural processes into distinct components, such as a solar collector and a humidifier. Among other advantages HD can use an energy source readily available to many third-world countries i.e. sun. Can we avail the world population with sufficient potable water during entire 21st century?

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Solubilisation of Uganda Low Grade Rock Phosphate by *Pseudomonas Fluorescence*

Ranjita Panda[1], Siba P. Panda[2], Rabi N. Kar[3] and Chitta R. Panda[3]
[1]PG Dept of Environmental Sciences, Sambalpur University, Jyotivihar, Odisha, INDIA
[2]Environment Cell, R&D, Hindalco Industries Limited, Hirakud, Sambalpur, Odisha, INDIA
[3]Environment & Sustainability Department, Institute of Minerals $ Materials Technology(CSIR), Bhubaneswar, Odisha, INDIA

Abstract: Most agricultural soils contain large reserves of phosphorus (P), a considerable part of which accumulates as a consequence of regular applications of P fertilizers. However, a greater part of soil phosphorus, approximately 95–99% is present in the form of insoluble phosphates and hence cannot be utilized by the plants. In the present study phosphate solubilising activity of Pseudomonas fluorescence against three types of rock phosphate (RP) were studied with respect to different parameters like temperature, incubation period, pulp density and effect of different carbon and nitrogen sources. Results indicated that the lower the concentration of the phosphate in the leaching broth the greater was the dissolution percentage of P_2O_5. A maximum of 44.70, 48.84 and 56.17(mg%) of P_2O_5 solubilisation were obtained after 15 days of incubation at 35ºC from West valley, North valley and South valley rock phosphate, respectively at 0.5 % pulp density. Acidic pH medium was favourable for phosphate solubilisation in all the experiments. Among the carbon sources glucose followed by maltose and sucrose supported the maximum RP solubilization in the presence of 0.5% pulp density as the optimum concentration. Nitrogen in the form of ammonium was very effective in solubilizing rock phosphates by P. fluorescence.

Keywords: Pseudomonas fluorescence, Phosphate solubilisation, Rock phosphate.

ISCA-ISC-2012-8EVS-86

Isolation and Characterization of Heavy Metal Resistant Bacteria from Saryu River Contaminated with Pulp Paper Mill Effluent, UP, India

Pokhrel Sabita, Singh Ratan, Gautam Preeti and Das Amar Jyoti
Department of Environmental Microbiology Babasaheb bhimrao ambedkar university Lucknow, INDIA

Abstract: Pulp and paper effluents are considered as pollutant due to which large ecosystems have been polluted. In our study large numbers of pathogenic bacteria have been isolated such as *Pseudomonas* sp, *Staphylococcus* sp, *Branchamella* sp, *Acinetobacter* sp, *Klebsiella* sp, *Escherichia coli, Citrobacter* sp, *Neissaria* sp, *Bacillus* sp and *Salmonella* sp from Saryu River contaminated by Pulp and paper effluent. Antibiotic sensitivity and heavy metal resistance (100-1000 microg ml (-1)), tolerance of bacterial strains were assessed by four classes of antibiotics. 7 out of 10 isolated bacteria are multi drugs and heavy metal resistance. All bacteria are shown resistivity to Penicillum G and able to grow at 500 mg concentration of copper while 3 out of 10 isotates are able grow in 1000 mg of arsenic.

Keywords: pathogenic bacteria, antibiotic, heavy metals.

ISCA-ISC-2012-8EVS-87

Water Quality Studies on Sukta Dam, Khandwa District, MP, India

Mishra Shakun[1], Mujaffa Shaikh[2] and Prajapati Anurag[1]
[1]S.N. Govt. P.G. College, Khandwa, MP, INDIA
[2]P.M.B. Gujrati Science College, Indore, MP, INDIA

Abstract: Limnology is a branch of science which deals with biological productivity of inland water and with all the casual influences which determine it. (Welch 1948) Sukta dam is situated near Jaswari town on south side in the Khandwa city. The dam is about 1,000 Ft. above the sea level. The present research work assesses the water quality of dam. Sukta dam is used for drinking, irrigation and also used for fishing by fisherman around the region. In present investigation suitable ranges of dissolved oxygen, ph, turbidity, alkalinity, nutrients, organic and inorganic phosphates confirms the utility of water for drinking and irrigation.
Keyword: Sukta dam KNW district.

ISCA-ISC-2012-8EVS-88

Physico-Chemical Parameters of Godavari River Water around Nashik City, Maharashtra, India

Jadhav D.D.[1] and Medhane V.J.[2]
[1]Post Graduate Department of Chemistry, K.S.K.W.Arts Com. and Science College, CIDCO, Nashik, INDIA
[2]Post Graduate department of Chemistry, K.R.T. Arts, B.H. Commerce and A.M. Science College, Nashik, INDIA

Abstract: Water Quality is an important factor to judge environment changes, which are strongly associated with social and economic development. The river Godavari also known as Dakshin Ganga flows through the Nashik city. In Nasik municipal area surface waters are mostly of good quality, but pollution is increasing. The river, passing through Nasik City, is 70% polluted by domestic pollution and 30% by industries. River Godavari was found to be polluted at different stretches, mainly due to industrial, domestic and agriculture pollution. The major source of pollution is sewage, discharges of untreated effluents from industries and agriculture run off. It is noteworthy that no water source quality is targeted to be desirable above C class. In other words, none of the sources are safe for drinking or bathing without conventional treatment. The time has come to see if this trend can be reversed at least partially in some sources and efforts taken to conserve good water quality. The present study deals with the water quality assessment of 25km stretch of Godavari River from Someshwar to Nandur in Nasik. Attempts were made to identify point and non-point sources of pollution, collect data, define the status of water quality, and review existing and suggest additional conservation measures. The study stretch is sacred and attracts pilgrims in large numbers. As a result, the river has become the dustbin for eventual disposal of all sorts of pollutants (waste water, debris, etc.) generated on account of pilgrimage activities, as well as due to rapid and unplanned growth of human settlements along both sides of the river banks, inadequate sewage disposal and treatment facilitates, etc.
Keywords: Water quality parameters.

ISCA-ISC-2012-8EVS-89

Bioremediation of Lead and Cadmium from the Environment

Patil S.N.[1] and Gaikwad V.B.[2]
[1]Dept. of Biotechnology, KTHM College, Nashik, MS, INDIA
[2]BCUD, University of Pune, Pune, MS, INDIA

Abstract: This work describes the feasibility of using biodegradable surfactant, Rhamnolipid from *Pseudomonas aeruginosa* and phycoremediation using algal isolate viz. *Anabena variabilis* for the removal of heavy metals from artificially contaminated industrial waste water. Results showed that, after six days contact period at 37^0C and pH 7.6, 23% & 28% of the Lead, and 14% & 19% of the Cadmuim could be removed by biosurfactant containing cell free broth and crude preparation of biosurfactant respectively from the waste water. While, algal isolate *Anabena variabilis* grown in basal medium in presence and absence of trace elements could remove more than 34% & 29% of cadmium and 26%&21% of lead respectively from the waste water after 21 days of incubation. The algae was also able to reduce the offensive odour of the waste water. These experiments indicate that, though algae is more efficient in removal of lead and cadmium from the waste water, more time is required for it to grow. Biosurfactant production is less time consuming and molecular nature of biosurfactant offers the possibility of interaction with the metals in solution aiding in their removal. Moreover, due to the foaming property of the biosurfactant, metal-biosurfactant complexes can be removed by addition of air to cause foaming and then the biosurfactant can be recycled through precipitation by reducing the pH to 2.
Keywords: biosurfactant, bioremediation, lead, cadmium, heavy metals

ISCA-ISC-2012-8EVS-90

Is Mineral Water Really Reliable?

Gautam Reetu and Gautam R.K.
Deptt. of Zoology, Dr. B.R. Ambedkar University, Agra, INDIA

Abstract: Water is crucial compound for man's survival as it is very essential for the growth of human body and an important component of most of the metabolic chemical processes. The human's body contains about 70% water. A man's take 8 – 12 glasses of water daily having minerals like calcium, magnesium, phosphate, iron, zinc, fluoride etc. which serves as important nutrients for the body growth. In the modern generation, there is an increasing trend of using mineral water i.e. treated after reverse osmosis system. In a survey, it is analyzed that normal drinking water (without treated) having qualities (fluoride, hardness, alkalinity, chloride, heavy metals etc.) in the permissible range do not show any adverse effect on the body system. However, the use of mineral water which decreases the above parameters to much less extent shows the cardiovascular problems and less immunity of the body. An assessment of mineral water has been done for the study purpose from duration January, 2011 to April, 2011.

Keywords: Mineral Water, Hardness, Fluoride, Ground Water.

ISCA-ISC-2012-8EVS-91

Characterization of Organic and Elemental Carbon in $PM_{2.5}$ Aerosols at Agra, India

Tripti Pachauri, Saraswat Ram Kumar, Singla Vyoma, Lakhani Anita and Kumari K. Maharaj
Department of Chemistry, Faculty of Science, Dayalbagh Educational Institute, Dayalbagh, Agra, INDIA

Abstract: Airborne carbonaceous aerosols are largest contributor to fine particles with an aerodynamic diameter smaller than 2.5 µm ($PM_{2.5}$) which have been found to be associated with human health problems causing serious respiratory and cardiovascular diseases and air quality problems such as visibility reduction. The carbonaceous matter consists of organic carbon (OC) and elemental carbon (EC). Elemental carbon is a primary pollutant emitted from incomplete combustion of fossil fuel and biomass while OC can be either released directly into the atmosphere from anthropogenic and biogenic sources (primary OC, POC) or formed within the atmosphere through gas – to – particle conversion of volatile organic compounds through photochemical reactions (secondary OC, SOC) (Seinfeld and Pandis, 1998; Mkoma et al., 2010). The high loading of carbonaceous aerosols in fine particles has also been identified as the important factor in climate change, urban haze formation, crop production and atmospheric chemical reactions (Chameides et al., 1999; Ramanathan et al., 2001; Li and Bai, 2009). Thus, in lieu of the importance in recent years, special attention has been drawn on carbonaceous species and studies have been carried out in a large variety of environments worldwide to understand the chemical composition and to control the mass concentration of fine particles Keeping the view in mind, the present study has been carried out to quantify the relative contribution of carbonaceous species in $PM_{2.5}$ mass, to identify the possible sources and factors affecting carbonaceous species and to characterize the elemental composition and morphology of individual atmospheric particles using SEM – EDX method.

ISCA-ISC-2012-8EVS-92

Effect of Allelopathic Plants on *Parthenium Hysterophorus* in a Tropical Region

Jai Knox
Department of Botany, Wilson College, Mumbai- 400 007, INDIA

Abstract: Two of the many benefits of including allelopathic plants in suppressing *Parthenium hysterophorus* L. are decreasing fresh weight and biomass of *Parthenium* weed. This study was conducted in order to examine the effect of selected plants on fresh weight and biomass in tropical Agra, India. Together with an untreated control plot, *Parthenium* and selected allelopathic plants were grown from January 2011- December 2011. The weeds were allowed to develop uncontrolled for 3 months until the time when selected allelopathic plants would be planted with *Parthenium*. In the period after the incorporation of allelopathic plants *Parthenium* biomass was less, than in control. More than half of the biomass reduced by 15 days after the incorporation of allelopathic plants. The chemical exudates from allelopathic plants are proposed to play a major role in the allelopathy mode of action.

Keywords: *Parthenium*, allelopathic plants, incorporation, biomass.

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Standing Carbon Stock in Selective tree Species in CUSAT Campus at Cochin, Kerala, India

Smitha S.V., Adhem Shahin, Haneesh K.R. and Harindranathan Nair M.V.
School of Environmental Studies, Cochin University of Science and Technology, Cochin-22, Kerala, INDIA

Abstract: This study estimates biomass and total organic carbon content in the standing trees by non-destructive method. The study of total carbon stock of trees at the campus of Cochin University of science and technology, Kochi was conducted. Analysis of biomass and total organic carbon was done by is considering the tree height and girth. The height is measured using general trigonometry by finding out the angle between the tree top and the observer. In the study, 10 different species of trees were identified and outlined in the campus and were analysed for the estimation .The total biomass and total organic content was estimated and compared with Allometric model. Present study is helpful in the study of estimation of total organic carbon content by using non-destructive method

Keywords: Total biomass, Total organic carbon, non-destructive method and Allometric model

ISCA-ISC-2012-8EVS-94

Effect of Antibiotics in wastewater treatment

Chatterjee Jayati[1] , Rai Neena[2] and Sar Santosh K[3]
[1]Department of Chemistry, Faculty Of Science, Dr. C. V. Raman University, Kota, Bilaspur, CG, INDIA
[2]Department of Applied Chemistry, Faculty of Science, GEC,Bilaspur,CG, INDIA
[3]Department of Engineering & Environmental Chemistry, Faculty of Sciences, Prof., BIT, Durg, CG, INDIA

Abstract: Antibiotics are emerging contaminants in the aquatic environment because they have adverse effects on aquatic life and humans. The problem created by the presence of antibiotics at low concentrations in the environment is the development of antibiotic resistant bacteria. This paper aims at giving a review of antibiotics wastewater treatment. Different advanced oxidation processes (AOPs), such as Fenton, photo-Fenton and ozonation have been applied as pretreatment of antibiotics wastewater. AOP pretreatment can reduce organic concentration and improve biodegradability. Biological treatment, both aerobic and anaerobic systems, have also been used for treatment of antibiotics wastewater. The treatment of antibiotic wastewater by biological systems is influenced by type and concentration of the antibiotic (active substance) in wastewater. Application of other AOPs pretreatment and biological treatment for different types of antibiotics wastewater is a challenging area of research.

Keywords: Advanced oxidation processes (AOPs), antibiotics wastewater, biological treatment.

ISCA-ISC-2012-8EVS-95

Production of Biodiesel from Jatropha Seeds

Debabrata Maji
Department of Mechanical Engineering, North Eastern Regional Institute of Science and Technology, Nirjuli, Itanagar, Arunachal Pradesh, INDIA

Abstract: Continuous depletion of conventional energy and the environmental problem forced us to search new and renewable sources of energy. Keeping this points in mind the North Eastern Regional Institute of Science and Technology (NERIST), Arunachal Pradesh has set up a 'Bio-diesel Reactor System' under Department of Science and Technology (DST), Govt. of India, New Delhi sponsored project for practical demonstration and preparing the Bio-Diesel for economic upliftment of rural masses, particularly to local and marginal farmers. To sensitize the local farmers and to give an impetus as additional income revenue along with their traditional and mechanized agricultural activities, it is very much necessary to aware and trained them about the economic benefits of the bio-diesel. During the Farmers' Training Programme on 'Bio-diesel and its economic benefits' conducted on January 20-24, 2012, a study has been undertaken to extract Jatropha oil and convert it into bio-diesel in a batch process. This study has been undertaken to demonstrate the feasibility of farm level extraction and to use Biodiesel by the farmers themselves. The extraction and conversion has been carried out in a batch process at NERIST. From 200 kg of Jatropha seeds supplied by M/s Smriti Herbs and Bio-fuel Farm, Hojai, Assam, 64.68 litre of raw Jatropha oil has extracted using the oil expeller. From this study, it can be seen that the oil content of the Jatropha oil is around 28.5%.

Keywords: Bio-diesel; Jatropha; Economic Benefits; Batch process; Transesterification.

ISCA-ISC-2012-8EVS-96

An Economical and Ecological Industrial Management for the Development of our Nation

Tandon Rachit[1], Tandon Harshit[2], Kapoor Arsh[3] and Agarwal Anshul[4]
[1]Sikkim Manipal University, Kolkatta, WB, INDIA
[2]Hindustan College of Science and Technology, S.G.I, Mathura, UP, INDIA
[3]SRM University Modinagar Campus, Ghaziabad, UP, INDIA
[4]Faculty of Engineering and Technology, Agra College, Agra, UP, INDIA

Abstract: Chemicals approximately always affect our environment, so our industry seems to be a curse for the nature. The concept in industrial ecological management is analogy of industrial system to natural ecological systems. It presents an ecological and ecofriendly approach. In the industrial ecological system, industry should be considered as an interacting system rather than isolated components. The waste producing industries should be connected into an operating web that minimizes the total amount of industrial material that goes to the waste ,disposal sinks or lost in intermediate processes. In this idea, waste should be considered as a potential useful resource. An ideal industrial ecological system developed in the city of "Kalundborg, Denmark", can be an example to develop our nation and our Taj city in an ecofriendly way for the industry.

Keywords: Ecosystem, industrial waste, ecological management and economical management.

ISCA-ISC-2012-8EVS-97

Water Quality Index of Sitapat Pond at Dhar town, MP, India

Dhakad N.K.[1], Waskel Darasingh[2] and Baghel Laxmi[3]
[1]Additional Director, Indore-Ujjain Division M.P., INDIA
[2,3]Department 0f Zoology, Govt. P.G. College, Dhar M.P., INDIA

Abstract: Water quality index (WQI): Study of physico-chemical and bacteriological parameters of Sitapat pond at Dhar town (M.P.) to ascertain the quality of water for public consumption. Physico–chemical and bacteriological parameters of this pond were monitored seasonally during the 2007 and 2008. Results obtained from the study revealed that the WQI of the pond was well within the permissible limits and water is safe for drinking purpose.

Keywords: WQI, Physico–chemical, bacteriological.

ISCA-ISC-2012-9FS-01

Forensic Anthropology Case Work-Some New Features of Footprints

Kewal Krishan
Department of Anthropology, Panjab University, Chandigarh-160 014, INDIA

Abstract: Special individualizing features of footprints can provide useful evidences and clues in crime scene investigation. The present study is based on the north Indian Gujjars of Sub-Himalyan region as well as the students of Panjab University as a part of UGC sponsored research project. The study gives an idea about the use of characteristic features of the footprints in forensic case work. Various features of the toes, humps in the toe-line, phalange marks, flatfoot condition, pits, cracks, corns etc. were studied. Frequency of some of these characters has also been recorded. These characteristic features are demonstrated with suitable examples. These c features can provide useful clues to establish personal identity whenever complete or partial footprints are recovered at the crime scene and can help in including or excluding the possible presence of individual at the scene of crime. These are also helpful while identifying the footwear recovered at the crime scene in the sense that these individualistic characteristics of the footprints can be compared with the impressions on the insoles of the footwear.
Keywords: Forensic science; Forensic anthropology; Individualistic characteristics; Personal identification; Footprints.

ISCA-ISC-2012-9FS-02

Detection of Drug of Abuse (Morphine) in Hair

Khajuria Himanshu and Nayak Biswa P.
Amity Institute of Forensic Sciences, Amity University, UP, INDIA

Abstract: Hair analyses have become an important tool in forensic toxicology for investigation of the drug related crimes. Drugs can be detected months after the last intake; it can be considered as a proof of the past exposure to drugs. In this study 40 hair samples of opium addicts were taken from de-addiction center in Delhi. GC/MS is used for quantification of drug in hair for 90 days at regular interval of 30 days. Results indicate that morphine can be detected in hair till 90 days after drug abuse. This method has application in forensic toxicology as drug facilitated sexual assault complaints are made to police long after any drugs would have been eliminated from the conventional samples such as blood or urine.
Keywords: Opium, Drug of Abuse, GC-MS

ISCA-ISC-2012-9FS-03

Y-STR Polymorphism among Khandayat Community of Odisha, INDIA

Nayak Biswa Prakash[1], Khajuria Himanshu[1], Gupta Sapna[2] and Khajuria Shalini Sharma[3]
[1]AIFS, Amity University, Noida, UP, INDIA
[2]Shriram Institute for Industrial Research, New Delhi, INDIA
[3]Sandor Proteomics, New Delhi, INDIA

Abstract: The study was conducted to determine the polymorphism and extent of diversity at 9 short tandem repeat (STR) loci of Y-chromosome among the Khandayat Community of Odisha. Blood samples were collected from 150 unrelated individuals and DNA was extracted by Organic Method followed by multiplex polymerase chain reaction (PCR) and Genotyping. The analyzed loci include tetra-nucleotide Y-STR markers DYS19, DYS385a/b, DYS389I/II, DYS390, DYS391, DYS393 and a tri-nucleotide DYS392. These Y-STR markers are known as Minimal Haplotype Loci (MHL). Genotyping results showed that all loci included in the multiplex are highly polymorphic among the Khandayat Community.
Keywords: Y-STR, MHL, Multiplex-PCR, Genotyping.

ISCA-ISC-2012-9FS-04

Cloud Computing: Another Forensic Challenge

Puri Sorabh[1], Puri Pooja Malik[2], Khajuria Himanshu[2] and Nayak Biswa Prakash[2]
[1]Orange Business Services, Gurgaon, Haryana, INDIA
[2]Amity Institute of Forensic Sciences, Amity University, Noida, UP, INDIA

Abstract: Cloud Computing is estimated to be one of the most transformative technologies in the history of computing. This is a model for enabling convenient, on-demand network access to a shared pool of configurable resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Cloud computing raises some unique law enforcement concerns regarding the location of potential digital evidence, its preservation, and its subsequent forensic analysis. Customers are moving into clouds but there is still a degree of speculation over its integrity. This poster aims at providing a wider view over the forensic readiness of the clouds.
Keywords: Digital Evidence, Digital Forensics, Cloud Forensics.

ISCA-ISC-2012-9FS-05

Copy Number Variation (CNV) as a Forensic Marker System

Tomar Neha, Nayak B.P., Khajuria H. and Puri Pooja Malik
Amity Institute of Forensic Science, Amity University, Noida, Uttar Pradesh, INDIA

Abstract: Methods currently used in the Forensic DNA Typing, deal with the analysis of a selected set of short tandem repeats (STRs) or single nucleotide polymorphism (SNP) analysis. With a high power of discrimination, copy number variation (CNV) may also be considered as an additional tool in forensic DNA typing. CNV involves deletions and duplications of DNA fragments ranging in size from 1 kb to several Mb. The vast majority of CNV is inherited; the remaining 1% is de novo. Although CNV is not used very frequently as a forensic marker system in standard forensic DNA typing, it may be the key to the discrimination of monozygotic twin individuals, as differences in CNV in these individuals have been described.

Keywords: Copy Number Variation (CNV), DNA Typing, STR, SNP.

ISCA-ISC-2012-9FS-06

Method Development for Analysis of Amphetamine-Type Stimulants using GC-MS

Sharma Mahesh
Faculty of Science and Technology, Anglia Ruskin University, Cambridge, UK

Abstract: Forensic toxicology is the application of toxicology and other disciplines to the matter of law. The present work is based on forensic drug testing field of forensic toxicology. Nowadays, the abusing of drugs is considered as a very intense problem which occurring in communities. More and more people are getting addicted to drugs and many are the drug dealers. The main purpose of the present study was the drug profiling and identification of eight Amphetamine-type stimulants (d-amphetamine sulphate, (+)-methamphetamine, Ibuprofen, Piperazine hexahydrate, 1-(4-methoxyphenyl) piperazine, 1-(4-trifluoromethylphenyl) piperazine, 1-Benzylpiperazine and 1-(2-methoxyphenyl) piperazine) by developing a GC-MS method which would detect all the above drugs at the same time. Quinoline was used as internal standard (IS) during the present GC-MS analysis. The first step was the individual drug analysis by the developed GC-MS method and the next step was the mixed drug analysis. The drugs were derivatised by the acylation reagent PFPA, however the silylation reagent BSTFA:TMCS (99:1) was also used as an alternative to acylation. The standard curve of each drug was plotted and the Limit of Detection (LOD) and Limit of Quantification (LOQ) were both calculated. Finally, it was found that GC-MS is a quite sensitive and precise technique, which could be used for both qualitative and quantitative simultaneous analysis of all studied drugs in unknown mixed drugs samples. Moreover, acylation (PFPA) proved to be better derivatisation method than silylation (BSTFA:TMCS).

ISCA-ISC-2012-9FS-07

Social Networking: Its Uses and Abuses

Shelke Pooja[1] and Badiye Ashish
Institute of Forensic Science, Govt. of Maharashtra, Nagpur, MS, INDIA

Abstract: Social Networks are Web-based services that allow people to construct a public, or somewhat public, profile. Articulate a list of other users with whom they share a connection with friends, family, etc. Social networks not only allow people to meet and communicate with strangers, but they also let users organize and visible their social networks. In many ways, social media has led to positive changes in the way people communicate and share information; however, it has a dark side, as well. Social networking can sometimes result in negative outcomes, some with long-term consequences. There are millions of people on the internet who are looking to meet other people and to gather and share information and experiences on a variety of topics. Hundreds of social networking sites have been created, and have attracted millions of users. In a very short span social networking has become a phenomenon. Most of the key features of these sites are very similar, yet the cultures that form around the social networking sites vary in many different ways. Some of the sites target diverse audiences, while others attract people based on common language, race, sexual preferences, religion, or nationality. The sites also vary the ways in which the show and incorporate new information and communication tools, like mobile access, blogging, and photo and video sharing. Easily the most common use of Social Networking sites, and the main reason for them existing in the first place, is for personal reasons. It is used for its original purpose – to keep in touch with friends. Some people will go on simply to update their status or view their friends' statuses, or to look at photos from the weekend's night out. In the past it would have been nigh on impossible to keep in touch, much less keep up to date with what they are doing. But Social Networking, as coin, has two sides. However useful and creative it may be, but it also has its darker side. The current paper throws some light on a few of the common and popular methods of abuse and various risks faced by the users of social networks and some preventive measures to ensure the safety of person and personal data.

Keywords*:* Social Media, Baiting, Cross Site Scripting, Pharming, Doxing, Phreaking.

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Nanoparticles for Fingermark Detection in Forensic Science

Badiye Ashish[1], Khajuria Himanshu[2], Nayak Biswa Prakash[2] and Bansal Hansi[2]
[1]Institute of Forensic Science, Govt. of Maharashtra, RTM Nagpur University, Nagpur, MS, INDIA
[2]Amity Institute of Forensic Science, Amity University, Noida, UP, INDIA

Abstract: Nanoparticle research is currently an area of intense scientific research, due to a wide variety of potential applications in biomedical, optical, electronic fields and forensic science. Forensic investigation deal with scientific analysis of evidence left at a crime scene in order to determine establish means used, time of crime and the person involved in the crime. A fingerprint is considered as extremely vital evidence that establishes an association between a suspect and a criminal act. The small size of nanoparticles enables the detection of fingerprint sub-structure with greater detail and accuracy, in comparison with larger particles used in the traditional powdering on crime scene. Multi Metal Deposition (MMD) & Single Metal Deposition (SMD) techniques and their modifications are used and are advantageous due to the better definition of fingerprints recorded from crime scenes. These techniques improve the sensitivity and consequently increase the chance to detect very faint fingermarks, and by the same way increase the possibilities to find a link with criminals or suspects. Nanoparticles are advantageous over conventional powder as they produce sharper patterns and do not stain the background of the non-porous material. Fingerprints were successfully obtained from wet surfaces, porous, non-porous surfaces, beer bottles, duct tape, and several other difficult surfaces using nanoparticles. The current paper focuses on the applications and limitations of techniques relying on metal-containing nanoparticles and nano-structured particles for development of fingermarks left on the crime scenes that poses several unique challenges for the Crime Scene Forensic Unit. Proper development and application of nanoparticles specifically for forensic uses will revolutionized the modern Crime Investigations. Some of these methods are not yet sufficiently mature for routine implementation in casework. Ongoing research is required to continue the development of nanotechnology-based fingermark detection methods to optimize the results obtained from this approach.
Keywords: Nanoparticles, Fingerprint, Fingermark, Forensic Science, Nano- Forensics.

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Performance Enhancing Drugs in Sports

Badiye Ashish[1], Nayak Biswa Prakash[2], Khajuria Himanshu[2] and Puri Pooja Malik[2]
[1]Institute of Forensic Science, Govt. of Maharashtra, RTM Nagpur University, Nagpur, MH, INDIA
[2]Amity Institute of Forensic Science, Amity University, Noida, UP, INDIA

Abstract: From the beginning of human history most of the form of the rivalry has been performed with all possible means. Wherever and whenever the outcome of sporting competition has involved status, money or other similar rewards, attempts have been made to seek an advantage. Performance-Enhancing Drugs [PED's] are substances used by athletes to improve their performances in the sports in which they engage. In sports, the use of PED's is commonly referred to by the disparaging term "DOPING", particularly by those organizations that regulate competitions. The use of PED's is mostly done to improve athletic performance. This is why many sports ban the use of PED's. The reasons for the ban are mainly the alleged health threat of PED's to athletes & to provide equal opportunity for athletes and the supposedly exemplary effect of "clean" ("doping-free") sports in the public. Modern sport is plagued by suspicions that many top athletes resort to doping in order to enhance their performance. They use anabolic steroids, human growth hormone, erythropoietin (EPO), beta-blockers, stimulants or diuretics. While drugs such as these get a lot of publicity, they are perhaps not well understood. The issue of doping in sport is multifaceted. New drugs not only with anabolic properties such as selective androgen receptor modulators, synthetic insulins, blood doping with erythropoietins or homologous and autologous blood transfusions but also with sample manipulation have increased the range of method of doping. Doping is also linked to a lack of objective information concerning the risks involved in the use of the most recent substances. Since their positive effects are felt well before their negative side-effects, it is difficult to convince athletes and coaches not to use them. The increasingly young age of the affected population is a great cause for concern. The potential risk is very high; both in terms of the distortion of the image of sports among young people and the spread of a type of behaviour which, as evidence shows, can lead to addiction. The current poster throws some light on the various types of doping involved in sports, the desired effects, ill effects and possible detection, etc.
Keywords: Performance Enhancing Drugs, Doping in Sports, Doping, Drug of Abuse in sports.

ISCA-ISC-2012-10HS-01

Flaxseed as Wonderful Medicinal Plant and its Health Care

Rathi Preeti and Mogra Renu
Dept. of Foods and Nutrition, College of H.Sc., Udaipur, Maharana Pratap University of agriculture and tech., Udaipur, RJ, INDIA

Abstract: Flax (*Linum usitatissimum*) is an economically important oilseed crop, especially for Canada since it produces about 40% of the world's flaxseed and is the world's largest exporter of flaxseed, representing about 75% of the world trade. Flaxseed is highly valued for its neutraceutical properties such as omega-3 fatty acids which are the substrates for the synthesis of longer chain unsaturated fatty acids which confer important biophysical properties on cell membranes and are required for cell function. Flaxseed incorporation into the diet is particularly attractive from the perspective of development of foods with specific health advantages. It is also a good source of macronutrients and high dietary fiber. Flaxseed is a functional food which helps to improve the ratio of essential fatty acid in diet. Flaxseed has recently gained attention in the area of cardiovascular disease primarily because it is the richest known source of alpha-linolenic acid (ALA) and the phytoestrogen, lignans, as well as being a good source of soluble fiber. Flaxseed can modestly reduce serum total and low-density lipoprotein cholesterol concentrations, reduce postprandial glucose absorption, decrease some markers of inflammation, and raise serum levels of the omega-3 fatty acids, ALA and eicosapentaenoic acid. Dietary ALA may retard tumor growth and may also have a role in metastasis. It has been suggested that ALA is dietarily essential for optimal neurological development in humans, especially during fetal and early postnatal life. Flaxseed polysaccharide gum or mucilage may have nutritional value, which appears to play a role in reducing diabetes and coronary heart disease risk, preventing colon and rectal cancer, and reducing the incidence of obesity. Flaxseed gum has atherogenic effects in animal and human.

ISCA-ISC-2012-10HS-02

Improving Nutrition and Reproductive Health

Rathi Preeti and Mogra Renu
Dept. of Foods and Nutrition, College of H.Sc., Udaipur, Maharana Pratap University of agriculture and tech., Udaipur, RJ, INDIA

Abstract: The improved nutritional status of women, particularly during their childbearing years, is an important element of reproductive health. Efforts to improve women's nutrition and health include increasing food intake at all stages of the life cycle, eliminating micronutrient deficiencies, preventing and treating parasitic infections, reducing women's workload, and reducing unwanted fertility. Food and nutrition are essential for good health. However, chronic energy deficiency and stunting among women in developing countries are the results of malnutrition during fetal development, infancy, and childhood with low energy intakes continuing into adulthood. Recent evidence suggests that vitamin A deficiency in women may increase the risk of death. Mild maternal zinc deficiency has been related to complications of labor and delivery, including placental abruption, prolonged labor, premature rupture of the membranes, and the need for assisted or operative delivery. Also, low calcium intakes have been associated with hypertensive disorders and preeclampsia. An important element of reproductive health is improved nutritional status of women of childbearing years. This paper outlines the critical role of maternal nutrition and, in particular, micronutrients to reproductive health. Reproductive health refers to the period beginning at adolescence when a woman is potentially fertile and continues throughout pregnancy and lactation and between all subsequent pregnancies. Micronutrients play an essential role in the function of the immune system, and deficiencies in them influence the rate of infections as well as their duration and severity. Adequate folate levels at conception, for instance, are associated with reduced neural tube defects. Multiple supplements are beneficial in preventing cleft palate and other birth defects. Micronutrient status in breastfeeding women affects the quality of their breast milk, which in turn affects their infants' growth and development. Efforts to improve women's nutrition and health include increasing food intake at all stages of the life cycle, eliminating micronutrient deficiencies, preventing and treating parasitic infections, reducing women's workload, and controlling fertility.

ISCA-ISC-2012-10HS-03

A Study of the Food Safety Knowledge of the Street Food Vendors in Hisar City, Haryana, India

Sangwan V. and Dahiya S.
Department of Foods and Nutrition, Ccs Hau, Hisar, Haryana, INDIA

Abstract: The present study was carried out on forty street food vendors of Hisar City, Haryana to assess their food safety knowledge and food hygiene practices. The street food vendors were selling variety of food items namely*Dahibhalla (5.0%), Samosa (10.0%), Alootikki(15.0%),Parantha(5.0%),* Burger *(20.0%),*Momos*(5.0%),* Pani-puri*(15.0%),* Masala Dosa7.5*%),*Chowmein*(7.5%)and* Non-veg. items(10%). All of them procured raw material from known and reliable, stored raw material in safe, clean and intact containers (90.0%). However the cooked foods were exposed to flies and dust because 42.5% of them did not cover the food for sale. The food was sold in one time use disposables (72.5%), steel utensils (27.5%) and newspaper cuttings (7.5%). It was found that 80.0% of them used municipality water for cooking and washing, but they did not have regular water supply, so they stored water in big containers. Due to scarcity of water they cleaned the utensils in warm soapy water (63.64%) and they re-used it for washing of the utensils used for serving food. The very alarming finding was that the majority (87.5%) of them threw waste water near stalls and 22.5% did not have dustbins for garbage disposal. 77.5% had dust bins but they were too close to the stalls that attracted flies on the cooked food. Majority (97.5%) of them did not cover their head while cooking and 97.5% of them handled food with bare hands. It was concluded that they needed a basic training on maintaining proper food hygiene and on other safety aspects. It was also found that proper facilities should also be generated for them by the State Governments like safe garbage disposal and regular water supply since huge chunk of population relies on street foods also for satisfying their hunger needs.

Keywords: Street, food, vendors, food handling, safety, hygiene, training.

ISCA-ISC-2012-10HS-04

Work Postures Adopted by Women Block Printers and Problem Faced by them

Tiwari Meenaxi and Babel Sudha
Dept. of Textile and Apparel Designing, College of Home Science, M.P.U.A.T Udaipur, RJ, INDIA

Abstract: Work-related low back pain and injuries are the most common musculoskeletal disorders caused by manual handling the task being too strenuous or involving awkward postures or movements, and the working environment lacking sufficient space, having slippery, uneven or unstable floors, having extreme temperatures or poor lighting. Individual factors also make some workers especially vulnerable. Working with a bent and/or twisted trunk, raised arms, bent wrists, a bent neck and turned head increases the risk of back injury and should be avoided, as should twisting, turning and bending movements of the trunk, overreaching, sudden movements and repetitive handling. A preliminary survey was done to collect the information related to work posture adopted by women who involved in Block printing due to their faulty and traditional habit they faced problem and health hazard like Back ache, Musculoskeletal pain, pain in hand and wrists. Those problems arise due to unbalanced table height. Table height was not appropriate. Pain in leg due to standing of 1-2 hr. The printer applies color to the block and presses it firmly and steadily on the cloth, ensuring a good impression by striking it smartly on the back with a wooden mallet. The second impression is made in the same way, the printer taking care to see that it fits exactly to the first. They felt cough and allergy due to smell of color paste. Limited workspaces may be considered a risk factor for low back pain. Work in spaces that constrain an individual's posture should be eliminated where possible, workplace risk factors typically associated with low back pain include extreme postures of the back twisting, bending, stretching.etc.

Keywords: Work posture, Health hazards, Women printers, work place.

ISCA-ISC-2012-10HS-05

Surface Enrichment of Khadi Fabric Using Natural Thickeners

Govindwar Suresh[1], Sharma Sushil[2], Grover Ekta[3] and Fatima Nargis[3]
[1]Sam Higginbottom Institute of Agriculture, Technology and Science, Allahabad, UP, INDIA
[2]JJTU, Rajasthan, INDIA
[3]Department of Textiles and Apparel Designing, Halina School of Home Science, INDIA

Abstract: The glory of textile trade lies in its colour. In ancient times colour was considered as a spiritual necessity of equal importance as the physical need of food. In textile, while the fabric provides the body, dyeing provides the soul and printing provides the life. The colour has played an important role in one's life. It is an element which transforms the

entire fabric of life and also colour not only gives a pleasant look but also expresses emotions and ideas. Printing is a localized dyeing and the main objective of textile printing is the production of attractive designs with well defined boundaries, made by artistic arrangement of a motif or motifs in variegated colours. Since printing is an applied art, it is governed by prevailing economical values like market forces, fast changing trends, demands, good acceptable designs and external trends. India has mastered the art of dyeing and printing with natural colours when this was perhaps unknown else where. "Khadi" a versatile fabric had taken the birth in India during the eventful years of the freedom struggle. It is widely accepted in Indian fashion world. Through the medium of "Khadi" wearing, the weaver expresses art and the designing with the help of spindle and loom. It is gaining momentum in fashion world and leading fashion designers now included it in their collections by designing clothes with "Khadi" materials because of its unique property of keeping the weaver warm in winter and cool in summer season. In spite of so many properties, still "Khadi" has not gained the landmark in world's fashion industry because of its duller appearance. It has not gone through the constant research and development that is an indispensable part of the textile industry. So there is a dire need to give attention to this fabric and make it an extremely supreme fabric. Hence keeping in mind, the present study has been undertaken to select two most suitable thickeners out of the four indentified thickeners for printing of "Khadi" fabric using direct dye and to standardize the printing recipe for selected thickeners.

ISCA-ISC-2012-10HS-06

Anthropometric Measurements and Food Consumption Pattern of School Going Children in Varanasi, India

Tripathi Sushma and Chakravarty Archana
Department of Home Science, BHU, Varanasi, INDIA

Abstract: Anthropometry is used to characterize growth patterns and body composition. Growth pattern are indicators of nutritional status of children and are important in developing intervention programs. Fast foods are characterized as quick, easily accessible and cheap. Alternatives to home cooked meals , according to the National Institutes of Health (NIH). They also tend to be high I saturated fat , sugar , salt and calories . According to the NIH. Fast food consumption was considered to be specially event rather than part of an everyday diet . The monthly frequency average of fast food consumption was 4.05% (4. 25% for boys , 3.83% for girls).(hung –sun 2011) The present study was carried out on 100 school going children in selected area of Varanasi by cluster and purposive sampling methed . The age range selected for the study was 10 to 15 years . The pretested questionnaire was used and standard techniques for Anthropomatric measurements were used . According to BMI maximum school going children 38% girls and 50% boys of Varanasi city found underweight . The majority of school going children consume different types of fast foods like chips , kurkure , Maggie , chocolate , samosa etc . the study show' that maximum 98.67% children more consumed fast foods daily.

Keywords: Anthropometry, kurkure, techniques.

ISCA-ISC-2012-10HS-07

Changing Food Composition Pattern Amond Type 2 Diabetics in Varansi: A Critical Review

Chakravorty Sukanya, Pandey Vikas and Chakravarty Archana
Food and Nutrition, Department of Home Science, BHU, Varanasi, INDIA

Abstract: Diabetes mellitus and its complications constitute a major health problem in modern society. Type 2 (non-insulin-dependent) diabetes is associated with an increased frequency of other associated diseases. Actual number of the people suffering from diabetes is increasing because of substantial change in life style. The prevalence rate of diabetes has also been increasing in the past few years. Presently the prevalence rate of diabetes in Varanasi is 63%. Diet and nutrition is a major modifiable determinant of non insulin dependent diabetes, with scientific evidence supporting the view that alterations in diet and physical activity have good effects on health and help throughout life in better health management of diabetics. Nutritional intervention is an integral part of diabetes management and self-care education, aiming at the attainment and maintenance of optimal metabolic outcomes. The prevention and treatment of medical complications and the improvement of general health involves addressing individual nutritional needs. Diabetic people need to adopt a healthy diet with dietary changes that include modifications in food habits and meal patterns on a lifelong basis. The adoption of new food habits is not an easily achieved goal. Diabetic patients encounter several educational, environmental, psychological and lifestyle difficulties in modifying their lives to accommodate disease management. So there is a need of necessary dietary changes which can trigger positive changes in food pattern and composition of Diabetic patients.

Keywords: Diabetes mellitus, non-insulin-dependent, Varanasi.

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Exploring Milk Clotting Enzyme for Cheese Making from Plant Sources

Upasana[1], Chakravarty Archana[1] and Tripathi Y.B.[2]
[1]Home Science (Food and Nutrition), Banaras Hindu University, Varanasi, INDIA
[2]IMS, Banaras Hindu University, Varanasi, INDIA

Abstract: This investigation was carried out in order to extract milk clotting enzyme from plant sources which can be latter used in cheese production. Cheese making starts with coagulation of milk. The coagulation occurs due to change in the physio- chemical status of casein as a result of cleavage of peptide bond (between phenylalanine and methionine) in k-casein fraction. The coagulant which is widely used in cheese making is animal rennet (extracted from calf's abomasums i.e. fourth stomach before weaning) which contains chymosin, an asparatic protease responsible for milk clotting. In the present study three plants i.e. *Carica papaya*, *Euphorbia splendens* and *Musa paradasica* were taken to determine milk clotting activity of crude latex by identifying specific activity through their partial purification. The results indicated that *Carica papaya* plant latex had the highest milk clotting activity than *Musa paradasica* and minimum in *Europhorbia spelndens*. The plant latex having maximum milk clotting activity i.e. *Carica papaya* further characterised by Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) technique and displayed 5 bands ranges from 14.3 kDa to 97.4 kDa.

Keywords: Milk clotting enzyme, k-casein fraction, asparatic protease.

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Development of Cereal Based Noodles and Cornmeal Based Baked Snacks by Extrusion Technology and Determination of its Acceptibility

Shaista Parveen[1], Mishra Anjali[1], Mishra Anjali[1] and Saini Pinki[2]
[1]Food and Nutrition, Department of Home Science, BHU, Varanasi, INDIA
[2]Centre of Food Technology, University of Allahabad, Allahabad, INDIA

Abstract: Cereals supply the bulk of food consumed by the human race. Cereals are the cheapest source of food energy. Thus, the present work an attempt to develop more nutritious and healthy cereal based food products. Five samples of cereal based noodles were prepared in which one sample was served as control and other four samples were test samples. Test samples were prepared by the incorporation of selected cereals (wheat flour, maize flour, rice flour, and semolina) with refined flour in the proportion of 2:1. Numeric scoring test was used to determine the overall acceptability of noodles and found that noodles prepared from semolina and refined flour was most acceptable. On the other hand, cornmeal based baked snacks were prepared by combining cornmeal (10% to 30%) with the refined flour and subjected to sensory evaluation by nine point hedonic scale. In corporation of cornmeal flour at 30% level was most acceptable. Corn is an excellent source of complex carbohydrates, fatty acids and fibers. It has gluten free property. Extrusion technology was used for the development of these products. Extrusion technology has an important role in the food industry as efficient manufacturing process. It is versatile, cost effective, productive, maintained product quality and environment friendly.

Keywords: Cereals, noodles, cornmeal, wheat flour, maize flour.

ISCA-ISC-2012-10HS-10

Age Associated Disease Burden in Old Age Home and Residential Home in 21st Century-A Comparative Study

Yadav Sangeeta[1] and Singh Neetu[2]
[1]Human Development and Family Studies, B.B.A.U., Lucknow, INDIA
[2]Dept. of HD and FS, School for Home Science, B.B.A.U., Lucknow, INDIA

Abstract: Objective**:** To map out disease burden among elderly people. Analysis**:** so, in this study we see the pathological condition of the elderly who live in old age home and community home, that's who is promoting to another. Whole information was collected by interviewing method. Also assessing the disease condition of the older person with the help of pathological report. Food consumption pattern were assessed by the nature of diet and timing of that person. New area for exploring in the field of research among old age people was that who belong to their residential home but neglible in terms of health approach and their identification. Beside that old age home he/she facilitate and maintain their record for disease condition. This overview kept in mind new paradigm is seen in quality of life found in old age home. This raises a question among society people; old age home is better for elderly people. It safe old people inside their home to reduce the data of disease burden .Lastly but not least ,a danger sign for untold focus who lived there.

Keywords: Disease burden, pre and post condition.

ISCA-ISC-2012-10HS-11

Development and Nutritional Evaluation of mixture of Cereal and Pulses (Sattu) Value Added with Soyabean, Green Gram and Groundnut

Divya, Singh Mukta and Misra Mani
Dept. of Home Science, Mahila Mahavidhyalaya, Banaras Hindu University, Varanasi, INDIA

Abstract: India in today's scenario is advancing in every spectrum of development. It has proved its potential in agricultural sector, nanotechnologies and other latest technologies. But, the majority of India's population is still suffering from many health problems. Malnutrition being the most prevalent cause of mortality in developing countries likes India. The most vulnerable groups to problems like malnutrition are children and women. The major causes are lack of knowledge of locally available low-cost foods, ignorance etc. So, to fight against the problems like malnutrition, traditionally prepared food products like *"SATTU"* (a mixture of cereal and pulses) can be an effective supplement in the diet of the children and women. It is an indigenous food product which is nutritionally beneficial and as well as low-cost also. Hence, the study was designed for value addition of *"SATTU"* with soyabean, green gram, groundnut and jaggery. The product with green gram and jaggery was most acceptable. Nutritional evaluation data revealed that the product which was most acceptable has higher content of protein and fibre as compared of traditional product.
Keywords: Nano technologies, malnutrition, supplementary food, *SATTU.*

ISCA-ISC-2012-10HS-12

Assessment of Trans Fatty Acids in Street Foods

Henry-Unaeze H.N. and Ezitonye O.J.
Dept. of Human Nutrition and Dietetics, Michael Okpara University of Agriculture, Umudike, Umuahia, Abia State, NIGERIA

Abstract: This study assessed the trans-fatty acids contents of street foods consumed in Ibeku (urban) and Ikwuano (rural) communities in Abia state, Nigeria. Information on the demographic, socio-economic characteristics and street foods consumption were collected randomly using questionnaires administered on 100 respondents from the study areas. Chemical analysis of trans-fatty acids was carried out on the identified street foods. The results showed that twenty nine percent (34.5% urban, 65.5% rural) consumed all categories of street foods, 16% fried foods, 15% steamed foods and 15% baked foods. Time constraint (36.8%) was the major reason for patronizing street foods. The quantity of street foods consumed was 'large' for 38%. The main criterion considered when patronizing street foods was nutritional value 35.9%. Four trans fatty (myristelaidc, elaidic, linolelaidic and vaccenic) acids were obtained in the street foods consumed. Baked food (cake) had the highest trans fats (myristelaidic 0.65±0.01, elaidic 0.60±0.01) followed by fried food (egg roll – elaidic 1.10±0.001, linoelaidic 0.14± 0.001) and then steamed food (moi moi – myristelaidic 0.067±0.001, linoleidic 0.037±0.5, vaccenic 1.104±0.00). The consumption of street foods containing trans-fatty acids had no significant effect on the subjects' body mass index. Since trans fatty acids leads to heart disease, cancer, and diabetes, this paper advocates nutrition education program to enlighten the public on the effect of trans fat in human health.
Key words: Trans fatty acids, street foods, urban and rural areas.

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Environmental Stimulation, Parental Nurturance and Language Development in Urban Preschoolers

Sangwan Santosh and Punia Shakuntala
Dept. of Human Dev. and Family Studies, College of H. Sci., Chaudhary Charan Singh Haryana Agri. Uni. , Hisar, INDIA

Abstract: Children are born with a natural capacity for engaging the new world around them, as well as with tools to protect themselves from over-stimulation. The home environment and the interaction of the child with its mother and other significant people are the important factors in molding the child's life. Study was conducted in Hisar city of Haryana State (India) on a sample of 120 urban children, in the age range of 4 to 5 years. Reynell Developmental Language Scale (1985) was used to assess the language development of children. Standardized inventory was used to examine the environmental stimulation provided by the parents to their children. To delineate the effect of environmental stimulation on language performance of children, correlation was computed. The results highlighted balwadis children were poor in comprehension and expressive language but were inferior against standards. Significant relationship was evidenced between environmental stimulation and language development of children. The results demand for the need to plan strategies for enhancing language development of children at early stage both in school and home.
Keywords: preschoolers, language development, environmental stimulation.

ISCA-ISC-2012-10HS-14

Development and Sensory Evaluation of Food Products for Diabetic Patients

Vijaylakshmi, Dheerasinga Bhavani Annuridhika and Chakravarty Archana
Home Science, Food and Nutrition, B.H.U, Varanasi, INDIA

Abstract: Diabetes mellitus or simply diabetes is a group of metabolic disease in which a person as high blood sugar, either because the body does not produce enough insulin or because cells don't respond to the insulin that is produced. This high blood sugar produces the classical symptoms of polyuria, polydipsia, and polyphagia. Diabetes mellitus is a chronic disease which can't be cured except in very specific situations. Management in diabetes concentrates on keeping blood sugar levels as close to normal as possible, without causing hypoglycemia. This can usually be accomplished with diet, exercise and appropriate medications. Diabetes is a major public health problem among the adult and obese person. In modern era diabetes is most prevalent due to our sedentary life styles, lack of exercise, uses of junk foods, unhealthy and faulty food habits. Generally people don't have the information about food exchange list, food groups, and nutrient composition of food that they consume. Thus present work is an attempt to develop various food products for diabetic patients and nutrient composition was evaluated. The different food products were prepared and sensory evaluation was done by diabetic patients to assess their acceptability. The products were prepared by Rajma (*Phaseolus vulgaris*), Soybean (*Glycine max*), Cabbage (*Brassica oleracea*), Ragi (*Eleusine coracana*), and Oat (*Avena sativa*). Their nutritive value was evaluated in CFT and most products were accepted. Thus, these can be recommended for the diabetic patients.
Keywords: Diabetes mellitus, metabolic disease, *Phaseolus vulgaris,* cabbage.

ISCA-ISC-2012-10HS-15

Knowledge and use of Leisure time among Adolescence

Saraswat Shilpi and Mehta Mona
Dept. of Family and Community Resource Mgt, Faculty of Family and Community Sci., The Maharaja Sayajirao Uni. of Baroda, Vadodara, INDIA

Abstract: Leisure is commonly understood as free time, an activity, and/or a state of mind. Leisure hours are defined as the waking hours when a person is neither in school or college nor at work. Leisure plays an important role in the lives of adolescences. The use of leisure time by young people is of particular interest. Among this group, adolescence holds an important place. Their available time, excluding the usual factors that generally affect leisure, is also affected by the subject they choose to study and by the option they have according to the city in which they are living. Leisure has also been related to developmental action. The importance of leisure time activities in the psychological, cognitive and physical development of adolescence is recognized in all societies. With the view to find out the knowledge and use of leisure time among adolescence of 21st century, when much is talked about time management among them, a study was undertake on 350 randomly selected adolescence from Vadodara city. The questionnaire contained two sections, where section I was a knowledge scale consisting of equal number of positive and negative statements regarding leisure. The section II consisted of different leisure time activities of adolescence and the reasons for selecting the leisure time activities. Descriptive statistics and relational statistics were used for statistical analysis. The study would have implications for the other target groups namely adults, youth and elderly for utilizing their leisure time in view of a healthy life style.
Keywords: Knowledge of leisure, use of leisure time, adolescence.

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Emerging Adult's Perception on Romantic Love, Homosexuality and Pre Marital Sexual Relationship

Pandey Alka and Mayuri K.
[1]Department of Human Development and Family Studies, College of Home Science, Saifabad, Hyderabad, INDIA

Abstract: The present exploratory study entitled "Emerging Adult's Perception on Romantic Love, Homosexuality and Pre Marital Sexual Relationship" was undertaken in Hyderabad city. Self developed questionnaire was used to collect data and data were collected from 30 unmarried male and 30 unmarried female respondents who were in the age group 20-25 years. The main purpose of the present study was to understand unmarried emerging adult's perception on Romantic Love, Homosexuality and Pre Marital Sexual Relationship and also to understand the gender differences in their perceptions on sexual relationships. Findings of the study revealed the gender differences in perception of Romantic Love, Homosexuality and Pre Marital Sexual Relationship. More male respondents compared to female respondents agreed on the concept of love at first sight and both male and female respondents perceived understanding is the most important component of love but people often mistake sexual attraction as love. Male respondents perceived sex as most important

component of love where as female respondents perceived sex as not necessary; romance is psychological connection between two people. Male respondents considered physical appearance whereas female respondents considered good job as a most important characteristics to impress opposite sex. Males considered moving apart and females considered family compulsions are the main reasons of breakup of romantic love. Males perceived that in love relationship partners are generally expected to help partner as and when required and females perceived partners are expected to not get involved with other activities and give full attention to them. Majority of male respondents considered homosexuality as normal. In contrast female respondents considered it as abnormal behaviour. Most of the male respondents said sexual intercourse is acceptable if the couple is dating regularly whereas females disagreed on this point. Male and female respondents perceived that people generally get involved in premarital sexual relationship when they consider themselves in romantic relationship and male respondents said that fear of contacting STD and female respondents said that fear of pregnancy is a major repercussion of premarital sexual relationship.
Keywords: Emerging adult, homosexuality, perception, pre marital sexual relationship, romantic love.

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Development of Shades on Woolen Yarn by using Metal Complex Dyes

Deodiya Sangita and Mishra Mridula
Deparment of Home Science, Vasant Kanya Mahavidyalaya, Kamachha, Varanasi, Uttar Padesh, INDIA

Abstract: The experiments were conducted to develop various shades on woolen yarn by using metal complex dyes. The colorfastness of woolen yarn against washing was done. Scoured woolen yarn with tpi 22.5 and S- type was used for dyeing. Different combinations of Colosilk Red BRND and Colosilk Yellow 5GN was used for development of light, medium and dark shades on woolen yarns. Five different shades of each light, medium and dark shade were developed by using Colosilk Red BRND and Colosilk Yellow 5GN in different proportions. Thus, 45 different shades were produced. Open dyebath was used for dyeing process. The mixture to liquor ratio was 1:30. The optimum dyeing time and temperature was 90 to 120 minutes and 90 to 95R"C respectively. 10 % Glauber salt and 5% acetic acid both according to weight of fabric was used. pH was maintained in between 3-4. ISO Test 1 method was used for evaluating washing fastness. Hence a wide range of shades were obtained with combinations of metal complex dyes and good fastness against washing was obtained.
Keywords: Colosilk red BRND, colosilk yellow 5gn, iso test 1 and washing fastness.

ISCA-ISC-2012-10HS-18

Effect of Enzymes and Swelling Agents on Colour Strength (K/S) Property of Khadi Cotton Fabric Dyed With Sandalwood Dye

Dixit Sunita[1] and Shahnaz Jahan[2]
[1]Department of Home Science, Vasant Kanya Mahavidyalaya, Kamachha, Varanasi, Uttar Padesh, INDIA
[2]Dept. of Clothing and Textiles, College of Home Science, G.B. Pant University of Agriculture and Tech., Pantnagar, Uttarakhand, INDIA

Abstract: Cellulase and swelling agents are known to be effective in improving the colour strength of the cotton. Nowadays, the handloom fabrics are much preferred due to development of innovative designs and their comfort in wearing. Interests in natural dyes are also growing throughout the world and people are becoming more aware of the need for eco-friendly materials to come up and dominate the harmful synthetic dyes. But, the khadi cotton has some major shortcomings like less dyeability. Keeping in view that the pretreatment of khadi cotton with cellulases, swelling agents and combination of cellulases and swelling agents before dyeing improves the colour strength properties, the present study was planned. It was found that for the entire enzyme treated (acid and neutral cellulase) as well as swelling agents treated (Sodium hydroxide, Ethylenediamine and Zinc chloride) samples, the colour strength were increased in comparison to the untreated samples.
Keywords: Acid cellulase, ethylenediamine, neutral cellulase, sodium hydroxide and zinc chloride.

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Analyzing the Relationship between Mode of Parenting and Emotional Intelligence: A Pilot Study

Shukla Anshu
Dept. of Home Sci., VKM (BHU), Kamachha, Varanasi, INDIA

Abstract: This study was done to analyse parenting styles and emotionalintelligence of college respondents conducted on a purposive sample of 100 female respondents of College of Vasant Kanya Mahavidyalya, Kamachha, Varanasi, Uttar

Pradesh. The age of the respondents ranged between 18-23 years. The respondents selected were undergraduate and post graduate respondents from B.A.I, II, III and M.A.I II year classes.Parenting scale was used to measure parenting style developed byBharadwaj*et al.* (1998) Emotional Intelligence questionnaire was used to measure emotionalintelligence developed by Dulewicz and Higgs (2001). The results revealed that there was nosignificant relationship between demographic characteristics with parenting styles andemotional intelligence of the respondents. Majority of therespondents have developed rejection, carelessness, neglect, lenient standard, freedom, faulty role expectation, marital conflict and realism perceived models of the parenting. On the basis of overall results of emotional intelligence it can be concluded that among therespondents about 56, 31 and 13 per cent of them had developed lower, average and higherlevel of emotional intelligence, respectively. As acceptance, protection, indulgence, realism, moralism, discipline, realistic role expectation, marital adjustment perception of parentingincrease, the emotional intelligence of the respondents increases. As acceptance, protection, indulgence, realism, moralism, discipline, realistic roleexpectation, marital adjustment models behaviours of fathers, mothers and parenting withchildren in their interaction increase, the six components (viz., self-awareness, emotionalresilience, motivation, influence, interpersonal sensitivity and conscientiousness) of emotionalintelligence also increases. But the increase of intuitiveness among the respondents wasinversely related to the above models of behaviour of fathers, mothers and parenting.
Keywords: Parenting style, Emotional Intelligence, Models of Parenting.

ISCA-ISC-2012-10HS-20

Impact of Media on Adolescent Personality-A Review Article

Rai Avantika and Agarwal Shalini
Dept. of Human Devel. and Family Studies School for Home Sci., Baba Saheb Bhim Rao Ambedkar University Lucknow, INDIA

Abstract: In the last 50 years the media influence has grown expontaially with the advance of technology, first there was the telegraphs, than radio the news paper, magazines, television and now internet. We live in a society that depends on information and communication to keep moving in the right direction and do our daily activities like work entertainment health care education personal relationship traveling and anything else we do. The influence of media on our kid's teenagers and society is so big that we should know how it really works. The media makes many advertising they sell and that we are exposed to. After seeing thousands of advertising we make our buying decision based on what was seeing in TV, newspaper or magazines. There are the effects of mass media in teenagers; they buy what they see on TV. Media affect some positive and negative influence on young people. Media is increasingly pervasive in the lives of children and adolescents. On an average child today spends nearly 45 hours per week with media compared with 17 hours with parents and 30 hours in schools. However until now there has been National institute of health and California panicific medical centre reviewed 173 quantitative studies examining the relationship between media exposure and seven health outcomes children besity. Tobacco use, drugs use alcohol use, low academic achievement sexual behavior attention deficit disorder with hyper activity. The result showing adolescents being exposed to both implicit and explicit sexual content.
Keywords: Media, personality, adolescent.

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Obesity Assessment Based on Bmi in the Young Adults of Haryana-A State of India

Sindhu Sangeeta C., Gera Pratibha and Khetarpaul Neelam
Deptt. of Foods and Nutrition, College of Home Science, CCSHAU Hissar, Haryana, INDIA

Abstract: Over the past 20 years a dramatic transition has altered the diet and health of hundreds of millions of people across the third world. In India, like most developing nations, obesity has emerged as a more serious health threat than hunger. The change of lifestyle and dietary habits is leading to the global paradox of obesity and malnutrition. Objectives: The present study was planned with the objective to assess the nutritional status of the youth (18-21 yrs.) of Haryana state (India) using BMI, body fat per cent and waist to hip ratio as indicating parameters. Methods: A questionnaire was developed and pretested on 100 respondents. Appropriate changes were made in consultation with Statistician and subject experts. Seven districts namely Karnal , Panchkula, Ambala, Sirsa, Hisar, Sonipat and Rohtak from the Haryana state of India were (n=1482) studied. Students from private and government colleges who volunteered for the study were chosen as subjects. Results: Of the total, 612 students mentioned family income below Rs. 30,000/- per month, 742 students had family income between 30,000 – 1,00,000/- month and 128 students had monthly family income above Rs.1,00,000/-. Majority (61.74 per cent) of students were categorized as normal/healthy weight based on their BMI, 23.01 per cent were under weight, 12.35 per cent were overweight while only 43 students (2.90 per cent) were categorized as obese.

When considered gender wise, 18.95 per cent of male and 26.17 per cent of female students were underweight, while 16.64 and 14.16 per cent respectively were found to be overweight/obese. Body fat per cent correlated well with BMI categories but waist to hip ratio was contained within normal limits in all categories.

Keywords: Obesity, diet, third world, BMI.

ISCA-ISC-2012-10HS-22

Marreid Adolescent Girls and Reproductive Health: A Coprehensive Overview

Shukla Jyoti and Singh Neetu
Dept.of Human Devel. and Family Studies, School for Home Sciences, Babasaheb Bhimrao Ambedkar Uni., Lucknow, UP, INDIA

Abstract: Adolescence is the term used to describe the transition between childhood and adulthood. Coined in the beginning of the twentieth century, the term commonly connotes a stressful and critical period during which young people struggle to attain their sexuality, a widening world beyond their family, new ideas, and their changing social capabilities, roles and responsibilities. About 16 million adolescent girls aged between 15 and 19 give birth each year, Babies born to adolescent mothers account for roughly 11% of all births worldwide, 95% of which occur in developing countries. For some of these young women pregnancy and childbirth are planned and wanted but for many others they are not likely. There are several factors that contribute to this like girls may be pressure to marry and bear children early, or they may have limited educational and employment prospects. Some do not know how to avoid a pregnancy, or are unable to obtain contraceptives. Others may be unable to refuse unwanted sex or to resist coerced sex. Those that do become pregnant are less likely than adults to be able to obtain legal and safe abortions. They are also less likely than adults to access skilled prenatal, childbirth and postnatal care.

Key words: Adolescent girl, reproductive health, pregnancy.

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Does Nutrition Slow Down the Rate of Aging? - A Review Article

Singh Shruti[1] and Mishra Sunita[2]
[1]Dept. of Human Development Babasaheb BhimraoAmbedkar University, Lucknow, Uttar Pradesh, INDIA
[2]Family Studies School for Home Sciences, Babasaheb BhimraoAmbedkar University, Lucknow, Uttar Pradesh, INDIA

Abstract: Aging is defined as a genetic physiological process associated with morphological and functional changes in cellular and extracellular components aggravated by injury troughout life and resulting in a progressive imbalance of the control regulatory systems of the organism, including hormonal, autocrine, neuroendocrine and immune homeostatic mechanisms.Nutrition has solid potential in preserving youth and vitality. Calcium& Vitamin- D prevents osteoporosis and maintain healthy bones,Vitamin B12 to build red blood cells and maintain healthy nerves, Zinc to help compensate for lowered immunity due to ageing, Potassium is needed especially in the presence of high blood pressure, Folic acid&Vitamin- B,help in DNA and red blood cells formation ,can lower the levels of haemocysteine(associated with heart disease), Fiber prevents constipation,Omega-3 fatty acids prevents cardiac death by blocking fatal heart rhythms and keeps arteries healthy and reduces the sickness of platelets in the blood, vitamin- C and E & the phytochemicals; lutein, zeaxanthin & beta-carotene prevent or slow the onset of age-related macular degeneration and Alzheimer's disease, water keeps the body hydrated and cleansed. Avocado, Berries, Cruciferous vegetables, garlic, ginger, nuts, soya, watermelon, salmon, yogurt, turmeric, grapes, broccoli, whole grains, olive oils, tomatoes, fish, green tea, dark chocolates, red wine, pomegranates are some top anti-aging foods.

Keywords: Aging, Nutrition, Antioxidants, Anti-aging foods

ISCA-ISC-2012-10HS-24

Child Labour: It's a Crime A Review Article

Bharti Sarita and Agrawal Shalini
Department of Human Development and Family Studies, School for Home Sciences, BBAU, Lucknow, INDIA

Abstract: "Safety and security don't just happen; they are the result of collective consensus and public investment. We owe our children, the most vulnerable citizens in our society, a life free of violence and fear." -Nelson Mandela, Former President of South Africa. Any work whether manual or mental, which is under taken for monetary consideration, is called "labour" in economics. "Child Labour" is characterized by long hours of work, low remuneration and exploitation. (TripathiS.K, 1996). "Child Labour includes children prematurely living adult lives , working long hours for low wages under conditions damaging to their health and physical and mental development, sometimes separated from their families, frequently deprived of meaningful education and training opportunities that could open up for them a better future" (International Labour Organization, 1995). The International Labour Organisation (ILO) show that; globally, 1 in 6 children work, 218 million children aged 5-17 are involved in child labour worldwide, 126 million children work in

hazardous conditions . The child labour (Prohibition and Regulation Acts 1986) prohibits employment of children below age of 14 years in any factory or any hazardous employment. Any person who employ child he is liable for punishment with imprisonments for 3 month which can be extended to 1 year or Rs. 20,000/- fine. It provides free compulsory education for all children until they complete the age of 14 years. The common causes of child labour are poverty, over population, illiteracy, urbanization, unemployment of elder, orphans, willingness to exploit children, tradition of making children to learn the family skills, absence of universal compulsory primary education, social apathy and tolerance of child labour, ignorance of parents about the adverse consequences of the child labour, non availability of and non accessibility to schools, irrelevant and non-attractive school curriculum , employers prefer children as they constitute cheap labour and they are not able to organize themselves against exploitation. The consequences of child labour are stunted growth of future generation, inability to harness human resources, inability to contribute to development, inability to benefit from development, citizens with accumulated frustration, adult unemployment, depreciation in wages, perpetuation of economic inequality, increase abuse of children, increased illiteracy, ignorant populace, sick citizens, citizens with inferiority complex, malnourished citizens political instability, early morbidity of citizens, mental deformity of citizens, wasted human resources, wasted human talents and skills. The health hazards of child labour are injuries from accidents, heat induced problems, dermatitis, snake bite, drug abuse, smoking, venereal diseases due to child abuse and prostitution, lung problems, poisoning, eye problems, deformities, AIDS, hepatitis, reduction in life span and high morbidity.

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Health of Spine and the Role of Sitting Furniture

Awasthi Anuradha
Home Science, MLB Govt. Girls P.G. College, Kila Maidan, Indore, MP, INDIA

Abstract: Sitting furniture is an essential item of every office, home rather every building. On an average a working person spends three fourth of his/her time in sitting. So every person should be provided with a good seat to work efficiently, to prevent back problems, Strain, fatigue and to keep good health of the spine. Eklund and corlett (1987) said that high rates of back and neck pain and also increased rate of degenerative diseases of the spine have been observed among many occupational groups with sedentary task. Through no recorded data is available in India, major portion of the population is believed to be suffering from back pain and other problems that can be traced to postural discomfort on the faculty designs and dimensions of the furniture they use. It is in this contest that the present study was undertaken. The aim of the study was to find out the relation between the anthropometric measurements and chair dimensions which they use and to trace the incidences of body part discomfort resulting in the various types of disorders related to spine. Hundred male and hundred female office workers were selected for the study out of which fifty were working in government officers and fifty in nongovernment offices. Measurement of the sitting furniture was made using freeman flexible tape. Anthropometric measurements of the subjects were taken with the help of anthropometric kit. The body part discomfort was assessed using corelett's body part discomfort scale and a general comfort rating scale developed by shackle et. al The study revealed that there is a significant difference between all the anthropometric measurement and the chair dimensions of the chair used by the office workers of both government and nongovernment offices. The mismatch in the anthropometric measurements and the chair dimensions is the main cause of the discomfort caused to the user of the sitting furniture. The discomfort felt by the government office workers was higher than the nongovernment office workers. The female workers felt more discomfort. The paper suggests the appropriate dimensions and designs of sitting furniture to prevent and reduce problems related to spine.

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Impact of Intervention on Children with Learning Disabilities

Singh Bhawana[1] and Anshu[2]
[1]Dept. of Human Development and Family Studies, School for Home Science, BBAU, Lucknow, INDIA
[2]Dept. of Home Science, College of Agriculture, Allahabad Agricultural Institute Deemed University Allahabad, INDIA

Abstract: An interventional study was carried out on children with learning disabilities with the objectives: i. To develop an intervention module for learning disabled children, ii. To administer an intervention module on identified sample, iii. to assess the impact of intervention. From the total of 150 children, thirty seven children (26 boys and 11 girls) were already identified with learning disability from the pre-primary schools of Rudrapur, were implemented on a weekly basis on each subject for three months regularly, after that the extent of learning disabilities was assessed with the help of Behavioural checklist to evaluate the impact of intervention. Teachers and parents of these children were also interviewed periodically to assess the changes after intervention in children. Results revealed that dyslexia, dysgraphia and dyscalculia were improved significantly ($P<0.05$) after intervention. It was also observed that boys reflected significant ($P<0.05$)

improvement in learning disabilities after intervention. Results also revealed that children from nuclear families were improved significantly (P<0.05) after intervention. Out of various measures used by parents and teachers to help children were mainly convincing, scolding, consoling and referring specialists observed more beneficial for learning disabled children after intervention. Therefore from the results of the study it can be concluded that learning disabilities can be improved significantly with intensive early intervention.
Keywords: Learning disability, Intervention, Dyslexia, Dysgraphia, Dyscalculia.

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Environmental Friendly Antimicrobial Finish on Cotton by Using Natural Biopolymer (Chitosan)

Verma Mona, Khambra Krishna, Yadav Nirmal and Singh Rajvir
I.C. College of Home Science, CCSHAU, Hisar, Haryana, INDIA

Abstract: The cotton fabric has great demand in the Indian apparel industry. It is the fabric which is most preferred among the rest of the fabric because of its versatile nature .It is known as the fabric of comfort. . Cotton is characterized by the following excellent properties: absorbency, biodegradable, breathable, drape, easily sterilized, heat resting, high wet strength, insulating properties, non allergenic, renewable resource, softness and water retaining capacity. But there is one drawback with this fibre it suffers from bacterial degradation. In the present scenario of environment consciousness, the new quality requirements not only emphasize on the intrinsic functionality but also on the durability of finish .It should be ecofriendly or non toxic in nature so that consumer should not be suffered from health hazards. So the researches are focusing on the ecofriendly finish. Many commercial products are available in the markets which are applied for imparting antimicrobial finish. But most of them are generally synthetic in nature which is not environmental friendly. Chitosan is a natural bio polymer which has opened new avenues for research in the field of antimicrobial finish. It is the derivative of chitin which is the natural waste. Chitin is the exoskeleton of the sea animals. Tones of chitin are discarded from the food industries while processing food products. If this chitin is used for making chitosan. Thus it will solve the problem of managing the food industry waste as well will make the profit to the finishing sector and the worker who are intensively engaged in finishing industries while working in this industry they suffers from health problems .If they apply the synthetic finish which are generally toxic in nature. In the present study chitosan is used for giving antimicrobial finish on cotton fabric for minimizing the health problems .It is an ecofriendly finish.
Keywords: Antimicrobial finish, chitosan, cotton fabric.

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Stress Management Among Working Women - A Review Article

Vantika and Mishra Sunita
Department of Human Development & Family Studies, School for Home Science, BBAU, Lucknow, INDIA

Abstract: Stress is a part of life in a fast-paced society. However, contrary to popular belief, stress is not always bad. We need some stress to stimulate us. A certain level of stress is beneficial. It helps us to set and achieve goals as well as perform at a higher level. However, there are times when stress is overwhelming. This type of stress called distress paralyses rather than stimulates. It contributes to decreased health and well-being. Stress in the workplace reduces productivity, increases management pressures, and makes people ill in many ways, evidence of which is still increasing. Workplace stress affects the performance of the brain, including functions of work performance; memory, concentration, and learning. Most stress can be managed. Determination and self discipline are keys to finding the source(s) of stress and coping with it before it has escalated to an uncontrollable level. As a rule stress management plans will include learning to do some old tasks differently. Initially, the effects of stress can likely be alleviated by simple, common-sense measures. Develop a management and control strategy to help avoid potential distresses. Working women have more stress than men because women have to manage their work places as well as their homes but they can keep themselves sane, happy and keep stress away through the stress management technique.
Key words: Stress management, working women, Stimulates.

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Fast Food is Dangerous for Health

Arya Geeta and Mishra Sunita
Dept. of Human Dev. & Family Studies, School for Home Sci., BBAU, Lucknow, Uttar Pradesh, INDIA

Abstract: We are living in a world today where lemonade is made from artificial flavours and furniture polish is made from real lemons."- Alfresh E Newman Food is any substance consumed to provide nutritional support for the body. It is usually of plant or animal origin & contains essential nutrients such as carbohydrates, fats, proteins, vitamins or minerals.

Junk food is a term describing food that is perceived to be unhealthy or having poor nutritional value, according to Food Standards Agency. It has been proven that high fat/sugar foods leads to obesity, increase in cholesterol, high blood pressure and cardiac problems made. The symptoms like headache, muscle tightness, numbers/tingling, general weakness and flushing occurred more frequently after Monosodium Glutamate ingestion. A survey disclosed that 53% of children in Chandigarh spend an average of Rs. 700 to 1000 every month on junk food in school canteens. Another alarming finding was that 59% of the food served in canteens was junk food. It revealed that kids prefer to snack on junk food which is heavy in fats, salt and sugar and warns that if the trend continues, the kids are set to develop lifestyle diseases. Empty calories in soft drinks and fatty foods promote obesity, responsible for many of the health problems plaguing the planet. Obesity can have a deep effect on a child's life, increasing risk of numerous health problems such as heart disease, hypertension and stroke, type 2 diabetes, high level of cholesterol and sleep apnoea. Obese children also face a higher risk of developing liver diseases, orthopedic problems and asthma.
Keywords: Fast foods, obesity, empty calories.

ISCA-ISC-2012-10HS-30

The Costs of Preterm Birth: An Overview

Shah Swati and Yadav Lali
Extension Education and Communication Management, CCS, Haryana Agricultural University Hissar, Haryana, INDIA

Abstract: Of the numerous health problems preterm birth has been identified as one of the most crucial public health problem. The problem is not restricted to under developing and under developed world but also has impacted the most developed countries of the world. It is the single major cause associated with infant mortality and morbidity in both developing and developed world. Till today many of the factors responsible for its occurrence is not known but researches have listed out some factors associated with it which include behavioural and psychological factors, nutrition, life style, environmental exposure, medical conditions, infertility treatment, biological factors and demographic factors. It is not just a problem of having a preterm child but much more than that. It results in many harsh consequences including physical, emotional and economical losses to the family, community as well as to the nation. Physical losses include mortality, morbidity and development problems, financial losses to the family and psychological pain which a family have to go through especially to a mother, who need emotional support but most of the times she is blamed for giving birth to a preterm child. This creates a double mental pressure on the mother which again results in different problems.
Keywords: Preterm birth, consequences, physical, emotional, economical.

ISCA-ISC-2012-10HS-31

To Explore Obesity-Related Knowledge, Attitudes, Stigma and Health-Seeking Practices among the General Public in Urban Varanasi, India

Singh Pragya and Shankar Hari
Department of Community Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005, INDIA

Abstract: The present study was conducted to test knowledge attitude stigma and health seeking practices about obesity among adults in urban Varanasi. A cross sectional study was conducted at Sunderpur, which is urban field practice area of department of Community Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Pretested and predesigned questionnaire was used. probability proportion to size sampling was adopted. Ultimate study subjects were fund 290 adults calculated on the basis of previous prevalence of KAP. The respondents were only from two religion that was 95.9% Hindu and 4.1% Muslim. It was found that maximum 59.3% respondents were OBC category and 47.6 %were from upper socioeconomic group. 108 (78.3%) respondents from upper SES and 99(65.1%) from lower SES were said that obesity is a disease. Majority of respondents 85(29.3) said that obesity is affected by luxurious life style. Maximum 166(57.2%) people said that vulnerable group for obesity is 20-50 years. 245(84.5%) people said other diseases spread because of obesity. Maximum respondents 109(37.6%) were said that working while sitting for a longer time is a major factor affecting obesity others were responses found were labourers 43(14.8%), who beware hard work 69(23.8%) and rich people 69(23.8%). The study shows that luxurious life and the working while sitting for longer time are the major cause of obesityit was fou Only one third respondents 109(37.6%) had knowledge about obesity and accepted that proper diet, Physical work and lowering weight to normal level are the control measures of obesity. A better understanding of the causes of obesity can help overcome barriers to the primary prevention of obesity for youth and adults in communities, medical care and workplaces.
Keywords: Caste, religion, socio-economic status, education status, KAP etc.

ISCA-ISC-2012-10HS-32

Indispensable Traditinal Food Habits and Social Life of Adivasi Women of Koraput District: A Culture Dependence Perspective

Padhan Sarojini and Mishra Sunita
Dept. of Human Development and Family Studies, School for Home Sciences, BBAU, Lucknow, UP, INDIA

Abstract: Adivasis are a racial group a distinct class of people living mostly in the hills and forest. They are very simple and innocent and many of them lead a primitive lifestyle. This paper discusses about the use of culturally important indigenous locally available foods used by Adivasi women as food and fodders. The objectives of the study were to study the food habits and social life style pattern of the Adivasi women in diverse socio economic system. Descriptive research was conducted at Koraput district. 200 respondents were selected for the study. Purposive random sample method was used for sample selection and data were collected by personal interview method. After data collection data were tabulated with the help of master chart and analysis was done by frequency, percentage, mean, SD. Results of the study revealed that in Koraput district, majority of respondents staple food was rice (Oryza sativa) and most of them dried fish and bamboo shoots. All the respondents celebrated Rathyatra and most of them preferred to consumed fermented food, fresh food and semi fermented food during festive occasion. We can infer from these examples that the culturally rich traditional foods prepared from the forest based ethnobotanicals are not only an integral part of the Adivasi women diet, but are very essential for their day to day life.

Keywords: Rathyatra, adivasi, fermented food, fresh food.

ISCA-ISC-2012-10HS-33

Effect of Gender Differences on Job Satisfaction among Academic Professionals: A Comparative Study of Lucknow City, India

Bhatt Pragya and Mishra Sunita
Department of Human Development and Family Studies, School for Home Sciences, BBAU, Lucknow, UP, INDIA

Abstract: Teachers are the most important group of professionals for our nation's future. It is astonishing to know that even today many of teachers are dissatisfied with their job. Job satisfaction among academic professionals is good not only for themselves but society depends upon the role played by the teacher. The main purpose of this study was to study the effect of gender differences on job satisfaction among academic professionals. The study was conducted in lucknow city by selecting the total 150 sample comprising 50 teachers from government college, 50 teachers from private college and 50 teachers from university. The information was collected using self prepared interview schedule along with job satisfaction scale. The data was coded, tabulated and analyzed using percentage, frequency and chi square. From the findings of the study it can be concluded that there was a non significant gender difference in job satisfaction of university and government teachers. Also significant gender differences were found in private college teacher.

Keywords: Academic professionals, profession, job satisfaction, gender.

ISCA-ISC-2012-10HS-34

To Assess Emotional and Educational Adjustment in College Going Students Across Gender: A Comparative Study of Lucknow City, India

Singh Garima and Mishra Sunita
Department of Human Development and Family Studies, School for Home Sciences, BBAU, Lucknow U.P., INDIA

Abstract: College going situation is the most important period of human life which is called the transitional period of life. It is during college students that rapid physical growth and changes in physiological processes take place. College students are also a period of progress towards mental, intellectual and emotional maturation. Present study was undertaken to assess emotional and educational adjustment in college going students across gender. The study was conducted in Lucknow city by selecting the total 120 sample comprising 60 male and 60 female respondents. The information was collected using a self-prepared interview schedule along with Adjustment inventory. Data was analyzed in terms of frequency, percentage and chi-square test. From the findings of the study it can be concluded that significant differences was found in the emotional adjustment of students with respect to their gender and there was significant differences in educational adjustment across gender.

Keywords: Emotional adjustment, Educational adjustment and Gender.

ISCA-ISC-2012-10HS-35

A Study about Knowledge Attitude and Practices (K.A.P) towards Child Survival and their Outcomes Belong to Urban Slum Area of Lucknow City, India

Saran Payal and Singh Neetu
Dept. HD and FS School for Home science, B.B.A.U, Lucknow, INDIA

Abstract: Child survival is a call to action to save the lives of children under 5 and promote healthy and productive families and communities. We already have the means and technology to save millions of children's live each year. That threats and solution are well known to public health professionals. But we need to inform and educate a wider audience so that action can be taken. To know attitude at the time of morbidity among children o-5 year in the study family. Across sectional study was used for data collection knowledge towards child survival selected by multistage random sampling and questionnaire and interview**.** Attitude related towards Immunization, health, morbidity, antenatal check up and home remedies. The various finding. The study reflected majority of the respondent was said they were satisfied with the facility program. The study present majority of the respondent were said that they were disagree with the every program is availed by childern.More then half study subject were said disagree with the program is modified in future. More then half respondent were agree that vaccination is preventable to TB. Near about 100% respondent s was response it is not worth child survival. One third respondents were said bandage use in home remedies.
Keywords: Mortality, Morbidity, and Antenatal check up.

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Gender Differences in Self Esteem, Loneliness among Young Adults

Srivastava Nupur and Agarwal Shalini
Department of Human Development and Family Studies School for Home Sciences, BBAU, Lucknow, INDIA

Abstract: The current study assessed the gender differences in self esteem, loneliness among young adults and examined their association with each other. A total of 120 respondents were selected from Lucknow city. Out of which 60 were male respondents and 60 were female respondents. The data were collected using a self administered interview schedule along with Rosenberg Self Esteem Scale and UCLA loneliness scale. The data was coded, tabulated and analyzed using frequency, percentage, and Chi-square and Karl Pearson correlation. The results of the study revealed that male had good self esteem than female and there was a non significant difference between gender and self esteem. Males had higher loneliness than females and there was a significant difference between loneliness and gender. The study also revealed that self esteem and loneliness were negative moderately correlated with each other.
Keywords: Adults, Self-Esteem, Gender.

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A Study on Moral Values and Educational Adjustment among Male Children Studying in Different Medium School

Singh Hema and Agarwal Shalini
Department of Human Development and Family Studies School for Home Sciences, BBAU, Lucknow 226025, UP, INDIA

Abstract: The present study was intended to examine moral values and educational adjustment among male children studying in different medium school. The main aim of the study was moral values and educational adjustment of English medium and Hindi medium students. A total sample of 120 in which 60 Hindi medium and 60 English medium respondents were collected from the different areas of Lucknow city using the purposive random sampling method. The data were collected using a self administered interview schedule along with Moral values scale and Educational adjustment inventory. The data was coded, tabulated and analyzed using frequency, percentage, Chi- square. The study finding revealed that the majority of respondent had non significant difference between medium of school and moral values of respondent and highly significant difference between educational adjustments across medium.
Keywords: Moral values, educational adjustment, medium of school, school going children.

ISCA-ISC-2012-10HS-38

Teenage Depression

Tiwari Nidhi
Department of Home Science, Human Development, Gopinath PG College, Ghazipur, Jaunpur, INDIA

Abstract: Depression is a state of low mood and aversion to activity that can have a negative effect on a person's thoughts, behavior, feelings, world view and physical well-being. Depressed people may feel sad,

anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt, or restless. They may lose interest in activities that once were pleasurable, experience loss of appetite or overeating, have problems concentrating, remembering details, or making decisions, and may contemplate or attempt suicide. Teens who are seriously depressed often think, speak, or make "attention-getting" attempts at suicide. An alarming and increasing number of teenagers attempt and succeed at suicide, so suicidal thoughts or behaviors should always be taken very seriously. Depressed mood is not necessarily a psychiatric disorder. It is a normal reaction to certain life events, a symptom of some medical conditions, and a side effect of some medical treatments. Depressed mood is also a primary or associated feature of certain psychiatric syndromes such as clinical depression. Teenage depression isn't just bad moods and occasional melancholy-it's a serious problem that impacts every aspect of a teen's life. Teen depression can lead to problems at home and school, drug abuse, self-loathing-even violence or suicide. But as a concerned parent, teacher, or friend, there are many ways you can help. Talking about the problem and offering support can go a long way toward getting your teenager back on track.

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Achievement Motivation, Self-Efficacy and Goal Directed Behaviour of Adolescents

Joshi Neha and Saradadevi M.
Department of Human Development and Family Studies, College of Home science, Saifabad, Hyderabad, INDIA

Abstract: The present study examined 200 adolescents on achievement motivation, self-efficacy and goal directed behaviour in the twin cities of Hyderabad and secunderabad (Andhra Pradesh). The purpose of the study was to explore the achievement motivation, self-efficacy and goal directed behaviour of late adolescents in the age range from 18-20 years. The adolescents were selected from professional and non-professional institutions. Self structured general information questionnaire, modified scales and family environment scale (FES) were used to measure these constructs. The findings of the study revealed that non-professional adolescents were having high levels of achievement motivation, self-efficacy and goal directed behaviour than professional adolescents.

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Self-Concept in Context of Family type of the Adolescents

Singh Ritu, Chand Hemlata and Joshi Neha
Deptt. of Human Development and Family Studies, College of Home Science, G.B.P.U.A. and T., Pantnagar, Uttarakhand, INDIA

Abstract: The purpose of this study was to identify the relationship between family type and self-concept among adolescents from District Udham Singh Nagar and Pithoragarh of Uttarakhand. The sample for the present study comprised of randomly selected 319 IX standard students from 21 government intermediate schools of the two districts. Self-structured socio-demographic questionnaire and Self Concept Questionnaire by Sarashwat (1984) were administered for the present study. Mean values and standard error (sem) were calculated and Z-test was used to analyse the data. Results revealed that majority of the respondents, irrespective of their family type, had above average self concept. It was also seen that family type of the respondents' from both the districts was insignificantly related to their self concept.
Keywords: Nuclear family, Joint family, Adolescents, Self-concept.

ISCA-ISC-2012-10HS-41

Constraint of Family Structure in Youth Progress: A study of Urban Slum of Lucknow District, India

Shukla Arti and Singh Neetu
Department of Human Development & Family Studies, School for Home Science, BBAU, Lucknow, INDIA

Abstract: Family structures are defined in terms of their internal composition. The number of members that integrate each model and their relationship, the marital status of the parents & if there is the responsibility of rising of youth.This study was carried out the objective: "To mapout demographic characteristics, environmental behavior& socio-economic assessment among youth in the study". This study was conducted on 110 youth (15 to 24 years) age group of urban slum area of Lucknow city. The duration of the study was 11 months (July 2011 – May 2012). The approaches adopted for the study was multistage random sampling to cover the area of study (Ambedkar Nagar, Rajabazar, Aishbagh from Zone 2 and Sarojini Nagar 1st and 2nd, Kharika, Hind Nagar, Sharda Nagar From Zone 5). The tools in the present study were predesigned and pretested questionnaire for family level information..There were 59 male respondents and 51 female respondents participate in that educational achievement test therefore 6 family included.The highest number of intact

family in slum area of Lucknow District.Regarding to belongingness of family a majority of study subjects lived in intact family. Youth were involved in education and working field. Mostly youth involved in the working area so that they alive their own life neatly and cleanly.

Keywords: Family structure, family Size, age, sex, occupation, belongingness of the family.

ISCA-ISC-2012-10HS-42

Barrier free Environment for Differently Abled Students in Institutions Offering Higher Education

Tripathi Preeti and Kiran U.V.
S.H.Sc. BBAU, Lucknow, UP, INDIA

Abstract: The problem of disability is becoming more and more important all over the world. However, accessibility has been one of the most neglected issues in the disability sector. The estimated 70 million disabled persons in India remain confined to their homes, as attempts to travel, enter buildings, parks, shops, etc. can be unsafe and humiliating, reason behind the non-participation of affected masses into the general stream of life is the defective design. The present study is conducted with an objective to identify the differences in infrastructural facilities and student's level of satisfaction among inclusive and special institutions. The study was conducted among eight universities offering higher education existing in Lucknow city U.P., India to explore the infrastructural facilities for the differently abled students. To measure the level of satisfaction among students with regard to facilities for differently abled students, 30 students (15 Boys and 15 Girls) from each university were selected. A self-developed inventory to identify differences in infrastructural facilities was developed. Results revealed that special institutions were providing more facilities for differently abled students in comparison to inclusive institutions. It was found that 75.66 percent of the students belonging to Inclusive institutions had low level of satisfaction. Results may be used to explain suitable and barrier free environment in academic institutions for the convenience of differently abled students.

Keywords: Barrier free environment, inclusive institutions and special institutions, infrastructural facilities.

ISCA-ISC-2012-10HS-43

Occupational Stress of Child Labour in Chikankari Industry, India

Kumari Neelam and Kiran U.V.
Human Development and Family Studies, School for Home Science, BBAU, Lucknow-226025, UP, INDIA

Abstract: Child labour is a global phenomenon in the present state of developing countries. On account of poverty many parents, have to send their children to work to supplement their incomes and the income derived from the child labour is essential to sustain the family. Any work, whether manual or mental, which is under taken by a child who is below 14 years of age for monitory consideration is called child labour. Chikankari industry is the one of the many industries in which involvement of child labourers are popular, who suffer with biomechanical, physical and physiological stress. Hence the present study was conducted with an objective to study the level of the occupational stress among child labour in chikankari industry. The study was conducted in Lucknow district of Uttar Pradesh. Multistage random sampling technique was adopted in the present research. A sample of 120 child labour including 60 boys and 60 girls were selected from kasbas to study their occupational stress. A self developed questionnaire was used to collect the information. The result of the study revealed that children who goes to school and working in chikankari industry face high physical, physiological and biomechanical stress compared to those children who does not go to school and only work in chikankari industry, as a child labour.

Keywords: Biomechanical stress, child labour, occupational stress, physical stress,

ISCA-ISC-2012-10HS-44

Development of Value Added Bakery Product by Incorporation of Carrot Powder (*Daucuscarota*)

Singh Mukta, Maurya Pooja, and Misra Mani
Department of Home Science, Banaras Hindu University, Varanasi-221005, UP, INDIA

Abstract: Carrots are nutritional heroes; they store a goldmine of nutrients. They are excellent sources of antioxidants. Carrot (*Daucuscarota)* powder was incorporated at 10%, 20%, 30% into wheat flour to prepare high fiber bread, buns and biscuits. The bakery products developed were evaluated for physical characteristics and sensory attributes. The sensory evaluation of organoleptic attributes of samples of prepared carrot incorporated fermented bakery products in

different proportions showed rising score with 10% of incorporated carrot powder in bread and biscuits and 20% in bun. The content of crude fiber increased respectively by increased incorporation of carrot powder.

Keywords: Antioxidants, organoleptic, crude fiber.

ISCA-ISC-2012-10HS-45

Influence of Advertisements on the Purchases made for the Children in the Family

Paul Vashima and Jaiswal Neerja
Department of Family and Community Resource Management, Faculty of Family and Community Sciences,
The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, INDIA

Abstract: An attempt has been made in the present investigation to determine the influence of advertisements on the purchases made for the children in the family. The study was limited to the purchases made for the children in the family were limited to the ones belonging to the age group of 7 to11 years only. The study was also limited to the television advertisement meant for children for selected products telecasted during the last six months i.e. August 2010 to January 2011. The research design of the present study was descriptive in nature. The unit of enquiry was the mothers and their children, 144 each in number belonging to different families. The sample were selected through systematic random sampling from Gujarat Refinery English Medium School of Vadodara. The data were collected through interview method by the researcher. For the present study, the data was collected through interview schedule which dealt with the information on the influences governed purchases made for the child in the family by the entire family together, parents together, siblings together, father alone, mother alone and other relatives (grandparents, uncle, aunty etc.). The influence in the present study was based on the advertisements telecasted on television with a motive to enforce the viewers in buying and consuming it. The major findings of the present study highlighted that as compared to all other influences, the influence made by the "child alone" for the purchases made for them in the family was more. The influence second in number in ascending order for the purchases made for the children in the family was by "parents together". In case of the purchases of the products like chocolates and games the influence of "child alone" was greater as compared to other products purchased for the children in the family.

Keywords: Advertisements, family, influence, children and purchases.

ISCA-ISC-2012-10HS-46

Sensory Evaluation of Cornmeal Incorporated Snack Food

Misra Mani[1], Singh Mukta[1] and Nag Anamika[2]
[1]Department of Home Science, MMV, BHU Varanasi - 221 005, Lucknow, INDIA
[2]Department of Nutrition, I.T. College, Lucknow, INDIA

Abstract: Celiac disease also known as non-tropical sprue is a condition that damages the lining of the small intestine which is caused by reaction to gluten. Gluten which is a glycoprotein found in several cereals in majority. A gluten-free diet is used to treat patients suffering from celiac disease. There are many products which are used to treat the patients with this disease one such is cornmeal. Hence the present study is based to assess the acceptability of cornmeal incorporated indigenous snack *mathari.* Cornmeal is an excellentsource of vitamin C, E, B1, B5, folic acid, magnesium and phosphorus, amino acids and has a high content of fiber. The organoleptic tests of the snack revealed significant results.

Keywords: Celiac, gluten, cornmeal.

ISCA-ISC-2012-10HS-47

Awareness of HIV/Aids among Adolescent and Youth in Rural India

Negi Tara, Prabhat Shiwangi and Solanki Dhriti
College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, INDIA

Abstract: HIV has rapidly established itself throughout the world over the past three decades. The adolescent and youth cohort is one of the most vulnerable groups as far as risk of HIV/AIDS is concerned. In India, 35% of all reported HIV/AIDS cases are among the age group of 15-24 years, indicating the vulnerability of the younger population to the epidemic. Furthermore, the epidemic is moving from high-risk groups such as sex workers to the general population and from urban to rural populations. Of the estimated people living with HIV, 60% reside in rural areas. HIV affects the immune system and reduces the body's defenses to protect against various infectious diseases and cancer. Treatment is available to delay the death of persons suffering from the disease; however, there is no cure. Thus it becomes necessary to educate young people so that they can protect themselves from getting infected. Various government and non-government organizations over the world have undertaken programmes to raise awareness among people regarding HIV/AIDS. To stop the spread of HIV/AIDS in India, the Tenth Five Year Plan (2002-2007) was developed with targets set to achieve

90% coverage of schools and colleges through education programmes and 80% awareness among the general population in rural areas. Assessment of awareness levels in adolescents is important because it helps to determine the impact of previous awareness. Since awareness is the only key to the prevention of HIV/AIDS. Awareness, which can lead to attitudinal and behavioural change in individual and society towards safe sexual and other health practices, is the only weapon today against HIV/AIDS especially among the low socio economic, illiterate people and youth of the community using all methods of mass media and intensive information, education and communication (IEC) activities by use of local folk media.

Keywords: Awareness, HIV/AIDS, behavioural changes, communication activities.

ISCA-ISC-2012-10HS-48

Stress in Adolescents and its Management

Prabhat Shiwangi[1] and Negi Tara[2]
College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, INDIA

Abstract: Adolescence is defined as the period of stress and storm and therefore stress becomes the part of their normal life. Most teens experience stress when they perceive a situation as dangerous, difficult, or painful and they do not have the resources to cope. Some sources of stress for teens might include, school demands and frustrations, negative thoughts and feelings about themselves, changes in their bodies, problems with friends and/or peers at school, unsafe living environment/neighborhood, separation or divorce of parents, chronic illness or severe problems in the family, death of a loved one, moving or changing schools, taking on too many activities or having too high expectations, family financial problems and hence they become overloaded with stress. However, for many adolescent, overscheduled lives, chaotic home situations, school pressures, and social concerns results in stress. Without appropriate, positive stress management skills, adolescent can become easily overwhelmed. Some may even substitute unhealthy coping skills, such as drug or alcohol use, or may begin to show signs of depression. Inadequately managed stress can lead to anxiety, withdrawal, aggression, physical illness, or poor coping skills such as drug and/or alcohol use. Teens can decrease stress with the different behaviors and techniques like Exercise and eat regularly, by avoiding excess caffeine intake which can increase feelings of anxiety and agitation, Avoid illegal drugs, alcohol and tobacco and by developing assertiveness training skills. Activities like listening to music, talking to friends, drawing, writing and building network of friends can help in coping in a positive way. If a teen talks about or shows signs of being overly stressed, a consultation with a child and adolescent psychiatrist or qualified mental health professional might be helpful. It is therefore recommended that there should be provision of educational packages both for teachers and students, training programmes and workshops should be conducted at school and college level and special attention should be given towards co-curricular activities.

Keywords: Stress management, adolescence, stressors

ISCA-ISC-2012-10HS-49

Challenge of bringing Organic Cotton into Mainstream Clothing in India

Lali Priya
Amity School of Fashion Technology, Amity University, Lucknow Campus, INDIA

Abstract: The requisite of the day urgently is the environment in which we are corporeal and the generations after generation have to sentient. To this we can also contribute by organic farming which is the best conceivablealternative to contribute to greener environment at grass root level. This is also indispensable because the humanoid health quotient is under excessive danger. Cotton is the most conventional and best clothing. The world has evolved a lot in the agri-business and production of cotton. India leads in the production of cotton. The extensively used fabric in India and around the world is "COTTON" but not the Organic cotton. The farming for organic cotton with conventional method involves a great amount of risk. Efforts to tackle the problems inherent in conventional cotton production have focused on ways of reducing pesticide resistance in insects and minimizing the environmental impacts of chemicals rather than on eliminating them through alternative production systems.The problem does not end up with merely the production of cotton. The challenge is to establish organic cotton into the mainstream clothing. The "COST" is the focalissue, which restricts this fiber only to a special class or creamy layer. The fiber to fabric costing-adding up all makes the final ensemble of per diempractice of elevatedexpenses which is quite unapproachable for middle class, thus reaching only few. Second to this is the concept of health menaces by inorganic or synthetically made up fabrics. The prolong effects of such fabrics are moreover never ever given a thought by many in their entire life in India (especially). We deliberate so many times the environmental perilsbut to this debate we seldom add up the hazards of wearing inorganically grown fabrics.The manufacturing units, designers and the wearers all are benefitted by the Organic Cotton not only in the health but also in style. The panache is completely awesome and as according to the youth. Organic cotton production and processing is still mainly at the experimental level. It currently occupies a niche market, but there are signs that it is

moving into the mass market, with large companies taking an interest such as Coop in Switzerland, and Nike and Levi Strauss in the USA (from **Organic cotton: from field to final product by Dorothy Myers and Sue Solton**). India is all set to be a world leader in the production of organic cotton. "The organic farming movement is gaining ground in India. We expect that the country will be the leader in '06-07, with record production of organic cotton," says Simon Ferrigno, director of the farm development programme of Organic Exchange, an NGO specialising in organic agriculture for natural fibres like cotton.(Economic Times, November 13, 2006ArunIyer). The designers need to come forward and join the movement of Organic Cotton and bring it into mainstream clothing in India. Youngsters are required who can provide new dimensions to Indian clothing by giving a style statement with organic cotton proving the world that India not only eats organic but also wears ORGANIC…..!!!

Keywords: Environmental perils, elevated expenses, per diem practice, production, panache, dimensions.

ISCA-ISC-2012-10HS-50

Curiosity among Children of Primary Section across Gender

Devi Sarla and Agarwal Shalini
School for Home Science, Babasaheb Bhimrao Ambedkar University, Lucknow-226025, INDIA

Abstract: Curiosity is an emotion related to natural inquisitive behavior such as exploration, investigation and learning, evident by observation in human and many animal species. Human beings are most curious species on the earth and childhood is the stage where curiosity among individual is at its peak. Curiosity is often described as natural and notable characteristic of young children. The main objective was to study curiosity among primary level children across gender. The research design was descriptive in nature; Sample was collected from south city and Rajanikhand area of Lucknow city using purposive random sampling technique. The total sample size was 120. Findings of the study revealed that 95 percent respondents studying in Lucknow Public School and 85 percent respondents studying in Shiva Jee Public School had high curiosity level. Chi-square value was found significant when calculated for frequency of curiosity level with gender.

Keywords: Curiosity level, primary section children, gender.

ISCA-ISC-2012-10HS-51

Natural Dye Powder: An Easy Technique for Eco-Dyeing

Yadav Saroj, Rose Neelam M., Singh Saroj S. Jeet and Khambra Krishna
Dept. of Textile and Apparel Designing, I.C. College of Home Science, CCS Haryana Agri. Uni. , Hisar, Haryana, INDIA

Abstract: A dye is a coloured substance that has an affinity to the substance to which it is being applied the clothing were dyed with natural dye substrates. The major problem faced for survival of natural dyes were lack of availability of standard shade cards and reproducibility of shades, as a result the synthetic dyes captured the market. Because clothing is in constant contact with our skin, the chemicals used in dyeing are absorbed into our skin through the pores and these create various skin problems. The alternative to the problem is natural dyes which are more aesthetic and safe for dyers as well as wearers. Keeping in view the importance of eco textiles and their demand in the national and international market and to make dyeing less time consuming and to overcome the problem of shade variation the present investigation was carried out to prepare the ready to use dye powder for dyeing of silk and silk blend and test its colour fastness. Three dye sources viz, bhringraj leaves, kachnar bark and rein wardtia flowers were used. Dye powder was prepared from the selected dye materials by extracting dye in alkaline medium and precipitation of dye with nitric acid. Results of the study revealed that powder of bhringraj leaves dye was formed with precipitation method, kachnar bark dye's powder was formed by both precipitation as well as alkaline method. Powder of rein wardtia flowers dye was formed by precipitation method only. The colour value of samples dyed with powdered dye of bhringraj leaves were lighter in shade as compared to extract dyed samples, whereas colour value of samples dyed with powder dye of kachnar bark and rein wardtia flowers were same as that of extract dyed samples. Fastness grades of powder dyed samples tested at different time intervals against washing and sunlight were found at par with extract dyed samples.

Keywords: Natural dyes, dye powder, eco dyeing, silk, silk blend, colour value, fastness properties.

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Eco – Textiles: Path to Sustainable Development

Kumari Poonam, Singh Saroj S. Jeet and Rose Neelam M.
Dept. of Textile and Apparel Designing, I.C.College of Home Science, CCS Haryana Agriculture University, Hisar, HR, INDIA

Abstract: Textile industry is considered as the most ecologically harmful industry in the world. The eco-problems in textile industry occur during some production processes and are carried forward right to the finished product. In the production process like bleaching and then dyeing, the subsequent fabric make toxic substances that swell into our

ecosystem. During the production process controlling pollution is as vital as making a product free from the toxic effect. The utilization of rayon for clothing has added to the fast depleting forests and opened the door to the development in natural sustainable fibres like organic Cotton, Hemp and Bamboo fibres. Petroleum-based products are harmful to the environment. In order to safeguard our environment from these effects, an integrated pollution control approach is needed. Luckily there is an availability of more substitutes. Textile industry has a heavy impact on the environment as the current practices are unsustainable; and companies, environmentalist and consumers are looking at strategies for reducing the textile carbon footprint. So, there is need to produce the textile materials which are eco-friendly through using different processes like enzyme technology, plasma technology, super critical carbon-di-oxide dyeing or foam technology etc.

Keywords: Textile industry, eco-textiles, sustainable process and toxic substances.

ISCA-ISC-2012-10HS-53

Colourfastness Properties of Tesu Dyed Silk

Makkar Priya, Saroj S. Jeet Singh, and Rose Neelam M.
Department of Textile and Apparel Designing, COHS, CCSHAU, Hisar-125001, Haryana, INDIA

Abstract: Colour fastness of fabric is very important aspect as end use of fabrics depends on this property. A study was conducted to investigate the colour fastness properties of silk fabric dyed with *Tesu* flower dye. The dye was extracted with fermentation technique and silk fabric was dyed using optimized conditions. Different natural mordants were used to study the effect on colourfastness. The dyed fabric samples were evaluated for colour fastness to washing, rubbing, light and perspiration using the methods prescribed by the Bureau of Indian Standards. On the basis of different shades obtained four natural mordants viz., *amla fruit*, *pomegranate* rind, mango bark and *mehandi* leaves were selected. The results revealed that 10 and 25 percent concentration of each mordant was selected for light and dark shades. Simultaneous and post mordanting were found to be better than pre mordanting method. It may be due to the reason that simultaneous and post mordanting helped in better fixation of dye and superfluous dye material might have stripped out. The washing fastness grades for colour change ranged from 4-5, whereas from 4-4/5 for colour staining with all the four mordants. The light fastness grades for all the samples ranged from 4-4/5 grades for colour change as well as colour staining. The perspiration fastness grades for colour change as well as colour staining ranged between 3/4-4/5 for both acidic and alkaline perspiration for all the samples. The rubbing fastness grades for colour change ranged between 4-4/5 for both dry and wet rubbing. The grades for colour staining were also between 4 and 4/5 for dry and wet rubbing for all the conditions. On the basis of overall fastness rating it was concluded that the colour fastness of the dyed samples improved considerably after mordanting.

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Job Satisfaction of Women Officers of KSDA

Kurbett Prabhavati and Badiger Chhaya A.
Dept. of Extension and Communication Mgt, College of Rural Home Sci., Uni. of Agri. Sciences, Dharwad, Karnataka, INDIA

Abstract: The women officers of Karnataka State Department of Agriculture (KSDA) are the animators, promoters and facilitators for rural women in the food production of the country. A Women Officers of KSDA passed out from Agricultural University to ascertain job satisfaction. Thus present study was restricted to 60 Women Officers of KSDA, selected from 4 districts i.e., Belgaum, Dharwad, Gadag and Haveri. Women Officers had job satisfaction with reference to job security, working conditions, recognition, opportunity for personal growth and promotion, supervision, co-workers and number of working hours. It was very interesting to note that Home Science Women Officer revealed high job satisfaction index (76.02%) in comparison with Agriculture Women Officers (68.64%). Home Science Women Officers age, education experience and training were significantly correlated but Agriculture Women Officers all variables found non significant with job satisfaction. Results from multiple regression analysis showed that age, education and training were affecting the job satisfaction of Home Science Women Officers but in case of agriculture Women Officers all variables were not affecting the job involvement. Problems perceived by Women Officers were 'dominance of higher officers', 'misunderstanding and non-cooperation', 'lack of technical knowledge of subordinates', 'difficulties of family like care of children'.

Keywords: Job satisfaction, women officers and problems.

ISCA-ISC-2012-10HS-55

Revival of Gujarat Embroidery Motifs through Digitization

Byadgi Shameembanu A., Naik Shailaja D. and Vastrad Jyoti V.
Dept. of Textiles and Apparel Designing, College of Rural Home Science, Uni. of Agri.Sciences, Dharwad, Karnataka, INDIA

Abstract: Embroidery is a beautiful thread work on a variety of fabrics which makes it more attractive and appear gorgeous. The embroidery of *Kutch* and *Kathiawar* of Gujarat is one of the richest in design and most varied in stitches among the Indian folklore. Though the taste for hand embroidered articles in the modern society is in increasing demand due to the fast changing fashions and their gracious look, the traditional embroideries need to be popularized and developed into an industrial craft. Seventeen conventional motifs commonly used in Gujarat embroidery comprising of six buttas for the body, three borders for the pallav and eight main motifs above the pallav were planned and digitized using GC Kala – 2004 with interface Paint Shop Pro (PSP) software. In total five Dharwad polycotton saris were woven of which one was the hand embroidered (control) and another four were swivel patterned saris produced on handloom with Jacquard shedding mechanism. Thirty each working women and housewives of Dharwad town were interviewed to assess the extent of acceptance for the swivel pattern saris. More than fifty per cent of the housewives mentioned that most of the digitized patterns of Gujarat embroidery resembled wholly with the respective hand embroidered motifs, however, they preferred digitized patterns. The respondents in general opined that the swivel pattern saris were excellent since the designs were very attractive, pleasant, eye catching, unique and first of its kind.

Keywords: Conventional embroidery, digitization, jacquard shedding mechanism, Motifs, Polycotton saris, Swivel patterns.

ISCA-ISC-2012-10HS-56

Quality of Life of Elderly Men and Women in Institutional and Non-institutional Settings in Urban Bangalore District, India

Lakshmi Devi S. and Roopa K.S.
Dept of Human Development and Research Center, Smt VHD Central Institute of Home Sciences, Seshadri Road, Bangalore University, Bangalore, Karnataka, INDIA.

Abstract: The aim of the present investigation attempt to study the quality of life (QoL) of the elderly men and women living in institutions and non-institutional settings in urban Bangalore District. The study was conducted on a purposive random sample of 800 elderly in the age ranging from 65-76 years of which 200 men and 200 women in institutional and 200 men 200 women living in non-institutional settings. WHO-QoL (100) 1996 field version was used to measure the QoL. The questionnaire was administered, data was collected and tabulated. The data obtained was subjected to statistical analysis using mean, c2 test and Z test. The result reveled that elderly living in institutional setting showed high level of QoL than non-institutional setting. The result also revealed that there is a significant difference between the institutional and non-institutional elderly men and women in the area of physical, psychological, level of independence, social relationship and environment domains of QoL.

ISCA-ISC-2012-10HS-57

Study of Sanitation Practices Followed by Home Makers Residing in Uttaranchal, India: Today's Concern

Agarwal Shalini
School for Home Sciences, BBAU, Lucknow, INDIA

Abstract: Safe water is one of the most important felt needs in developing countries in the twenty first century. Women are usually the ones engaged in household subsistence activities, the collection of water, fodder, herbs for medicinal purposes and wood for fuel, construction, tools, baskets and other materials. Women are also generally involved in the management, maintenance and conservation of these resources for collective and community consumption. Sanitation involves excreta disposal, water supply, hygiene behaviors, drainage, solid waste, and health care waste. The key to providing microbiologically safe drinking water lies in understanding the various mechanisms by which water gets contaminated, and formulating interventions at critical points to decrease and prevent contamination of drinking water. Lack of adequate water management, affect the health of whole families, and make it very difficult to perform daily household maintenance tasks. Women are potential agents of change in hygiene education and children are the most vulnerable victims of poor sanitation, therefore the present study was carried out to study the sanitation practices followed by homemakers related to management of water at household level. The study was conducted in the bhabar area of Uttaranchal. The research design for the present study was descriptive in nature and sample size for the present study was

90 respondents. A self constructed interview schedule along with the sanitation scale was used to collect the data. Results of the study showed that most of the respondents followed fair sanitation practices and positive correlation was found between sanitation practices followed by respondents and health of family members.
Keywords- sanitation practices, hygiene, safe drinking water, home makers.

ISCA-ISC-2012-10HS-58

Child Rearing Practices among Mothers Residing in Slum Areas of Varanasi District, India

Rajpoot Sadhana Singh[1] and Gupta Kalpna[2]
[1]Research Scholar, Department of Home Science, M.M.V., B.H.U., Varanasi, INDIA
[2]Supervisor, Department of Home Science, M.M.V., B.H.U., Varanasi, INDIA

Abstract: Children of any county are its valuable assets; they are part of potential human resource that can contribute in the development of the country. Parents play a distinctive role in the development and nurturing of child for this the present study was done to examine the awareness level of parents regarding health, hygiene nutrition and sanitation of their children as well as to identify the child rearing practices. Multistage stratified random sampling technique was used to select samples, 500 mothers were interviewed with the help of interview schedule at their home, after the selection of slum areas. Finding of the study shows that they were lacking in above aspects. It was also found that awareness level and child rearing practices was better among educated mothers in comparison to illiterate mothers. Education was given with the help of teaching material (booklet) to those mothers who were lacking in knowledge and significant changes were observed. It was concluded that effective education to parents can alter their awareness level for better living of family, community and to nation.

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Mesta Fibre: A Technical Textile

R.K Dhanalaxmi[1]and Jyoti V. Vastrad[2]
Department of Textile and Apparel designing, College of Rural Home Science, University of Agricultural Sciences, Dharwad, Karnataka, INDIA

Abstract: Mesta fibres variety AS73 CP 560 was extracted from stalks harvested at two different stages of plant growth using urea treatment and different steeping methods. Scoured, bleached and dyed mesta fibres were assessed for quality *viz*., length, fineness, strength and elongation, colour strength, colour fastness and its microstructure. Spinnability of the fibres in different blend proportions with cotton was studied and the yarn parameters were assessed. Results revealed that longitudinal structure of mesta fibres is striated, with nodes that are more clear and developed at physiological maturity stage. Cross section depicts the existence of a number of fibrils. Presence of lignin in the physiological matured stalks was noticed. There was a successive reduction of fibre quality on wet processing treatments. The physical characteristics of 80:20 cotton/mesta blended yarn were better than the 100 per cent organic cotton and 60:40 cotton/ mesta blended yarns. Moreover, mesta fibres have added strength to cotton yarn and simultaneously decreased the elongation making the blend suitable for knits, curtains & draperies and other household textiles including table & kitchen linen. Expediting the usage of such minor fibres not only saves natural fibres for multiple applications but also ensures the availability of eco-friendly goods.
Keywords: Mesta fibre, *Hibiscus sabdariffa*, Harvesting, Urea, Steeping, Properties, Organic cotton, Jute Batching Oil (JBO), Blending, Physical characteristics.

ISCA-ISC-2012-10HS-60

Quilt (*kaudi*): A Traditional Technology

Sujata, Jyoti V. Vastrad and Rajkumari Dhanalaxmi Devi
Department of Textile and Apparel designing, Rural Home Science College, Uni, of Agricultural Sciences, Dharwad, Karnataka, INDIA

Abstract: Investigation on "Renaissance of quilt (*Kaudi*) making and value addition" was envisaged to document the history and techniques involved in quilting, to explore the possibility of producing value added articles using quilting technique and to study the economic viability and consumer acceptability. Quilt (*Kaudi*) making an age old technology that was adopted and continued by the *Gondhali* women to earn livelihood. Block, mosaic and crazy patchworks were used in combination with quilting technique to design different value added utility articles viz., baby quilts, table runners, table mats and magazine holders. Patchwork enhanced and retained the traditionality of quilt making. Thirty each rural and urban consumers expressed their acceptability for patchwork quilt value added articles. Both rural and urban consumers

highly accepted mosaic quilt value added articles because of their striking three dimensional effects, pleasant colour combinations and fibre content. All the block quilt value added products were ranked second by the consumers mainly because of the standing star motif that was appealing and could be functionally used for educating children. The bold and bright coloured blocks in patchwork pattern could be used to extend the concept of size and colour to pre-school children using indigenous resources.

Keywords : Quilt (*Kaudi*), History and techniques, *Gondhali* women, Articles, Value addition, Rural and Urban consumers.

ISCA-ISC-2012-10HS-61

Leadership Effectiveness of Supervisors of ICDS and their Contributions to Rural Women

Pratibha A. Havanur[1] and Chhaya A. Badiger[2]
Dept. of Extension and Communication Management, College of Rural Home Science, University of Agricultural Sciences, Dharwad, Karnataka, INDIA

Abstract: Supervisor provides guidance and leadership for the successful implementation of the objectives. Therefore purposively four districts were selected for the present investigation namely; Belgaum, Dharwad, Gadag and Haveri. Ex-post facto with 60 Anganawadi Supervisors of ICDS was designed. Further 120 Anganawadi workers and 120 rural women were selected to know the contribution of Anganawadi Supervisors to the beneficiaries. The main findings revealed that there was significant difference between Home Science and Non-Home Science Supervisors with regard to Leadership Effectiveness. Overall index of Leadership effectiveness of Home Science Supervisors was 90.39 per cent while Non-Home Science Supervisors was 87.17 per cent. For leadership effectiveness, training was significant for Home Science and Non-Home Science Supervisors. Cent percent of the Anganawadi workers opined that 'Supervisor visits Anganawadi unexpectedly', 'checks all the registers', 'provides all the supplementary feeding material'. Cent percent of the rural women opined that 'Supervisor gave necessary information', 'conducted training programmes on EDP' and 'visited malnourished and grade children houses'. Problems perceived by Supervisors were 'higher officers inform them at the end moment', 'non-cooperation with the colleagues', irregularity in attendance of subordinates' and 'cannot take care of children and elderly person at home'.

Keywords : Leadership effectiveness, ICDS, Supervisors, contributions, problems.

ISCA-ISC-2012-10HS-62

Studies on Hypoglycemic and Hypocholesterolemic effects of Mulberry leaves

Johri Sonali[1], Chauhan Komal[2] and Chauhan Geeta[1]*
[1]Division of Livestock Products Technology, Indian Veterinary Research Institute, Izatnagar, Bareilly, UP, INDIA
[2]Department of Foods and Nutrition, Banasthali Vidyapeeth, Banasthali, Raj, INDIA

Abstract: Optimum nutrition is vital for building strong body and mind, promoting health, vigor and vitality. We need to be conscious about the food we are eating. There are many foodstuffs whose excessive intake is detrimental to health. Food can be regarded as functional foods if they can satisfactorily demonstrate to contain bioactive principles that reduce the risk of diseases or act positively in promoting health. The ancient Indian system of medicine is bound with information regarding plant products having medicinal properties. Mulberry leaf is an important medicinal plant and its leaves have good nutritive value. Diabetes mellitus is a chronic metabolic disorder and it has increased in India to a large. There are various plants which have hypoglycemic effects, mulberry is one of them. The objective of the present study was to study the effect of mulberry leaves on type 2 diabetes. Selection of diabetic subjects was done and their nutritional status was assessed by conducting anthropometry to measure height and weight and computing BMI. They were evaluated for biochemical profile in terms of blood sugar and lipid profile. Two products namely Mathri and Biscuits were developed with the incorporation of mulberry leaves at different levels of 2.5%, 5% and 7%. Sensory evaluations revealed that the products with 2.5% incorporation were more acceptable than higher levels. Supplementation of these products was done to all the subjects for three months. After three months supplementation, subjects were again evaluated for anthropometry and biochemical parameters. The analysis of results indicated that mulberry leaves have the lowering effects on blood cholesterol, fasting blood sugar, blood pressure, and BMI. The study infers that mulberry leaves may be used as a general health enhancer. It has hypocholesterolemic and hypoglycemic effects. Further, no side effects were observed on feeding for long duration.

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Effect of Laundering on Antimicrobial Finish of Cotton

Hooda S. and Khambra K.
Deptt. of Textile and Apparel Designing , I.C. College of Home Science, CCS Haryana Agricultural University, Hisar, INDIA

Abstract: Consumers' attitude towards hygiene and active lifestyle has created a rapidly increasing market for a wide range of antimicrobial textiles, which in turn has stimulated intensive research and development. In the plenty of various finishes, importance is given to antimicrobial finish since people take much care about health and hygiene. The antimicrobial finish for a textile material is an agent that destroys or inhibits the growth of micro-organism like bacteria, fungi, yeast and algae (Cho and Cho 1997). Natural fibres are more susceptible to bacterial attack than synthetic fibres due to their porous and hydrophilic nature. The structure of natural fibers retains water and oxygen along with nutrients, in that way offering optimal environment for microbial growth. On the other hand, direct contact with human body supplies warmth, humidity and nutrients, i.e. provides a perfect environment and optimal conditions for bacterial growth. Micro-organism proliferation can cause malodours, stains and damage of mechanical properties of the component fibres that could cause a product to be less effective in its intended use. Additionally, may promote skin contamination, inflammation in sensitive people (Haug, 2006). As a result, the number of bio-functional textiles with an antimicrobial activity has increased considerably over the last few years. Some of the herbal compounds obtained from plants are well known for their antibacterial and anti fungal activity. These plants and tree products are applied directly on skin or wounds as paste. These natural products are abundantly available in nature and are widely distributed. They are cheap and not processed and can be used as raw materials for required applications. These plant products are non irritant to skin and non toxic. The stem, bark, leaf and root of the plants and trees can be used for special application. Neem leaves, seeds and bark possess a wide spectrum of antibacterial action against Gram-negative and Gram-positive micro-organisms, including *M. tuberculosis* and streptomycin resistant strains (Chopra, 1952). Antimicrobial effects of neem extract have been demonstrated against *Streptococcus mutans* and *S. faecalis* (Almas, 1999). At present, little has been reported of its use in textiles as an antimicrobial agent. Few studies concerning application of neem extracts to cotton and cotton/polyester blends have been reported (Joshi *et.al* 2007, 2009 and Vaideki *et.al* 2009). The present research work is aimed at developing an eco-friendly antimicrobial finish from neem leaves for textile application. The neem leaves extract is applied on cotton fabric and a study is conducted to assess the antimicrobial activity of the finished samples.

ISCA-ISC-2012-10HS-64

Effect of Banyan Leaves Dye on Physical Properties of Cotton

Rose Neelam M., Saroj S. Jeet Singh, S. Khanna and Saroj Yadav
Deptt. of Textile and Apparel Designing, I.C. College of Home Sciences, CCS Haryana Agri. Uni., Hisar, Haryana, INDIA

Abstract: All over the world, for protection of environment regulations are becoming stricter and forcing a shift towards less polluting or non-polluting areas of technological development. Although, attention has mostly been paid to modify synthetic dyeing processes but the need to realize the importance and to explore the technology of natural dyes is more urgent and sustaining. Though in the present era the process of dyeing with natural dyes is in progress, but a little attention is being paid to study the effect of dyeing on the physical properties as end use of fabrics depends on these properties. Here an attempt has been made to study the effect of dyeing on the physical properties of cotton. A study was conducted to to investigate the effect of banyan (Ficus bengalensis) leaves dye on physical properties of cotton. The fabric was dyed with banyan leaves dye and mordanted with copper sulphate, ferrous sulphate, Eucalyptus and Indian gooseberry. The results of the study revealed that the general appearance in terms of lusture and texture of dyed fabric was improved after mordanting. Fabric thickness, weight and count of dyed samples increased after mordanting. Flexural rigidity of all the dyed samples increased except Indian gooseberry mordanted sample. Tensile strength of all the samples increased except the ferrous sulphate mordanted sample, which decreased in weft direction. Elongation of all the mordanted samples increased except the ferrous sulphate mordanted sample in warp direction. If cotton a versatile natural fibre dyed with natural eco-dyes can create an excellent opportunities for garment industries especially for export and for hobby groups, designers, traditional dyers, printers etc.

ISCA-ISC-2012-10HS-65

Role of Women in 21st Century

Joglekar Abhaya R.[1] and Agrawal Abha[2]
[1]Home Science, Govt. GNA P.G. College, Bhatapara, CG, INDIA
[2]Pt. Ravishankar Shukla University, Raipur, CG, INDIA

Abstract: 21st Century is an era of Science and technology. In the field of science and technology we can see constant growth. There is advancement in every field. We have developed advanced missiles, nuclear power, machines and techniques. The role of women has also changed in the 21st century. They are no more restricted to cooking, washing clothes, doing household works and looking after their children and family. Today women is leading in every field and society whether it be sports, commerce and industry, education, health, politics, technology, navy, army, agriculture. Due to advancement in the field of science and technology and the active involvement of women in it we have been able to overcome the evils of our society which were prevalent in our religion, caste and territory and were danger for the world's peace. Now people are making maximum utilization of available resources for their well beings and for the generations to come. We are now a developing country in which women is self dependent, good manager and is making a balance between his family responsibilities and outside world and has become an earning member of the family and a responsible citizen of the society.

ISCA-ISC-2012-10HS-66

Role of Radio Frequency Identification (RFID) in Textiles and Apparels

Punam Rani and Neelam Pruthi
Department of Textile and Apparel Designing, I.C. College of Home Science CCS Haryana Agricultural University, Hisar-125004 Haryana, INDIA

Abstract: Radio frequency identification abbreviated as RFID is an automatic identification technology whereby digital data encoded in an RFID tag or "Smart label" is captured by a reader using radio waves. It has been in use for more than 50 years. It was devised during the Second World War when radio frequency transponders were first installed on aircraft in order to identify the planes and state attackers. In the 70s, RFID tracking technology was implemented in the US Nuclear Weapons Laboratory at Los Alamos, and in early 80s initial applications were used to identify cattle and to track railway cars. RFID consists of several components such as tags, tag readers, edge servers, middleware, and application software. Among these the three important components are transponder named as RFID tag, transceiver known as RFID reader and software for data processing. An RFID tag is a small object that contains Electronic Product Code (EPC) contains information related to the product i.e. the name of the company, batch and year of manufacturing, price, etc. and can be attached to or embedded into a product, animal, or person. It consists of a tiny chip where the data is stored and an antenna to enable it to receive and respond to radio-frequency queries from an RFID transceiver. The RFID play an important role in Textile and Apparel sector. It can be used in the fields of Clothing production, product tracking system, tracking of labour movement, warehouse production and quality control, fabric lot storage and retrieval,garment washing and laundering, merchandise levelling across store, easy product accessibility in retail stores, exchange goods inventory control, re-stocking alerts and replenishment, customer-specific shopping reminders and promotions, radio frequency drying etc. RFID systems are advantageous because of their non-contact, non-line-of-sight property. Tags can be read through a variety of substances such as snow, ice, chemicals and other visually and environmentally challenging conditions.
Keywords: Radio frequency identification, components, textile sector and apparel sector.

ISCA-ISC-2012-10HS-67

Vermiculture: Eco-Friendly Measure to Reduce Household Pollution through Standard Method of Garbage Disposal

Singh Pratiksha and Singhvi Ritu
Deptt. of Family Resource Management, College of Home Science, MPUAT, Udaipur, INDIA

Abstract: Domestic solid waste disposal is a matter of every day discussion at local and global level yet the problem evades solution. The technique of vermiculture, if utilized by every homemaker would certainly reduce the serious envirnmental and health problem the world over. There is an urgent need to develop proper waste management technique for recycling of organic waste created from kitchen, farms and water bodies. It is estimated that in cities a human being creates about 0.4kg (salvi, 1997) waste per day. Thus by year 2000, when there will create city refuse of about 44 (0.4 kg X300m.X 365 days) million per year. The present practice is just a way to remove dispol off garbages , no matter where

it put off, but actually a standard method of vermicomposting technique is required there. The process of vermicompostin g requires the individual to collect the kitchen and garden waste in a container rather than disposing it. So, the vermiculture is an environmentally beneficial technique and it requires little investment of time and some inexpensive materials.

ISCA-ISC-2012-10HS-68

Workplace Health of the Workers in Small Scale Petha Making Enterprise

Gahlot Neha and Mehta Manju
Department Of Family Resource Management, I.C. College of Home Science, CCSHAU, Hisar, 125004, Haryana, INDIA

Abstract: Small-medium enterprises (SMEs) representing unorganized sector in India are playing a vital role to stimulate economic development through income generation. The small-medium processing sector especially fruit and vegetable processing sector has been traditionally viewed as the major source of employment generation for women workers because of low skill requirement of this sector. Every worker spends at least 8 hours a day in the workplace. Therefore, work environment should be safe and healthy. Occupational safety and health (OSH) is concerned with safety and health of workers in relation to work and the working environment. OSH at work in SMEs present a particular challenge as the majority of workforce is employed in SMEs and resources to protect and promote health of this workforce are much lesser. The objective of the study was to analyze the occupational safety and health of the workers in Petha making industry. The study was conducted on 20 male workers (who were physically fit) in a small scale Petha making enterprise in Hisar city Haryana. Results revealed that the illumination level at the workplace was300 lux and 180 lux at cutting and pricking section which is very less with the standard values. Co_2 level was 718(ppm) at processing section which was too high as compare to the recommended value. Results showed that 75% workers suffering from falls and slips, 45% were suffering from cuts 65% from electric shock. As a result of the hazards and lack of attention given to safety and health, work related accidents and MSDs are very common. These hazards decrease the productivity of the enterprises and leads to occupational accidents and adverse health effects on the workers health. The workers were not aware about any government rules and regulations and accidents and hazards were not documented there. A safe and healthy work environment could be achieved only when efforts are directed towards identifying occupational health hazards of workers.
Keywords: Processing industry, occupational health, hazards.

ISCA-ISC-2012-11MatS-01

Lignocellulosic Material's Mass Flux Rate at the Moment of Ignition

Chrebet T., Martinka J. and Balog K.
Slovak Uni. of Tech. in Bratislava, Faculty of Materials Science and Technology in Trnava, Paulínska, Trnava, SLOVAKIA

Abstract The contribution deals with monitoring of lignocellulosic material's mass loss rate at the moment of ignition by external ignition sources. Experiment was performed in a electrically heated hot-air furnace according to ISO 871 standard (Setchkin furnace) in conjunction with precision scales. Like an ignition source was used kanthal wire. The mass loss rate in dependance of time was monitored under isothermal conditions. For a given temperature were used speeds of air-flow in the oven 30, 20, 10, 0 $mm.s^{-1}$.
Keywords: Critical mass flux rate, Air-flow, Lignocellulosic material, Time to ignition, Setchkin furnace.

ISCA-ISC-2012-11MatS-02

Thermoluminescence Study of Based Materials of Ceramic Tiles

Mandavia H.C.[1], Murthy K.V.R. [2], Purohit R.U.[3] and Sayani A.N.[4]
[1]Shri M.M. Science College, Morbi, Gujarat, INDIA
[2]Display Materials Laboratory, Applied Physics Department, Faculty of Technology, M.S. University, Baroda, GJ, INDIA
[3]Joint Director, Commissioner of Higher Education, Gujarat State, Gandhi Agar, INDIA
[4]College of fisheries, Veraval, Gujarat, INDIA

Abstract: Many flooring materials most of them are in natural form are used to manufacture floor tiles for household flooring purpose. The peoples demand for variety of flooring material Leeds to develop various types of ceramic tiles. In India ceramic industry is fast growing one, more then 500 units of manufacturing ceramic tiles, vitrified tiles and sanitary ware, situated around Morbi, Rajkot, Gujarat, India. Many natural minerals are used as the raw materials required for the manufacturing ceramic ware. The following minerals are used to manufacturing the ceramic tiles i.e. Quartz, Feldspar, Zircon, Talc, Grog, Alumina oxide, etc. Most of the minerals are from Indian mines of Gujarat and Rajasthan states, some of are imported from Russian sub continent. The present paper reports the thermoluminescence characteristics of Feldspar, Alumina and Quartz minerals collected from the ceramic tiles manufacturing unit, Morbi. The as received minerals TL was recorded (NTL), and annealed and quenched from 400°C followed by 15Gy beta dose given from Sr-90 beta source TL was recorded and the comparative TL (Thermoluminescencs Study) study of above materials are presented and it represent some special characteristics of the materials.
Keyword: NTL – Natural Thermoluminescence, TL- Thermoluminescence.

ISCA-ISC-2012-11MatS-03

Synthesis of Conducting Polyaniline/Expanded Graphite Nanocomposites as Supercapacitor Material

Konwer Surajit[1] and Dolui Swapan K.[2]
[1]Department of Chemistry, Gargaon College, Assam, INDIA
[2]Department of Chemical Sciences, Tezpur University, Napaam, Assam, INDIA

Abstract: An electrode material based on polyaniline (PA) with expanded graphite (EG) was synthesized via in-situ polymerization of aniline in the presence of various proportions (5% and 10%, wt/v ratio) of EG. The samples were characterized by FTIR, SEM, TGA, XRD and electrical conductivity measurements. FTIR and XRD revealed the interaction between EG and PA. The maximum dc electrical conductivity (13.5 S/cm) of the prepared composite was dramatically enhanced compared to pure PA (2.05 S/cm). The high specific capacitance of PA/EG composite was obtained 456.4 F/g in the potential range from 0 to 0.50 V at 2 mA compared to 266.65 F/g of pure PA by Galvanostatic charge - discharge analysis. The incorporation of EG into PA matrix have a pronounced effect on the conductivity and electrochemical capacitance performance of the PA/EG nanocomposites.
Keywords: Polyaniline; expanded graphite; electrical conductivity; capacitance.

ISCA-ISC-2012-11MatS-04

Sunlight Induced Removal of Rhodamine B from Water through Semiconductor Photocatalysis: Effects of Adsorption, Reaction Conditions and Additives

Hariprasad N., Anju S.G., Yesodharan E.P. and Suguna Yesodharan
School of Environmental Studies, Cochin University of Science and Technology, Kochi, INDIA

Abstract: Application of Advanced Oxidation Processes (AOP) for the removal of toxic pollutants from water has been receiving increasing attention in recent times. Photocatalytic oxidation using semiconductor oxide catalysts is one such AOP which is being investigated extensively for the degradation of dyes in effluent water. Most of these studies are conducted using UV light as the energy source since semiconductor oxides are not normally capable of harnessing visible light. In the case of dye pollutants in water, adsorption by the solid particles employed as catalysts or otherwise, contributes significantly towards the color removal. Distinction between simple color removal and complete mineralization of the dyes is important in ensuring safety of the treated water. This paper reports our findings on the sunlight induced photocatalytic removal of the hazardous xanthene dye Rhodamine B from water by various semiconductor oxides in pure as well as in modified forms. The study reveals that unlike in the case of semiconductor mediated photocatalytic degradation of other type of organic pollutants which are driven by UV light, Rhodamine B can be removed in presence of TiO_2 even by visible light. Deposition of noble metal Pt enhances the solar photocatalytic degradation of the dye by about 5 times compared to TiO_2 alone, which is attributed to extension of the absorption of TiO_2 to the visible range and retardation of the recombination of photogenerated electrons and holes. Further, the dye itself can absorb visible light and act as a photo sensitizer by transferring electrons from the excited dye molecule to the conduction band of TiO_2. The catalysts were characterized by surface area, pore-size distribution, adsorption, Diffuse Reflectance Spectrscopy (DRS), Scanning Electron Microscopy (SEM), X-ray Diffractogram (XRD), Energy Dispersive X-ray Spectroscopy (EDAX) etc. The effects of various parameters such as catalyst loading, concentration of the dye, pH, presence of anions, deposition of noble metals, presence of electron acceptor (H_2O_2) etc on the adsorption and /or degradation of the dye are evaluated. Adsorbents such as activated carbon, alumina, silica etc are also effective in color removal though the TOC measurements indicate significant presence of organic pollutants. Complete removal of TOC is achieved only by photocatalysis in presence of TiO_2 and Pt/TiO_2. In the case of lower loadings of the catalyst, the color returns partially after long irradiation but is decolorized within a short time indicating competition between the dye and the intermediates for adsorption. The degradation decreases beyond a critical concentration, possibly due to reduction in the path length of photons in deeply colored solution. The higher degradation in alkaline pH is explained in terms of the ionization state of the catalyst surface and the enhanced adsorption facilitated by the electrostatic attraction between the negatively charged catalyst surface and the zwitter ionic form of the dye. H_2O_2 formed in situ in the process accelerates the degradation. Anions and humic materials naturally present in water influences the photocatalytic degradation of the dye. The slow decolorisation of the dye in presence of sunlight even without catalyst could be attributed to the self photo fading of the dye. Possible reasons for the observed phenomena are critically analysed and suitable mechanism is proposed.

Keywords: Rhodamine B, X-ray Spectroscopy, AOP, toxic pollutants.

ISCA-ISC-2012-11MatS-05

Determination of Some Physical Properties of Laser Induced Selenium Based Ag Binary Alloy

Dohare C. and Mehta N.
Department of Physics, Banaras Hindu University, Varanasi, INDIA

Abstract: The present study reports the DC conductivity, optical band gap and micro-hardness measurement of virgin and laser induced glassy $Se_{98}Ag_2$ alloy. The morphology and micro structural analysis of as prepared alloy was confirmed by SEM, XRD, and UV-Vis-IR and Raman spectroscopy. Activation energy of DC conductivity is calculated by the slope of conductivity vs. temperature.

Keywords: Chalcogenide glasses, conductivity, band gap, micro hardness.

ISCA-ISC-2012-11MatS-06

Water Absorption Study on Coir-Epoxy infused Particulate Composite

Verma P. and Dixit S.
Maulana Azad National Institute of Technology, Bhopal, INDIA

Abstract: Water absorption of natural fiber plastic composites is a serious concern especially for their potential outdoor applications. In this research, coir-epoxy reinforced particulate composites are subjected to water immersion tests in order to study the effects of water absorption in different environmental conditions. Water absorption tests were conducted

by immersing composite specimens into three different environmental conditions included distilled water at room temperature, distilled water at 60°C and sea water for a period up to 1 week. Water absorption curves obtained and characteristic parameter D (diffusion coefficient) and Mm (maximum moisture content) were determined. The water absorption of coir-epoxy reinforced particulate composites was found to follow a so-called pseudo-Fickian behavior.
Keywords: Water absorption, water immersion, diffusion coefficient, maximum moisture content, pseudo-Fickian behavior.

ISCA-ISC-2012-11MatS-07

Optical Absorption Study of Co (II) Ion Doped PVA Capped CdSe Nanoparticles

Ravindranadh K.[1], S.K. Muntaz Begum[1], Ravikumar RVSSN[2] and Rao M.C.[1]
[1]Department of Physics, Andhra Loyola College, Vijayawada – 520008, INDIA
[2]Department of Physics, Acharya Nagarjuna University, Nagarjuna Nagar, INDIA

Abstract: Research on semiconductor nanoparticles stimulated great interest in recent years because of their nascent applications as building block in electronics, optoelectronics, sensors and actuators. Among them, CdSe an important II-VI, n-type direct band gap semiconductor has engrossed substantial consideration due to its applications in light-emitting diodes, photo detectors and full color display. The wide band gap (bulk band gap of 2.6 eV) makes CdSe as inorganic passivation, in order to improve stability, and also an attractive host for the development of doped Nanoparticles. Cadmium selenide is a semiconducting material, but has yet to find many applications in manufacturing. CdSe nanoparticles have received a lot of attention because of their unique optical and electronic properties. Poly vinyl alcohol (PVA) is used as a capping agent to stabilize the CdSe nanoparticles. The incorporation of nanoparticles into polymer matrices is a useful method to allow nanoparticles to be used in electroluminescent devices. The optical properties of Co(II) Ion Doped PVA Capped CdSe Nanoparticles grown at room temperature are studied in the wavelength region of 200-1400 nm. The spectrum of Co(II) ion doped PVA capped CdSe nanoparticles exhibit five bands at 1185, 620, 602, 548 and 465 nm (8437, 16125, 16607, 18243 and 21499 cm^{-1}). The bands observed at 1185, 548 and 465 nm are correspond to the three spin allowed transitions $^4T_{1g}(F)$ '! $^4T_{2g}(F)$, $^4T_{1g}(F)$ '! $^4A_{2g}(F)$ and $^4T_{1g}(F)$ '! $^4T_{1g}(P)$ respectively. The other bands observed at 602 nm and 620 nm are assigned to spin forbidden transition $^4T_{1g}(F)$ '! $^2T_{2g}(G)$, $^4T_{1g}(F)$ '! $^2T_{1g}(G)$. Band gap studies are evaluated which indicated wide band gap of prepared CdSe compared to the bulk. The small value of the Urbach energy indicates greater stability of the prepared sample.
Keywords: CdSe nanoparticles, PVA, Optical absorption and Band gap.

ISCA-ISC-2012-11MatS-08

Spectroscopic Studies of Polyester – Carbon Black Composites

Al-Maamori Mohammad H.[1], Al-Mosawi Ali I.[2] and AL-Mayalee Khalidah H.[3]
[1]College of Materials Eng, Babylon University, IRAQ
[2]Technical Institute-Babylon, Babylon, IRAQ
[3]College of Education for Girls, Kufa University, IRAQ

Abstract: The optical properties of polyester – carbon black composites has been described by the measurement of changes in the UV-visible light absorption spectrum. polymer composites Exhibits a new UV- visible absorption band at a wavelength range (226-235) nm, which is attributed to interchain interaction. The optical transmission method is successfully used to determine the absorption coefficient (á), dielectric constant and energy gap of four samples of polyester – carbon black composites. The optical characterization was carried out using UV–Visible spectrophotometer. The studies show which is strongly dependent on the nature of the material and the radiation type.
Keywords: Optical properties, UV- visible absorption, Polymer composites.

ISCA-ISC-2012-11MatS-09

Structural, Surface Morphological and Electrial Properties of Spray Pyrolysis made Cu/Cu_2O Composite films for different Molar Concentration of $Cu(OAc)_2$

Rajaram K., Savarimuthu E. and Arumugam S.
Department of Physics, Gandhigram Rural Institute, Deemed University, Gandhigram 624 302. Tamil Nadu, INDIA

Abstract: Cu/Cu_2O Composites films have been developed at different concentration of copper acetate with 3.0M, 3.5M, 4.0M and 4.5M at 300°C by spray pyrolysis technique and the effect of concentration on the structural, surface and electrical properties of the films have been investigated. The crystalline structure of the prepared films has been studied using X-ray diffractometer (XRD). The XRD patterns confirmed the presence of cubic structure of Cu and Cu_2O

in the films in a reduced atmosphere created by NH_4OH and ethanol. The surface properties have been characterized using Scanning Electron Microscopy (SEM). The surface of the as-deposited is smooth and comprised of uniformly distributed grains. The resistivity has been investigated by Four probe method for different molar concentrations of copper acetate. The resistivity for the film deposited with the optimized concentration of 4.0M is found to be $4.34X10^{-02}$ &!cm. From the study it is evident that molar concentration of copper acetate has a strong effect on the structural, surface and electrical properties of Cu/Cu_2O composite films and an optimum molar concentration has been fixed.
Keywords: Spray pyrolysis, Cu/Cu_2O nano Composite films.

ISCA-ISC-2012-11MatS-10

Advance Ceramic Cutting Tool Materials

Shaker J. Edrees AL-Mohana
Materials Engineering College, University of Babylon, IRAQ

Abstract: Ceramics cutting tool are being more widely used, as they can satisfy the high criteria of industry. Main trends in research of ceramic materials are shifting from high purity single phase like Al_20_3 to multiphase composite ceramic. Alumina and sialon are the main part materials in the production of ceramic cutting tools, pure alumina was mixed with different weight percent, of Zirconia fiber (10, 20, 30), and sialon powder was mixed with different weight percents of TiN particles. Examination of mechanical properties was a chivied by using hardness test and Vickers indentation hardness test for measuring fracture toughness.
Keywords: $Al2O3ZrO_2$ composites, particulate reinforcements, cutting tools.

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Improvnment Properties of 7075-T6 Aluminum Alloy by Quenching in 30% Polyethylene Glycol and Addition 0.1%B

Jasim M. Salman[1], Shaymaa Abbas Abd Alsada[2] and Khadim F. Al-Sultani[1]
[1]University of Babylon, College of Engineering Materials, IRAQ
[2]University of Kufa, College of Engineering, IRAQ

Abstract: The 7000 series of aluminum alloys are primarily used in the aerospace industry as structural components and are strengthened by age-hardening especially 7075-T6 aluminum alloy. This study aims to improve properties of 7075-T6 such as impact toughness, thermal age hardening behavior and corrosion resistance in 3.5%NaCl solution by using quenching in 30% polyethylene glycol and addition alloying elements, i.e. boron (B) to this alloy. Results showed that the addition 0.1% B to the base alloy improves impact toughness by (30%) when quenching in water, and by (50 %) when quenching in 30%PAG corresponding to the base alloy at aging temperature 150ºC . Also results showed that the thermal age hardening behavior improved when we add0.1% B (b alloy) by (18%) at aging temperature 150ºC in comparison to the base alloy. An improvement of corrosion resistance in 3.5% NaCl solution when adding 0.1%B (b alloy) by (234 %) at aging time 150ºC in comparison to the base alloy
Keywords: Aluminum alloy, quenching, polyethylene.

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Analysis of Lattice Thermal Conductivity of Amorphous Polymer at Low Temperature Application to Polymethyl Methacrylate

Dubey Prakash[1] and Upadhyay K.S.[2]
[1]Department of Physics, Janta College, Bakewar Etawah, UP, INDIA
[2]Smt. J.H. Mahavidhyalaya Berawa Paharpur S.R.N. Bhadoi UP, INDIA

Abstract: The lattice thermal conductivity (k) of amorphous polymer at low temperatures has been analyzed by expressing its total lattice thermal conductivity as a sum of the three contribution as $K=K_{BE}+K_{EM}+K_{AP}$ where K_{BE} is the contribution due to those phonons which can interact with crystal boundaries, K_{EM} is due to those phonons which have frequencies less than the plateau frequency (ùpt) and K_{AP} is due to those phonons which have frequencies larger than ùpt. The study has been made for polymethyl methacrylate in the temperature range 0.1-4 k within the frame work of the expression proposed by saleh et al. which was based on Walton's theory. A very good agreement has been obtained between experimental and calculated values of k at low temperature. It has also been found that at low temperatures, the total k of non-crystalline polymer is mainly due to the contribution K_{EM} which is due to empty spaces.
Keywords: Lattice thermal conductivity, conductivity, crystal boundaries.

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Meyer-Neldel Rule in the Thermally Activated A.C. Conduction in a-$Se_{80}Te_{20}$ and a-$Se_{80}Te_{10}M_{10}$ (M = Cd, In, Sb) alloys using Correlated Barrier Hopping Model

Chandel N. and Mehta N.
Department of Physics, Banaras Hindu University, Varanasi, INDIA

Abstract: We have investigated Meyer-Neldel Rule (MNR) in thermally activated a.c. conduction for a-$Se_{80}Te_{20}$ and a-$Se_{80}Te_{10}M_{10}$ (M = Cd, In, Sb) alloys by two different approaches. In the first case, the temperature dependence of a.c. conductivity is studied at different audio frequencies without changing the additives of glassy system. In the second case, the composition itself varies at a particular audio frequency. The results are explained by using well-known Correlated Barrier Hopping model.

Keywords: Chalcogenide glasses, meyer neldel rule, thermally activated a.c. conduction.

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Ni, Fe co-doped ZnO Nanoparticles Synthesized by Facile Solution Combustion Method

Dhiman Pooja[1]*, Kotnala R.K.[2] and Singh M.[1]
[1]Department of Physics, Himachal Pradesh University, Shimla-5, INDIA
[2]National Physical Laboratory, Pusa Road, New Delhi 110 012, INDIA

Abstract: This paper outlines the synthesis and characterization of Ni-Fe co-doped ZnO nanoparticles by facile solution combustion method. The structural characterization by XRD confirmed the phase purity of the samples. Surface morphology studied by scanning electron microscope revealed cubic type shape of grains. EDS analysis conformed the elemental composition. Higher value of DC electrical conductivity and less band gap for co-doped ZnO from UV-Vis studies confirmed the change in defect chemistry of ZnO Matrix. M-H measurements showed the clear hysteresis curve indicating room temperature ferromagnetism.

Keywords: DMS, solution combustion, UV-Vis spectroscopy.

ISCA-ISC-2012-11MatS-15

Structural, Magnetic and Optical Properties of $Ni_{0.5}zn_{0.5}fe_2O_4$ Nanostructured Thin Films

Bala Kanchan, Sharma Anshu, Parmar Kusum and Negi N.S.
Dept. of Physics, Himachal Pradesh University Shimla-171005, INDIA

Abstract: $Ni_{0.5}Zn_{0.5}Fe_2O_4$ (Ni-Zn) nanostructured thin films have been deposited on Si substrates by chemical solution method using metallo-organic precursors. These films were annealed at different temperature range 450^0-700^0C for 2h. The structural properties of these samples were studied by X-ray diffraction and atomic force microscope. The influence of annealing temperature on, microstructure and magnetic properties of $Ni_{0.5}Zn_{0.5}Fe_2O_4$ thin films has been systematically studied. The X-ray diffraction patterns confirm the formation of cubic spinel structure in these samples. The crystalline orientation of the films was changed from (311) to (400) on increasing annealing temperature to 550^0C. The crystallite size also increases from 13 nm to 16 nm. The saturation magnetization Ms~300 emu/cm^3, was measured for Ni-Zn thin films annealed at 700^0 C.The optical properties of $Ni_{0.5}Zn_{0.5}Fe_2O_4$ thin film such as refractive index (*n*), extinction coefficient (*k*), energy band gap, optical dielectric constant and conductivity have been extracted from the transmission spectrum measured in the wavelength range 400–1100 nm. The refractive index and extinction coefficients of the Ni-Zn film have been obtained by the Swanepoel method. The optical energy band gap has been extracted by using Tauc's extrapolation technique. The observed optical parameters of Ni-Zn films are consistent with the results obtained by using the Wemple–DiDomenico single oscillator model.

Keywords: Magnetic, optical properties, metallo-organic precursors.

ISCA-ISC-2012-11MatS-16

Structural, Dielectric, Magnetic and Ferroelectric Properties of $(PbTiO_3)_{0.5}$ – $(Co_{0.5}Zn_{0.5}Fe_2O_4)_{0.5}$ composite

Sharma Anshu[1], Parmar Kusum[1], Bala Kanchan[1], Kotnala R.K.[2] and Negi N.S.[1]
[1] Department of Physics, Himachal Pradesh University, Shimla, INDIA
[2]National Physical Laboratory, New Delhi, INDIA

Abstract: $(PbTiO_3)_{0.5}$ – $(Co_{0.5}Zn_{0.5}Fe_2O_4)_{0.5}$ composite has been prepared by chemical solution method using metallo-

organic precursors. The composite solution has been dried at ~300^{0}C and post annealed at 700°C for 3hrs to realize ferroelectric-ferrite mixed phase. The X-ray diffraction pattern shows the formation of mixed phase of spinel and tetragonal perovskite structure in the composite without presence of any impurity phases. The structure of the composite indicates polycrystalline in nature. The variations of dielectric constant with frequency at room temperature and also with varying temperature at different frequencies (1 kHz to 1MHz) have been studied. The multiferroic behaviour of the composite is evident from coexistence of room temperature ferromagnetism and polarization hysteresis loop in the system. For this composite, the observed value of saturation magnetization is M_s ~ 4 emu/g, coercive field is H_c ~ 164 Oe and P_s ~ 2.5 μC/cm^2. The present study demonstrates the possibility of $(PbTiO_3)_{0.5} - (Co_{0.5}Zn_{0.5}Fe_2O_4)_{0.5}$ system as an important multiferroic composite for wide investigation.
Keywords: Dielectric, X-ray diffraction, polycrystalline.

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Activation Energy and Crystallization Kinetics of Treated Composites

Agrawal Richa[1], Saxena N.S.[2], Thomas S.[3] and Sreekala M.S.[4]
[1]Department of Physics, G. N. Khalsa College, Matunga, Mumbai, INDIA
[2]Condensed Matter Physics Lab, Department of Physics, University of Rajasthan, Jaipur, INDIA
[3]School of Chemical Sciences, M. G. University, Kottayam, Kerala, INDIA
[4]Rubber Research Institute of India, Kottayam, Kerala, INDIA

Abstract: Lignocellulosic, Oil-palm fibers have been treated with different chemicals (Toluene diisocynate, acetic acid, acrylic acid and acrylonitrile grafting) and then reinforced in a phenol formaldehyde matrix. Differential scanning calorimetry results obtained are reported and discussed. Crystallization kinetics has been studied and activation energy of the composites has been evaluated. The data acquired are analyzed by employing the Matusita equation and the peek shift method suggested by Kissinger. These methods have been used to derive important kinetic parameters like the activation energy of crystallization, the Avrami exponent and the dimensionality of growth. The derived value of activation energy, obtained by the modified Kissinger equation, is in good agreement with Matusita equation. It has been found that thermal stability of acrylonitrile grafted and latex treated composites are maximum and minimum respectively.
Keywords: Lignocellulosic fiber, phenol formaldehyde resin, DSC, Chemical treatment, Activation energy, thermal stability.

ISCA-ISC-2012-11MatS-18

Calorimetric study of some Se-Te based Quaternary Glassy Alloys using DSC Technique

Patial Balbir Singh[1], Thakur Nagesh[2] and Tripathi S.K.[3]
[1]Dept. of Physics, Rajiv Gandhi Govt. College Chaura Maidan (Kotshera), Shimla, Himachal Pradesh 171 004, INDIA
[2] Dept. of Physics, H.P. University, Summer Hill Shimla, HP-171 005, INDIA
[3] Centre of Advanced Study in Physics, Panjab University, Chandigarh-160 014, INDIA

Abstract: In the present study, calorimetric measurements are performed on quaternary $Se_{79}In_{6-x}Pb_xTe_{15}$ (x = 0.5, 1, 2 and 4) chalcogenide glasses using DSC technique under non-isothermal conditions. A systematic investigation of glass transition, amorphous-crystallization transformation and thermal stability has been performed by using non-isothermal methods. The introduction of lead content in Se-Te-In system involves a modification in its mechanisms and brings about a change in dimension of growth. Thermal stability, glass forming ability and fragility of the investigated system have also been reported and discussed. The temperature difference ($T_p - T_g$) is highest for the samples with 2 at.% of Pb. Hence the glassy alloy with 2 at.% of Pb is most stable and Hruby's parameter is found to be maximum for 2 at.% of Pb which confirms the maximum stability of the alloy. Iso-conversional analyses for all compositions under investigation have been made and it is found that the activation energy shows a variation with extent of crystallization as well as with temperature.

Keywords: Glassy alloys, DSC technique, temperature.

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Synthesis of Tungsten Trioxide (WO_3) Nanorodsand its Electrochemical Studies

Adhikari Sangeeta and Sarkar Debasish
Dept. of Ceramic Engineering, National Institute of Technology, Rourkela, INDIA

Abstract: Metal oxides have played key role for advances in functional materials.Tungsten trioxide is one of the fundamental functional materialswith interesting physical properties and wide ranging applications. It has been widely

studied for its sensing abilities, photochromism in smart windows and photocatalysis.In this paper, WO_3 nanopowder synthesis has been done by combined wet chemical and flash heating technique.Controlled pH with acid as catalyst and structure directing agentare important parameters for optimization of the reaction.WO_3nanopowder was characterized by several analytical techniques like XRD, TEM, Raman, UV-Vis Diffuse Reflectance and energy band gap calculated.A simple droplet technique was adopted to make WO_3/ITO electrodes. Electrochemical measurement of WO_3/ ITOelectrodewas done by cyclic voltammetry. The optimized result shows fairly high current of 2.9mA/cm^2 at lower voltage with electrochromism.Thus, this materialcould be considered as a potential material for electrochromic and photovoltaic applications.

Keywords: WO_3 nanorods; TEM; Raman Spectroscopy; electrochemistry.

ISCA-ISC-2012-11MatS-20

Structural, Morphological and Thermal Properties of Chemically Synthesized Bi_2Te_3 Nanosheets

Punita Srivastava and Kedar Singh
Department of Physics, Faculty of Science, Banaras Hindu University, Varanasi –221005 INDIA

Abstract: Bi_2Te_3 nanosheets have been successful synthesized by chemically at 80 ^{0}C. The product sample was well characterized by powder X-ray diffraction (XRD), transmission electron microscopy (TEM), high resolution transmission electron microscopy (HRTEM), selected area electron diffraction (SAED) pattern and Thermogravimetric-differential scanning calorimetry (TG-DSC). High resolution transmission electron microscopic image indicates the separated atomically some layers of bismuth telluride (Bi_2Te_3) which are crystalline in nature. Selected area electron diffraction (SAED) pattern shows the polycrystalline nature of our synthesized sample. TG result shows that only 62% mass loss has been occurred in as synthesized Bi_2Te_3 sample. DSC profiles show that complete thermal decomposition, dispersion, formation and growth of the as-synthesized Bi_2Te_3 nanosheets has been occurred simultaneously.

Keywords: Bismuth-telluride nanosheets; Weight Loss; Differential scanning calorimetry.

ISCA-ISC-2012-11MatS-21

Structural, Dielectric and Magnetic Study Of 0.7 ($Pb_{0.85}La_{0.15}TiO_3$) /0.3 ($Ni_{0.4}Zn_{0.6}Fe_2O_4$) Composite

Parmar Kusum*, Sharma Anshu, Bala Kanchan and Negi N.S.
Department of Physics, Himachal Pradesh University Shimla-05, INDIA

Abstract: In the present study, $Pb_{0.85}La_{0.15}TiO_3$(PLT) and $Ni_{0.4}Zn_{0.6}Fe_2O_4$(NZF) materials were synthesized by using the Metallo - Organic Decomposition (MOD) chemical route, which were further used as basic materials for the preparation of 0.7 ($Pb_{0.85}La_{0.15}TiO_3$)/0.3($Ni_{0.4}Zn_{0.6}Fe_2O_4$) [PLT/NZF] composite. The structural analysis of individual phases PLT, NZF and PLT/NZF composite were carried out using X-ray diffraction study which confirms that there is no any secondary phases present in composite. The microstructure of composite was studied by using scanning electron microscope (SEM). The room temperature Hysteresis measurement shows the low value of saturation magnetization (M_s) of PLT/NZF composite (~ 12emu/g) as compared to ferrite (NZF) phase (~ 37emu/g). The variation of dielectric constant and dielectric loss of composite with temperature was also studied. The variation of dielectric constant with temperature of PLT/NZF composite show diffuse phase transitions (DPT).

Keywords: MOD, composite, XRD, SEM, Magnetic Hysteresis, Dielectric Constant, DPT.

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Surface Polaritons Interaction on Surface of Condensed Nano Materials

Daya Shankar, Satyprakesh Singh
Physics Department, Lucknow University, Lucknow-226007, INDIA

Abstract: Surface polaritons waves are electromagnetic waves that remains localized within a thin surface layer, or are bound along the interface of two media. Thus these waves can be used exclusively for the study of surfaces and interfaces of condensed nano materials like LiH Ge etc, which is of great scientific and practical importance, not only in the field of Physics, but also in the fields of Chemistry and Bio-Chemistry. Important physical phenomena, like Surface Enhanced Roman effect, fractional quantum Hall Effect etc., applied fields like micro-electronics and in integrated optics are all directly related to the study of surface of solids. This is important study for electronic devices in electronic world.

Keywords: Surface Polaritons, nano materials.

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Nanomaterials Based Electrodes for Li-ion Batteries

Prakash A.S. and Ramesha K.
Central Electrochemical Research Institute-Madras unit, CSIR Madras complex, Taramani, Chennai-600 113, INDIA

Abstract: Progress in materials science and technology crucially depends on developing materials with improved properties. In this context nanomaterials attracted much attention in recent years. They exhibit interesting physical, chemical and electrical properties which far exceed their bulk counterparts. Here we discuss the role of nano materials for electrochemical energy storage systems with more emphasis on their synthesis, characterization and their application in Li-ion batteries. Nanomaterials based electrodes/current collectors have shown major advances in cell assembly and improved performance. The enhanced electrochemical performances in nanomaterials such as nano -particles, -tubes, -wires or -rods are attributed to the better ionic mobility, shorter pathway for electronic/ionic conduction and limitation of volume expansion exerted due to their physical structure. The phenomenal differences in performance of such electrode materials are envisaged and demonstrated with examples from nanoparticles of $Li_4Ti_5O_{12}$, $LiFePO_4$, nano tubes of Co_3O_4 and TiO_2/carbon nano tube composites.

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Application of Ash Coal Microspheres for Concentration of Rare Metals

Ryspanov N.N., Ketegenov T., Leksin M., Kononow A., Oserov T. and Sadykov B.
National engineering academy RK, 80 Bogenbay batyr Street, Almaty 050010, KAZAKHSTAN

Abstract: In the issue of intensive development of mining, metal manufacture, chemical industry, faults of manufacturing wastes, which are also participated in anthropogenic disasters and accidents, the more areas are being polluted, there has been decreasedwater quantity both in surface and underground water horizons. Environment pollution (water, soil) in some regions is in a state when a question about screening of polluted territories arises. For this it is necessary to develop constantly functional system preventing the fall of artificial radionuclides to subterranean and underground waters. One of the possible solutions is the application of sorption materials, placing which around radioactive waste storages in specially created trench can provide a necessary level of security for environment objects from artificial radionuclides. In this case the search of cheap sorbets is actual to solve the majority of ecological problems. One of the most perspective materials for above mentioned sorption processes are microspheres- coal combustion wastes. The utilization of heat-and-power engineering complex wastes directs mainly to building construction production and dischargeof microspheres from the products of the copper combustion, which have valuable technological qualities, namely high sorption qualities during simultaneous mechanic durability, thermo stability, chemical durability, still there is no development of the ability to get materials of different designfrom them. In connection with it, the actuality of the direction in researches concludes in the development of modern technologies of anthropogenic raw material reprocessing –the products of the copper combustion with obtaining on their basis science intensive products, such as sorbents to extract heavy, less-common metals and radioactive wastes. In the result of study there has been developed a technology of microsphere discharge from the products of wet ash loss of coal electrical stations and researched their sorption qualities.

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Mechanochemical Synthesis of Sodium Polysulfides and their Application

Ketegenov T., Leksin M., Oserov T. and Sadykov B.
The Combustion Problems Institute, Committee of Science MES RK, Almaty 050012, KAZAKHSTAN

Abstract: Nowadays the technological cycles of the range of metallurgical enterprises are customizing on concentration of complex ores in which the metals are in the form of sulphur compounds. Meanwhile, oxidized and assorted ores widely spread on the high horizon of deposits present themselves a big rough source along with sulphide ores. Extraction of oxidized minerals with floatation methods of concentration by traditional reagents is not always effective and leads to the loss of about 13% of copper, 35% of lead and 23% of zinc. Oxidized ores going to reprocessing complicate the technology and worsen technical and economic concentration indexes, reduce completeness and complexity of source usage. One of the reagents used in the floatation process is sodium sulfide, usage of which for floatation separation of ores does not always permit to get necessary results. Insufficient effect of sodium sulphide is explained by the absence of elementary sulphur microparticles in its composition which in contrast to sulphur anions in solution havetheir own developed specific surface and are able to sorb metal ions independently, and to consolidate on the surface of sulphide metals. To replace in the technological redistribution sulfurous sodium there has been developed and tested a new reagent – a substitute of sulfurous sodium which has elementary sulphur microparticles in its composition. The reagent

was derived by mechanic-chemical synthesis of fodder sulphur – the recycling of heavy oils and caustic soda. The efficiency of the sulfurous sodium substitute was checked during the polymetalic ore floatation of Irtysh deposit (The republic of Kazakhstan) as more difficult according to the interaction of chemical compounds in technological process. The results of relative experiments in comparable conditions with sulfurous sodium and its synthesized analog confirm the high efficiency of application in the floatation process of developed sulfurous sodium substitute.

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Intensification of Ion Exchanging using Ultrasonic Technology

Ketegenov T., Mamytbekov G., Leksin M., Kononov A.
Institute of high technology by the National atomic company "Kazatomprom" Almaty 050012, KAZAKHSTAN

Abstract: At present, in different fields of industry it is necessary to introduce new highly effective technologies which could increase the quality of products and at the same time reduce the expenses for extraction of minerals. The problem can be solved with the help of ultrasonic technologies which are being widely used in different fields of industry: metallurgical, machine building, chemical, machine and instrument engineering. In regard to uranium industry, the ultrasonic technologies can be used in such processes as leaching, sorption, desorption, extraction, reextraction and precipitation. The results of our pilot experiments have shown that the use of US effect on the process of uranium sorption allows to increase the sorption rate by 30% in average as well as the full dynamic ion-exchange capacity of the sorbent by 25-30%. Similar results were obtained by us in the process of rhenium sorption where the sorption rate increased by 23% in average and the full dynamic ion-exchange capacity of the sorbent – by 6% or 0.6 kg/t. It should be noted that ultrasonic actions contribute to the removal of impurities and mechanical suspensions from the surface of resins, thereby providing the high kinetics of the process. Proceeding from the obtained results, we may consider that ultrasonic technology is the most promising in the increase of the equipment capacity which is used in uranium mining processes. Also, the use of ultrasonics results in the reduction of specific consumption of chemical reagents used in technological processes which, in its turn, exerts a positive effect on economic indexes of the mining industries.

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Mechanical Properties of Ternary Polymer Pvp/Cs/Pva Blend Films

Mudigoudra Bhagyavana[1], Masti Saraswati[2] and Chougale Ravindra[1]
[1]Department of Materials Science, Mangalore University, Mangalgangotri - 574 199, INDIA
[2]Post-Graduate Department of Chemistry, Karnatak Science College, Dharwad - 580 001, INDIA

Abstract: Ternary polymer blend films of poly (vinyl pyrrolidone) (PVP) doped chitosan (CS)/poly (vinyl alcohol) (PVA) blend films were prepared by solvent casting method. In this study, films containing different concentration (wt %) of PVP and equal quantity of CS/PVA (50/50) were characterized. With increase in the concentration (wt%) of PVP into the equal quantity of CS/PVA, blend shows slight increase in tensile strength and significant increase in elongation at break and decrease in young's modulus.
Keywords: PVP, PVA, CS, ternary blend, tensile properties.

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Optical Properties of Mn, Co doped oxides: ZnO and TiO_2

Kaushik A. and Dalela S.
Department of Physics, School of Physical Sciences, Banasthali University, P.O. Banasthali Vidyapith, INDIA

Abstract: This paper deals with the Optical properties of Mn, Co doped oxides ZnO and TiO_2 samples using Raman Spectra and UV-VIS-NIR spectroscopy. The Raman Spectroscopic results are explained in terms of the broadening of peaks and small shift of Raman scattering modes, which are caused by the generation of defects such as vacancies and interstitials and due to the microscopic structural disorder of oxygen lattice induced by transition metal incorporation. Optical absorption spectra have red shift with Mn and Co concentration increasing in ZnO and TiO_2 polycrystalline samples, which is due to sp-d exchange interactions. Under our experimental conditions, the bandgap of the polycrystalline powders tends to decrease with increasing dopant concentration.
Keywords: Mn, Co-doped ZnO and TiO_2, Raman Spectroscopy, Optical properties, sp-d exchange interactions, Defects and disorders.

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Study of Grain Boundaries in Austenitic Stainless Steel Using Optical Dark Field Light Microscopy

Chandra Sekhar K.[1,2], Kashyap B.P.[2] and S. Sangal[1]
[1]Department of Materials Science and Engineering, Indian Institute of Technology, Kanpur-208016, INDIA
[2]Dept of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai-400076, INDIA

Abstract: Grain boundaries are commonly considered as interfaces between crystalline grains/phases and act as a precursor which governs many engineering properties such as mechanical, chemical, electrical and thermal properties. In order to understand its grain boundary intricate morphology, light microscopy is carried out which brings various grain boundary characteristics and hidden features. It is also well known that grain boundary affects the corrosion behavior and acts as a potential site for inter-granular corrosion, sensitization, creep cavitations and solute segregation whereby degradation takes place in metal and alloys. The primary objective of this work is to highlight the grain boundary features in polycrystalline AISI 304 austenitic stainless steel using "Dark Field light microscopy". The optical microscopy in dark field mode helps in revealing many interesting features at grain boundary faces which include sub-faces (facets), nodes, faces, edges, and corners.
Keywords: Grain boundaries, stainless steel, optical dark field microscopy.

ISCA-ISC-2012-11MatS-30

Study PF Dielectric Behaviour of Polyaniline

Mishra Pankaj K.[1], Vivek Dwivedi[1] and Dinesh Saxena[2]
[1]B.N.D.College Kanpur, INDIA
[2]D.B.S.College Kanpur, INDIA

Abstract: The dielectric parameters like dielectric constant, dielectric loss, capacitance and dissipation of conducting polyaniline have been studied. Their frequency and temperature dependence study have been qualitatively explained. The temperature dependence of dielectric constant increases rapidly with temperature particularly in temperature region where dielectric loss peak occurs. The magnitude of dielectric loss decreases with increasing frequency. Such behavior may be in light of the model of multiple conductivity relaxation modes.

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Thermoluminescence and Structural Properties of Ce^{3+} Doped Aluminate Based Phosphor

Selot Anupam[1], Aynyas Mahendra[2] and Bhatt Sanjay[3]
[1]Dept. of Physics, Sadhu Vaswani College, Bhopal, INDIA
[2]Dept. of Physics C.S.A. Govt P.G. College, Sehore, INDIA
[3]Dept. of physics, Govt. Geetanjali Girls P.G. College, Bhopal, INDIA

Abstract. The synthesis and characterization of Ce^{3+} doped $BaMgAl_{10}O_{17}$ phosphor with varying concentrations of Ce^{3+} is reported herewith the main focus on the Thermoluminescence (TL) and optical properties. The TL glow curve exhibit a single peak centered around ~204° C in the lowest doped 1 mol% Ce^{3+} sample, which shifts slightly to lower temperatures with increasing Ce^{3+} concentration. These results are supported by corresponding X-ray diffraction measurements which exhibit crystalline nature. Overall results suggest the possibility of utilizing this material in futuristic dosimeter application as well as in solid state lighting devices.
Keywords: XRD, Thermoluminescence.

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Electronic Structure of Iron- Pnictide $SmO_{1-x}F_xFeAs$ Superconductor using X- ray Absorption Spectroscopy

Neena D.[1], Alvi P.A.[1], Garg K.B.[2] and Dalela S.[1,3]
[1]Department of Physics, Banasthali University, P.O. Banasthali Vidyapith-304022, INDIA
[2]Department of Physics, University of Rajasthan, Jaipur- 302004, INDIA
[3]Department of Pure & Applied Physics, University of Kota, Kota- 324007, INDIA

Abstract: In this paper electronic structure of Fe- based superconductor $SmO_{1-x}F_xFeAs$ (x = 0.2) has been studied using polarised X-ray absorption spectroscopy measured at ELLETRA synchrotron Trieste, Italy. The XAFS spectra for Sm $M_{IV,V}$, Fe $L_{II,III}$ and O K- edge has been analyzed and the results are explained to show the possible hybridization responsible for superconductivity in these compounds, which may be assumed due to a charge transfer from Sm-O layer to the Fe-As layer as a result of fluorine doping.
Keywords: Electronic structure, X- ray absorption, $SmO_{1-x}F_xFeAs$, Superconductivity, Density of states, Charge transfer.

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Polymer Based MEMS Systems With Improved Reliability and Enhanced Features Improving Upon the Conventional Silicon Based Designs

Sharma Anant[1] and Sharma Akhilesh[2]
[1]IIT Roorkee Uttaranchal, INDIA
[2]MLC Govt GDC Khandwa MP, INDIA

Abstract. The Micro-electromechanical systems (MEMS) as the name suggests is a technology that combines computers with tiny mechanical devices such as sensors, valves, gears, mirrors, and actuators embedded in semiconductor chips. MEMS combine many disciplines, including physics, bioinformatics, biochemistry, electrical engineering, optics and electronics. In a MEMS system, the integrated circuits (ICs) are considered the thinking part of the system while MEMS provides active perception and control functions. In order to develop reliable MEMS devices, reliability must be considered at the earliest stages of product development. Decisions made in the design stage can result in devices that will never be reliable. Reliability must be understood at a fundamental physical and statistical level .Most of the root causes of the failure modes observed are different from the common causes in macroscopic level. For example, gravitational forces are negligible. The dominant forces are associated with contacting or rubbing surface. Hence the choice of right material demands utmost importance. Switching over from conventional silicon based materials for assembling MEMS sensors can improve the performance and reliability phenomenally. The liquid crystal polymer is a thermoplastic polymer material with unique structural and physical properties. It contains rigid and ûexible monomers that link to each other. When ûowing in the liquid crystal state, rigid segments of the molecules align next to one another in the direction of shear ûow. Once this orientation is formed, their direction and structure persist, even when LCP is cooled below the melting temperature. This is different from most thermoplastic polymers (e.g., Kapton), whose molecules are randomly oriented in the solid state. As a result of the unique structure, LCP offers a combination of electrical, thermal, mechanical and chemical properties unmatched by other engineering polymers. It was originally used as a high performance thermoplastic material for high-density printed circuit board (PCB) fabrication and semiconductor packaging . Results from high-frequency tests show that LCP has a uniform relative dielectric constant of 3 in the range 0.5 to 40 GHz and an extremely low loss factor of <“0.004. LCP has very low moisture absorption (<“0.02%) and low moisture permeability. For other gases, including oxygen, carbon dioxide, nitrogen, argon, hydrogen and helium, LCP also exhibits above-average barrier performance. Further, the permeation of gases through LCP is not affected by humidity, even in an environment with elevated temperature (e.g., 150æ%C). The LCP ûlm also shows excellent chemical resistance. LCP is virtually unaffected by most acids, bases and solvents for a considerably long time and over a broad temperature range.
Keywords: MEMS (Microelectromechanical systems), LCP (Liquid Crystal Polymer), Substrates, Polymer, Micromachining.

ISCA-ISC-2012-11MatS-34

Growth and Characterization of Cobalt Sulphide Nanorods

Ariponnammal S. and Srinivasan T.
Dept. of Physics, Gandhigram Rural Institute, Deemed University, Gandhigram, Dindigul District, Tamil Nadu, INDIA

Abstract: Uniformly distributed Cobalt Sulphide (CoS) nanorods with diameter of 139nm and 0.7μm long have been synthesized by using inexpensive chemical precipitation method. The X-ray powder diffraction study has shown the amorphous nature of the as prepared CoS nanorods. The scanning electron microscope reveals the morphology of the nanorods having nearly spherical head and elongated to flat tail tip just similar to nail shape. These kinds of structure are useful in laser and field emission application. The analysis of EDAX has shown the presence of equal percentage of Cobalt and Sulphur along with oxygen peak whose percentage is half of the cobalt. This shows the formation of Cobalt Sulphide with slight hydrous nature. The hydrous nature is confirmed by FTIR study which has shown the presence of O-H bond. The room temperature photoluminescence at excitation wavelength of 320nm exhibits two bands of which one observed at 413nm is broad and other band at 413nm is comparatively sharp. The prominent peak at 413nm provide violet emission while the band at 493nm exhibits strong blue emission. These emissions are originated from Co vacancy related defects or their complexes.
Keywords: Nanorods, CoS, SEM.

ISCA-ISC-2012-11MatS-35

Lattice Dynamics of III-V Compounds of Semiconducting Crystals (GaP-InP)

Peeyush Dixit and S.K. Mishra
Department of Physics, D.B.S. College, Kanpur, INDIA

Abstract: To study the lattice dymamics of GaP-InP having Zinc-blende structure in a new non-central rigid ion model (NC-RIM) which in corporates three types of interactions (i) Non-coulombic forces (ii) Coulombic forces (iii) Bond bending forces has been used developed. The model involves seven model parameters, We used six critical point phonon frequencies, two elastic constants. The applications of the present model (NC-RIM) has been made to calculate the phonon dispersion relations, Debye characteristic temperature and specific heat of GaP-InP. The comparision of theoretical results with the available experimental data has been made along the three sysmmetry direction [100], [110] and [111]. A reasonably good agreement observed between theory and experiments.

Keywords: Secular determinant, Ionic rigidity, Non-coulombic interaction, phonon dispersion.

ISCA-ISC-2012-12MSS-01

Application of the Method of Successive Approximations for Explaining the Anomaly in the Thermodynamic Property of Some Complex Forming Binary Liquid Alloys

Yadav R.N.
Dept. of Mathematics, Tribhuvan University, M. M. A. M. Campus, Biratnagar, NEPAL

Abstract: The thermodynamic properties of binary liquid alloys often show anomaly especially in case of complex forming ones. There is no general theory to explain such anomaly. In the present work we have used the quasi-lattice model. It is a statistical model in which grand partition function is used assuming that the energy of a given nearest neighbour bond is different if it belongs to the complex than if it does not. We have tried to explain here the anomaly in the heat of mixing of some complex forming binary alloys—cadmium-sodium, indium-sodium and copper-tin—all in molten state. For each alloy we have started with the expression for excess free energy of mixing according to this model and computed the free energy of mixing for different concentrations of the metals within it by deriving the value of interaction parameters through the method of successive approximations. Thereafter, the expression for excess entropy of mixing is taken into account and the entropy of mixing is computed for different concentrations after finding out the temperature derivative of interaction parameters by the method of successive approximations. Finally the heat of mixing is calculated from the free energy of mixing and entropy of mixing on using the standard thermodynamic relation. Our computations explain well the anomaly in this thermodynamic property of the binary liquid alloys under consideration.
Keywords: Thermodynamic Properties, binary liquid, quasi-lattice model.

ISCA-ISC-2012-12MSS-02

The Laws of Large Numbers for Random Variables with Negatively Quadratic Dependent

Einolah Deiri
Department of statistic, Islamic Azad University, Qaemshahr Branch, IRAN

Abstract: In this paper we prove the law of large numbers when the condition of independent random variables is replaced by negatively quadratic dependent random variables.
Keywords: Almost sore (a.s); Borel-Cantelli Lemma; Cauchy-Schwarz Inequality; Negative Quadrant Dependent (NQD); Negative Association (NA); Strong Law of Large Numbers (SLLN); Weak Law of Large Numbers (WLLN).

ISCA-ISC-2012-12MSS-03

On Mean Estimation with Imputation in Two- Phase Sampling Design

Thakur Narendra Singh[1], Yadav Kalpana[1] and Pathak Sharad[2],
[1]Center for Mathematical Sciences (CMS), Banasthali University, Rajasthan, INDIA
[2]Department of Mathematics and Statistics, Dr. H. S. Gour Central University, Sagar (M.P.), INDIA

Abstract: A sample survey remains incomplete in presence of missing data and the substitution technique of missing observations is known as *imputation.* A number of imputation methods are available in literature using auxiliary information, for example, Mean method of imputation, Ratio method of imputation, Compromised method of imputation and so on. These suggested methods are based on either population parameter of auxiliary variable or available information (both study and auxiliary variable) in the sample. Also, the number of available observations is considered as a constant but practically, it is not possible, the missing values may vary from sample to sample i.e. it may be considered as random variable. If population mean of auxiliary variable is unknown, then all these methods fail to perform. In such situations the idea of two-phase sampling is used for estimating population parameters. This paper presents the estimation of mean in presence of missing data under two-phase sampling scheme while the numbers of available observations are considered as random variable. The bias and m.s.e of suggested estimators are derived in the form of population parameters using the concept of large sample approximation. Numerical study is performed over two populations using the expressions of bias and m.s.e and efficiency compared with existing estimators.
Keywords: Estimation, missing data, imputation, Post-stratification, bias, mean squared error (m.s.e.).

ISCA-ISC-2012-12MSS-04

Modelling In Mathematical Exponential Function

Mahajan P.S.
G.D.M Arts, K.R.N Commerce, M.D Science College, Jamner, Maharashtra, INDIA

Abstract: This presentation briefly illustrate the role of applied mathematics in complex plane and characterization of exponential function. Continued fraction can be obtained via an identity of Euler .The exponential function extends to an entire function on the complex plane. Euler formula relates its value at purely imaginary to trigonometric function.
Key words: Exponential function, derivative, differential equation, complex plane.

ISCA-ISC-2012-12MSS-05

Some Fixed Point Theorems in G- Metric Spaces

Bhardwaj Ramakant
Department of Mathematics, Truba Institute of Engineering and Information Technology, Bhopal, INDIA

Abstract: There is lot of generalization of Banach contraction principle in present literature. Some generalizations of the notion of a metric space have been proposed by some authors. In 1992, B.C. Dhage introduced the new concept of metric space, that is D. metric space, and prove some fixed point theorems in this space. After some time, in 2006, Mustafa is collaboration with Sims introduced a new notation of generalized metric space called G- metric space. In fact, Mustafa et al. studied many fixed point results for a self mapping in G- metric space under certain conditions. In the present work we study some fixed point results for a self mapping in a complete G- metric space X under weakly contractive conditions related to altering distance functions. Mathematics subject classification (2010):- 47H10, 54H25, 46G99.
Keywords: G- metric space, fixed point, weak contraction, altering distance.

ISCA-ISC-2012-12MSS-06

A Review of Literature Relating to Balance Incomplete Block Designs with Repeated Blocks

Awad Rashmi[1] and Banerjee Shakti [2]
[1]Dept. of Statistics, Govt. Holkar Science College, Indore, INDIA
[2]School of Statistics, D.A.V.V., Indore, INDIA

Abstract: The concept of balance incomplete block designs with repeated blocks comes from experimental design. Many statisticians were thoroughly studied the problem of construction of balance incomplete block designs with repeated blocks. In recent years there has been very rapid development in this area of experimental design. This paper presents a review of the available literature on balance incomplete block designs with repeated blocks.
Keywords: Incomplete block design, balance incomplete block design, balance incomplete block design with repeated blocks, variance balance design, efficiency balance design, neighbour balance block designs.

ISCA-ISC-2012-12MSS-07

Effect of Rigidity and Density Variation on Propagation of Torsional Wave

Kumari Pato[1] and Sharma V.K.[2]
[1]Department of Mathematics, Jaypee Institute of Information Technology, Noida, U.P., INDIA
[2]ISSA, Defence Research and Development Organisation, Ministry of Defence, Delhi, INDIA

Abstract: Torsional surface wave is an important seismic wave, which propagate during an Earthquake. In this paper we have explored the effect of rigidity and density variation on propagation of torsional surface wave in an isotropic half space. We studied the possibilities of propagation of torsional surface waves under different geometrical conditions namely the variation in rigidity and density with depth such as linear, quadratic and harmonic variation. It is found that in most cases (except for homogeneous isotropic half space) displacement of torsional seismic wave cannot be expressed using elementary function. However special functions like Bessel, Kummer, Heun and Heun complimentary are found to be very useful for analysis of torsional surface wave and expressing the closed form solution for displacement of resulting torsional wave. It is observed that torsional wave does not propagate though homogeneous isotropic medium, while inhomogeneity in isotropic half space allows torsional waves to propagate. In case of linear variation in rigidity and density, the displacement of torsional wave can be expressed in Kummer function while harmonic variation and quadratic variation in density and rigidity require the displacement to be expressed in terms of Heun functions and complimentary Heun function respectively.
Keywords: Bessel function, Heun function; Kummer function, Heun complimentary function; Torsional surface waves; rigidity and density variation.

ISCA-ISC-2012-12MSS-08

On the Robustness of K-Sort and its Comparison to Quick Sort in Average Case

Pal Mita and Chakraborty Soubhik
Depat. of Applied Mathematics, B.I.T, Mesra, Ranchi, INDIA

Abstract: The present paper examines the robustness of the average case O (nlogn) complexity on K-sort, a new version of quick sort. In our first study we reconfirm this through computer experiments. A computer experiment is a series of runs of a code for various inputs. A deterministic computer experiment is one which produces identical results if the code is re-run for identical inputs. Our second study reveals that K-sort is the better choice for discrete uniform distribution U (1, 2...k) inputs whereas quick sort is found better for continuous uniform distribution U(0, 1) inputs. Interestingly, increasing k which decreases the ties is good for quick sort but bad for K-sort.
Keywords: Cauchy distribution, computer experiment, K-Sort, robustness, average complexity.

ISCA-ISC-2012-12MSS-09

F-T Estimator with Imputation and Measurement Error in Survey Sampling

Shukla Diwakar[1], Pathak Sharad[1] and Thakur Narendra Singh[2]
[1]Department of Mathematics and Statistics, Dr. Hari Singh Gour University, Sagar, MP, INDIA
[2]Center for Mathematical Sciences (CMS), Banasthali University, Rajasthan, INDIA

Abstract: While in sample surveys, it is customary to assume that respondents are available at their home in order to provide the required information correctly to the interviewers. But in real life situation it is rarely happens. Often respondent is not available often does not understand the interviewer objective and often shows unwillingness for accurate response. It causes a sample to be incomplete. According to the theory of survey sampling, investigators are suggested to revisit those units which found non-responded but even then the problem remains as such. Over the issue of personal respect and prestige bias respondents are often to produce over or under estimated response instead of the true value. This causes appearance of measurement error in sample values. This paper presents method of mean estimation in the setup of non response and measurement error both to impute the values which are non-responded in sample and to fulfill values containing measurement error of study variable with the help of auxiliary variable. Expressions of optimization are derived and theoretical results are supported by numerical examples. This is a most general approach for problem of estimation in samplesurveys.
Keywords: Non-response, Measurement error, Bias, Mean squared error, Imputation.

ISCA-ISC-2012-12MSS-10

Heat and Mass Transfer Effects on Flow past an Oscillating Infinite Vertical Plate with Variable Temperature through Porous Media

Saraswat Amit[1] and Srivastava R.K.[2]
[1]Department of Mathematics GLA University Mathura, UP, INDIA
[2]Department of Mathematics Agra College Agra, Dr B.R. Ambedkar University, Agra UP, INDIA

Abstract: An exact solution of heat and mass transform on flow past an oscillating infinite vertical plate with variable temperature through porous media has been presented. The dimensionless governing equations are solved by using Laplace transform technique. The velocity and temperature profiles are studied for different physical parameters like phase angle (ùt), thermal Grashof number (Gr), mass Grashof number (Gc), permeability parameter (K), Prandtl number (Pr), Schmidt number (Sc) and time t. It is observed that the velocity increases with decrease in ùt and increase in Gc, Gr, Pr, K and t. The temperature is also discussed with the help of graph.
Keywords: Porous Medium, oscillating infinite, vertical plate, Heat and mass transfer, Variable temperature.

ISCA-ISC-2012-12MSS-11

Parametric Approach for Estimation of Technical Efficiency

Biswas Anita[1] and Verma Smita[2]
[1]Truba College of Technology, Indore, MP, INDIA
[2]S.G.S. Institute of Technology and Science, Indore, MP, INDIA

Abstract: In this paper an attempt is made to explain the basic concept of efficiency, frontier production function, technical efficiency, deterministic frontier, and stochastic frontier. Efficiency of a firm/industry refers to its performance

in the utilization of resources at its disposal and is a relative concept. Technical efficiency of a production function is defined as the maximum quantity of output obtainable from given set of inputs. A failure to produce the greatest possible output means the technical decision is in efficient. Technical inefficiency can be obtained by the methods stochastic and deterministic production frontier models. The method discussed in this paper has several possible extension and generalization. Technical efficiency has many policy implications in various functional areas of modern management.

ISCA-ISC-2012-12MSS-12

Mathematical Programming approach for Measuring Technical Efficiency

Verma Smita[1] and Biswas Anita[2]
[1]S.G.S. Institute of Technology and Science, Indore, MP, INDIA
[2]Truba College of Technology, Indore, MP, INDIA

Abstract: There has been an ever growing concern to measure efficiency of decision making units (DMUs). Parametric approaches have been the popular methods for measuring the same. Data Envelope Analysis (DEA) is an addition in this domain. This paper is an attempt to understand the concept of DEA approach. DEA is a Linear Programming Problem that provides a means of calculating apparent efficiency levels within a group of organizations. The efficiency of an organization is calculated relative to the group's observed best practice. In other words, we may say that, DEA is essentially an optimization algorithm, which develops efficiency scores for all DMUs on a scale from zero to hundred percent.

ISCA-ISC-2012-12MSS-13

On the Sum of Certain Hypergeometric Series of Four Variables

Sharma Chhaya[1], Sharma Akhilesh[2] and Jain Jaya[1]
[1]SDITS, Khandwa, MP, INDIA
[2]GDC College, Khandwa, MP, INDIA

Abstract: Hypergeometric functions of four variables have been defined in one of our papers [4]. In this paper we have obtained the sum of hypergeometric series of four variables. This sum is useful in analytic continuation of hypergeometric series in four variables and their transformation theory.
Keywords: Hypergeometric function, Transformation theory.

ISCA-ISC-2012-12MSS-14

Partial Sums of Certain Analytic and Univalent Functions

Porwal Saurabh[1] and Misra Indu Bala[2]
[1]Department of Mathematics, UIET, CSJM University, Kanpur– 208024, UP, INDIA
[2]Department of Mathematics, Janta College, Bakewar, Etawah– 206124, UP, INDIA

Abstract: Let $f_m(z) = z + \sum_{k=2}^{m} a_k z^k$ be the sequence of partial sums of a function $f(z) = z + \sum_{k=2}^{\infty} a_k z^k$ that is analytic in $|z| < 1$ and belong to the class $S_n(\alpha)$, where $(0 \le \alpha < 1)$. When the coefficients of $\{a_k\}$ are " small " we determine sharp lower bounds for $\operatorname{Re}\left\{\frac{D^p f(z)}{D^p f_m(z)}\right\}$ and $\operatorname{Re}\left\{\frac{D^p f_m(z)}{D^p f(z)}\right\}$, where D^p stands for the Salagean derivative introduced in [4].
Keywords: Analytic functions, Univalent functions, Salagean derivative, Partial sums.

ISCA-ISC-2012-12MSS-15

CPM Analysis of Rolai- Rinjlai Road Construction Project

Khurana Sunita* and Banerjee Snigdha
School of Statistics, Devi Ahilya Vishvavidayalya, Indore, MP, INDIA

Abstract: This work is based on empirical data of Rolai- Rinjlai road construction project considered as a network in which raw material is available at different quarries. We use CPM technique in an attempt to obtain the critical path of the network and suggest the best approach for acquiring material and for construction of road under the stated constraints. The solution suggested by us provides much shorter completing time as compared to the actual time taken by the project.

ISCA-ISC-2012-12MSS-16

Maximizing Sales of Finance Company using Probabilistic Genetic Algorithm

Parmal Varun[1] and Banerjee Snigdha[2]
[1]Sanghvi Innovative Academy, Indore, MP, INDIA
[2]School of Statistics, DAVV, Indore, MP, INDIA

Abstract: Genetic Algorithm (GA) is a heuristic search technique based on natural evolution. It has been applied to diverse fields in problems like Travelling salesman problem (TSP), Marketing, product manufacture etc. In this paper, using GA in a new probabilistic framework, we have tried to find the solution of a major problem of any finance company, namely, which customer segment should be the major target for each given product category (product, ticket size etc.), so as to increase the sales of the company significantly.

ISCA-ISC-2012-12MSS-17

Some Viability Considerations in Inventory Models

Banerjee Snigdha
School of Statistics, DAVV, Indore, MP, INDIA

Abstract: In this paper, taking cue from analysis of empirical data, a single fixed period stochastic inventory model is developed for a situation where a highly competitive market environment induces an exogenous decline in selling price and demand is thus dependent only upon the initial selling price. Market reports indicate adverse ramifications of reference price on the demand of the items. Thus a theoretical optimal value of selling price may not be viable in practice if it exceeds the reference price. Hence, the viability and scope for the policies obtained through typical method of joint optimization of ordering and pricing policies needs to be reinvestigated. Motivated by this, we develop viable policies for three well considered strategies in order to maximize the profit function under four realistic market conditions.

ISCA-ISC-2012-12MSS-18

On Acyclic Edge Coloring of Outer planar Graphs

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Shah Vibha and Sakalle Maneesha
S.N.P.G. College, Khandwa, MP, INDIA

Abstract: An acyclic edge coloring of a graph is a proper edge coloring having no 2-coloured cycle, that is, a coloring in which the union of any two color classes forms a linear forest. The acyclic chromatic index of a graph is the minimum number k such that there is an acyclic edge coloring using k colors and is usually denoted by *a' (G)*. Determining *a' (G)* exactly is a very hard problem (both theoretically and algorithmically) and is not determined even for complete graphs. We show that $a^{'}(G) \leq \Delta(G)+1$, if G is an outer planar graph. This bound is tight within an additive factor of 1 from optimality.The class of outer planar graphs are a non-trivial subclass of 2-degenerate graphs. We have also obtained tight estimates on $a^{'}(G)$ for a few other subclasses of 2-degenerate graphs and we are pursuing further theoretical and algorithmic work in this direction. An interesting algorithmic question is to design (if it is possible) a linear, that is $0(n)$ time algorithm for $\Delta+1$ acyclic edge coloring of outer planar graphs. We are also trying to extend these results to planar graphs. We conjecture that the class of minimally 2-degenerate class of graphs are colorable with colors.

ISCA-ISC-2012-12MSS-19

Characterization of Coflat Modules

Bhupendra and Singh R.S.
Dept. of Mathematics and Statistics, Dr. H. S. Gour Vishwavidyalaya, Central University, Sagar, MP, INDIA

Abstract: A right R-module M is said to satisfy the À - Baer criterion in case for every finitely generated right ideal I of R and every R – homomorphism f : I M there exists an m M with f(x) = mx for all xI. Baer criterion provides a characterization of coflat modules dual to the characterization of flat modules as factors of projective modules by pure submodules. It is known that a modules M is coflat if and only if it satisfies the À - Baer criterion. In this paper we find that any right R–module M is coflat if and only if: (i)L_M (AB) = L_M (A) + L_M (B) for A and B are finitely generated right ideals of R., (ii)L_M r_R (a) M a for all aR. where L_M (A) is the left annihilator of A in M and r_R (Y) is the right annihilator of Y in R., Also we find that following conditions are equivalent for a right coflat right R:, (i) Every finitely generated right ideal is projective., (ii)Every Quotient of right coflat R–module is right coflat., (iii) Every finitely generated right ideal is projective relative to right coflat R– module. Examples are constructed which are coflat but not injective.

Keywords: Finitely generated, coflat modules, annihilator, injective, projective, Noetherian.

ISCA-ISC-2012-12MSS-20

MHD Flow of Viscous Liquid Moving Steadily Under Pressure between two Flat Plates with Constant Velocity

Mishra Gaurav[1], Kumar Ravindra[1] and Sharma A.K.[2]
[1]Department of Mathematics, Agra College Agra, UP, INDIA
[2]Department of Mathematics, K.K.P.G. College Etawah, UP, INDIA

Abstract: The aim of the present paper is to study the flow of viscous liquid moving steadily under the pressure between two flat plates with constant velocity under the influence of uniform magnetic field applied perpendicularly to the flow of viscous liquid. The expression for velocity of the viscous liquid is obtained in elegant form.

ISCA-ISC-2012-12MSS-21

Unsteady Flow of Non-Newtonian (Oldroyd 1958 Model) Fluid with Transient Pressure Gradient through Porous Media in A Rectangular Channel

Ravindra Kumar[1], Mishra Gaurav[1] and Sharma A.K.[2]
[1]Department of Mathematics, Agra College Agra, UP, INDIA
[2]Department of Mathematics, K.K.P.G.College Etawah, UP, INDIA

Abstract: The object of the present paper is to investigate the unsteady flow of non-Newtonian (Oldroyd 1958 model) fluid of second order with transient pressure gradient through porous media in a long rectangular channel. The expression for velocity of the fluid is obtained in elegant form.

ISCA-ISC-2012-12MSS-22

A Study of Hall Currents on Magneto-Hydrodynamic Unsteady Flow of Visco-Elastic [Oldroyd (1958) Model Fluid through Porous Media in a Rectangular Channel

Sharma A.K.[1], Kumar Ravindra[2] and Mishra Gaurav[2]
[1]Department of Mathematics, K.K.P.G. College Etawah, UP, INDIA
[2]Department of Mathematics, Agra College Agra, UP, INDIA

Abstract: The object of the present paper is to study of Hall currents on magneto-hydrodynamic unsteady flow of visco-elastic first order [Oldroyd (1958) model] fluid with transient pressure gradient through porous media in a long rectangular channel. The expression for velocity of the fluid is obtained in elegant form. Some deductions have been discussed in detail.

ISCA-ISC-2012-12MSS-23

A Study of Oscillatory Flow of Blood through Porous Medium in a Stenosed Artery in the Presence of Magnetic Field

Tripathi Anil[1], Kumar Ravindra[2] and Singh K.K.[2]
[1]Department of Mathematics, K.K.P.G. College Etawah UP, INDIA
[2]Department of Mathematics, Agra College Agra UP, INDIA

Abstract: The purpose of this paper is to study the effect of magnetic field on oscillatory flow of blood through porous medium in a rigid tube with a mild stenosis. Here we assumed that the blood behaves as a Newtonian fluid and the maximum height of the roughness is very small compared with the radius of the unconstricted tube. The expressions are given for the instantaneous flow rate, resistive impedance and wall shear stress.
Keywords: Oscillatory flow, Blood, Stenosed artery, Magnetic field and Porous medium.

ISCA-ISC-2012-12MSS-24

Propagation of G Type Seismic Waves in Isotropic Monoclinic Layer Lying Over Non Homogeneous Monoclinic Half-Space

Chattopadhyay Amares and Singh Abhishek Kumar
School of Mathematics and Computer Application Thapar University, Patiala, INDIA

Abstract: The present paper deals with the propagation of SH wave along the plane surface separating two different types of monoclinic media. The monoclinic half-space is heterogeneous where as the upper monoclinic layer is isotropic.

The relation between non dimensional phase velocity and non dimensional wave number has been obtained in compact form. The effect of nonhomogeneity on phase and group velocity has been depicted by means of graphs. It is found that the group velocity is lower than the shear wave velocity in the upper mantle and it achieves shear wave velocity asymptotically.

ISCA-ISC-2012-12MSS-25

Inventory Model with Random Product Life Cycle Type Demand

Sharma Ashish[1] and Banerjee Snigdha[2]
[1]Department of Mathematics, Institute of Applied sciences and Humanities, G.L.A. University, NH-2 , Mathura 281406, INDIA
[2]School of Statistics, Devi Ahilya University, Vigyan Bhawan, Khandwa Road, Indore 452017, INDIA

Abstract: The typical Product Life Cycle (PLC) of any product consists of five distinct phases: Product development, Introduction, Growth, Maturity and Decline. Of these, only the last three phases contribute to profit and among these, the profit function increases only during the growth phase. Further, the duration of the growth phase is generally random, while in the published inventory literature, this aspect has not yet been considered. Motivated by this observation, in this paper we develop a single period probabilistic inventory model for the three phase PLC type price and time dependent demand function. Due to randomness of the growth phase, length of the increasing phase is considered to be a random variable. The beginning of the third phase allows for a sudden drop in demand. Demand comprising of backlogged shortage is sold at a discounted price. Optimal procurement and pricing policies are discussed. Conditions leading to concavity of the net profit function with respect to selling price and the time epoch at which inventory depletes completely are obtained. Solution procedure is provided. Numerical example, sensitivity analysis and managerial insights are presented.
Keywords: Inventory, Probabilistic Model, Product life cycle type demand, Backlogging, Pricing.

ISCA-ISC-2012-12MSS-26

Procurement and Pricing Policies for Inventory Models with Repeated Price Dependent Demand

Sharma Pratibha[1] and Jain Sanjay[2]
[1]Department of Mathematics, Mata Gujri college of professional studies, A.B. Road, Indore 4520017, INDIA
[2]Department of Mathematics, Govt. college, Beawar Road, Ajmer, 305001, INDIA

Abstract: There are certain commodities which have a naturally repetitive demand pattern, and for which typically, the demand is price sensitive, and the magnitude of demand changes as the selling season progresses. For such products, both pricing and procurement decisions become important for revenue management. In this paper, optimal procurement and pricing policies are discussed for a deterministic inventory model in which demand is for a finite period. The demand pattern within a period is price-dependent and it is repeated after random time interval between successive periods. Replenishment order may be placed at the end of a number of periods and the duration of shortage cannot exceed one period. Backlogged shortages are supplied at a price lower than the initial price at the next replenishment. Conditions leading to concavity of the net profit function are discussed. Sensitivity analysis is presented.
Keywords: Inventory, Probabilistic Model, Product life cycle type demand, Backlogging, Pricing.

ISCA-ISC-2012-12MSS-27

The Relationship Between Least Square and Linear Programming

Jaber Adnan Shamki
Faculty of administration and Economic Babylon university, IRAQ

Abstract: The predication is important tool for planning where the aim of any statistician is to predicate the values of dependent variable which minimize the error (the different between actual and predicated value). The least square method is classical method which used to achieve this purpose. The predication by using least square method depends on minimizing the sum square of errors. This paper introduces the restrictions of least square method,while The predication by using linear programming method depend on the assumation of minimizing the sum of absolute errors.

ISCA-ISC-2012-13MediS-01

Study of Some Bacterial Isolates Associated with Leukocytospermia in Asthenospermic Patients in Hilla City, Iraq

Hussein O.M. Al-Dahmoshi[1], Habeeb S. Naher[2], Ala'a H. Al-Charrakh[2]
[1]M.Sc. Medical Microbiol.-Bacteriology, Babylon University College of Science, IRAQ
[2]Medical Microbiol-Bacteriology, Babylon University College of Medicine, IRAQ

Abstract: One hundred asthenospermic seminal fluid specimens were collected from 100 infertile males who referred to Babylon maternity and children hospital-infertility center. It was found that 70 seminal fluid specimens had asthenospermia with leukocytospermia (First group). The rest 30 seminal fluid specimens had asthenospermia without leukocytospermia (Second group). Regarding semen cultures the results showed that 61(87.1%) of specimens of First group revealed positive bacterial culture, whereas 9(12.9%) specimens of First group showed no bacterial growth even after incubation of 48 hours. All semen specimens of Second group revealed negative bacterial culture. Gram positive bacteria constituted 44(62.9%) while gram negative bacteria constituted 26(37.1%) of isolates. Coagulase negative staphylococci (CoNS) represented by *Staphylococcus epidermides & Staphylococcus saprophyticus*) were the common type of bacterial isolates 25(35.7%) followed by *Staphylococcus aureus* 19(27.2%), *Escherichia coli* 12(17.1%), *Enterobacter aerogenes* 8(11.4%), *Acinetobacter* spp 4(5.7%) and *Moraxella* spp 2(2.9%). The virulence factors of bacterial isolates were investigated. The results showed that all *S. aureus* isolates, 18(72%) isolates of CoNS and 5(41.7%) of *E. coli* isolates and 4(50%) of *E. aerogenes* isolates produce hemolysin. Colonization factor antigens (CFA/Ø) were detected in all isolates of *S. aureus*, CoNS, *E. coli*, *E. aerogenes*, *Acinetobacter* spp. and *Moraxella* spp. (CFA/É) were expressed in 10(52.6%) isolates of *S. aureus*, 8(32%) isolates of CoNS, 8(66.7%) isolates of *E. coli*, 6(75%) isolates of *E. aerogenes*, 2(50%) isolates of *Acinetobacter* spp. and 1(50%) isolate of *Moraxella* spp. Lipase produced by 15(78.9%) and 7(28%) isolates of *S. aureus* and CoNS isolates respectively, while 9(75%) isolates of *E. coli* , 7(87.5%) isolates of *E. aerogenes* and 1(50%) isolate of *Moraxella* spp. produce lipase. Only 7(36.8%) isolates of *S. aureus* and 5(41.7%) isolates of *E. coli* were found to be protease producers. The effects of some antibiotics on bacterial isolates were investigated. The results showed that, the bacterial isolates were highly susceptible to imipenem, meropenem and ciprofloxacin whereas exhibited moderate resistance to amikacin, gentamycin and norfloxacin. On the other hand bacterial isolates revealed high rate of resistance to amoxicillin, ceftizoxime, ceftazidime, cefamandole, cefepime, amoxicillin–clavulanic acid and tobramycin.
Keywords: **Bacteriospermia,** asthenospermia, leukocytospermia, CoNS, colonization factor antigens.

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Breast Cancer and Urban Women Health Profile: A Study in Medical Geography of Dhule Dist in Maharashtra, India

Patil Jyotsna and N.M. Kazi
Dept. of Geography, S.P.D.M. College, Shirpur MS, INDIA

Abstract: Cancers are a group of diseases that cause cells in the body to change and grow out of control. Most types of cancer cells form a lump or mass called a tumor, and are named after the part of the body where the tumor first starts. Tumor is not synonymous with cancer. A tumor can be benign, pre-malignant or malignant, whereas cancer is by definition malignant. Breast cancer begins in breast tissue, which is made up of glands for milk production, called lobules, and the ducts that connect lobules to the nipple. The remainder of the breast is made up of fatty, connective, and lymphatic tissue.The exact cause of breast cancer is unknown and there are no fixed causes for breast cancer. Mythas in identifying the causes of breast cancers are more prevalent the real cause. The chance of breast cancer depends on age, as the person gets older the chances of it are more. Family history of close relative like mother, sister and daughter who has been diagnosed with breast cancer increases the risk factor. Early start onset of menses and early menopause are also associated with breast cancer. Using hormone replacement therapy might also cause it. Working in a chemical factory that uses harmful chemicals like organochlorines. Nullyparity or late childbearing also appear to be a minor risk factor in the development of breast cancer. Symptoms that are similar to those of breast cancer may be the result of non-cancerous conditions like infection or a cyst. About 80-90%of all breast cancer are ductal in origin. The ducts in the breast carry milk from the lobules or glands of the breast to the nipples. Invasive ductal carcinoma (IDC) is the most common type of breast cancer, and makes up about 80% of all breast cancers. It is a type of cancer in which the cancer cells have broken through the wall of the milk ducts and spread to other areas of the breast. From there, the cell can then spread to the lymph nodes or to distant organs like the bones, ovaries or liver. Most women with breast cancer will have some type of surgery. Surgery is often combined with other treatments such as radiation therapy, chemotherapy, hormone therapy

and/ or monoclonal antibody therapy Whatever the cause, some of the modern living and attitudes towards health and hygine among the urban women have a profilitic impact in breast cancer causes. The objective of the present study is to analyse the existing breast cancer, affected health profiles in context of urban women living habits and life style as a sample study of urban Dhule Dist. In Maharashtra

Keywords: Breast, ductal, lobular, paget, therapy.

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A Study on the Incidence of Myopia and Hypermetropia in ABO Blood Groups

Kumari Nishi and Gupta Navneet Kumar
Dept. of Biology and Environmental Sci., CSK Himachal Pradesh KrishiVishwavidyalaya, Palampur, HP, INDIA

Abstract: Present study was designed to assess the relationship of ABO blood groups with myopia and hypermetropia in district Kangra of Himachal Pradesh. The data of age, sex, ABO blood type and pathological status of patients of different diseases i.e. myopia and hypermetropia (340 myopiapatients i.e. 130 males and 210 females, and 161hypermetropia patients i.e. 47 males and 114 females) were collected from various zonal hospitals at Kangra, Dharamshala, Palampur and Dr. R.P. Medical College, Tanda, Kangra, H.P (India) and from the individuals by scheduling, interviewing and questionnaire methods. The control sample was taken from the blood bank donors. The distribution pattern of ABO blood groups was B (35.269%) > O (26.409%) > A (24.121%) > AB (14.201%). It was found that the frequency of occurrence of myopia was highest in blood group B (32.0588 %), followed by group O (29.7059 %), followed by blood group A (24.1176 %), followed by group AB (14.1176 %). The chances of occurrence of hypermetropia were same in blood groups A and O i.e. 29.81%, followed by blood group B (25.47 %) and blood group AB (14.91 %). The relative risk for the occurrence of both the diseases was found to be highest in blood group O.

Keywords: Myopia, Hypermetropia, ABO blood.

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Evaluation of Leishmanial Excretory Secretory Proteins for their Immunological Properties

Rakesh K. Singh, Gour J.K., Kumar V., and Singh N.
Depart. of Biochemistry, Faculty of Science, Banaras Hindu University, Varanasi, INDIA

Abstract: Leishmaniasis is caused by an obligate intracellular protozoan of genus *Leishmania* that affects approximately 10 million people worldwide. Leishmanial infections are primarily treated by chemotherapeutic approaches due to unavailability of vaccine. The objective of this study was to evaluate the immunomodulatory role of leishmanial excretory-secretory proteins released in culture media by protozoan parasite *Leishmania donovani* promastigotes. A total of seventeen excretory-secretory proteins of relative molecular weights 11, 13, 16, 18, 21, 23, 26, 29, 33, 35, 42, 51, 54, 58, 64, 70 and 80kDa were detected in culture medium. The proteins were divided into five fractions (F1-F5) and evaluated for their potential antigenicity to induce macrophage effector functions, lymphoproliferation and cytokines production capabilities. Two fractions, F1 (11, 13 & 16 kDa) and F3 (26, 29 & 33 kDa) significantly induced NADPH oxidase & SOD activities, NOx, TNF-á, IFN-ã and IL-12 production in stimulated RAW 264.7 macrophages. Further, these proteins also induced significant proliferation of human peripheral blood mononuclear cells along with increased production of IFN- ã and IL-12. The results strongly suggest the immunomodulatory role of excretory secretory proteins and can be further evaluated for potential vaccine candidates for leishmaniasis.

Keywords: Leishmaniasis, excretory-secretory proteins, Th1 response.

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Diagnostic Applicability of 13kDa Excretory-Secretory Protein of *Leishmania donovani*

Gour J.K., Kumar V., Singh N., Bajpai S., Pandey H.P. and Singh R.K.
Department of Biochemistry, Faculty of Science, Banaras Hindu University, Varanasi, INDIA

Abstract: The study demonstrated the applicability of excretory-secretory (ES) proteins of *Leishmania donovani* as a diagnostic marker for the disease visceral leishmaniasis. The stationary growth phase of *L. donovani* promastigotes, cultured in liquid media were used for the collection of ES proteins. The ES proteins were concentrated and recovered by passing through 3kDa cutoff membrane filter. On performing SDS-PAGE, seventeen prominent ES protein bands were obtained. Further, immunoblotting were performed with patients sera before and after treatment and got three proteins having the molecular weight of 13kDa, 33kDa and 43kDa with pretreated sera but 13kDa protein did not show seroreactivity

with post-treated sera along with endemic and non-endemic control sera. Enzyme Linked Immunosorbant Assay (ELISA) was used to check the diagnostic applicability of 13kDa protein. The results showed higher sensitivity and specificity towards 13kDa protein and we have also performed its LC-MS/MS analysis. The lack of high sensitivity and specificity of current diagnostic tools, the ES proteins may acts a potent diagnostic tool for the disease visceral leishmaniasis.

Keywords: Excretory-Secretory, seroreactivity, *Leishmania*, promastigotes.

ISCA-ISC-2012-13MediS-06

Regulation of NRAMP1 Expression by *L. donovani* Excretory-Secretory Proteins

Singh N., Kumar V., Gour J.K., Bajpai S. and Singh R.K.
Department of Biochemistry, Faculty of Science, Banras Hindu University, Varanasi, INDIA

Abstract: *Leishmania donovani* is a causative agent of fatal disease visceral leishmaniasis. Global estimate indicates that 0.2 to 0.4 million cases of visceral leishmaniasis, occur every year. The parasite has digenetic life cycle, metacyclic promastigotes are transmitted by sand fly vector to the human host, where it transform into intracellular amastigotes. It suppresses host macrophages microbicidal activity and proliferates within the hostile environment of phagolysosomes. Natural resistance associated with macrophage protein1 (NRAMP1), a cation transporter recruited on late endosomal or phagolysosomal membrane; actively effluxes out divalent cations specifically iron from phagosomal milieu to the cytosol. This creates ions deprived environment within phagolysosomes, which eventually inhibits the growth and proliferation of parasites. This study was aimed to understand expressional regulation of Nramp1 by amastigote crude excretory-secretory proteins. Mice peritoneal macrophages stimulated with amastigote crude excretory-secretory proteins for 24h produced significant ($p<0.001$) levels of superoxide anions, nitric oxide and superoxide dismutase activity. Further, we observed induced expression of iNOS and Nramp1 by 5.8 and 3.5 fold respectively as compared to control macrophages through RT-PCR expression study. This study concludes that leishmanial amastigote crude excretory secretory proteins activate redox status of host macrophages, which further upregulate NRAMP1 expression.

Keywords: Leishmaniasis, amastigotes, NRAMP1, iNOS.

ISCA-ISC-2012-13MediS-07

25kDa and 28kDa Urinary Leishmanial Antigens (ULAs) Induced Macrophage Effector Functions, Lymphocyte Proliferation and Th1 cytokines Production

Kumar V., Gour J.K., Singh N., Bajpai S. and Singh R.K.
Dept. of Biochemistry, Faculty of Science, Banaras Hindu University, Varanasi-221005, INDIA

Abstract: Increasing incidence of leishmaniasis in endemic areas required a search of ideal vaccine candidate hindered this fatal disease. In spite of significant leishmanial research in the past decades a vaccine candidate is far from reality. The present study was aim to evaluate urinary leishmanial antigens for their prophylactic efficacy. In our previous study we have identified four urinary leishmanial antigens of mol wt. 25kDa, 28kDa, 54kDa, and 60kDa.25kDa and 28kDa antigens were shown good diagnostic properties with excellent sensitivity. In this study, we report the potential of two urinary leishmanial proteins to induce macrophage effector functions, inflammatory cytokines production and human lymphocytes proliferation. The 25kDa and 28kDa proteins significantly induced NADPH oxidase ($p<0.001$), superoxide dismutase ($p<0.001$) and inducible nitric oxide synthase ($p<0.001$) activities in stimulated RAW264.7 macrophages. The release of NOx, TNF-á and IL-12 was also significantly ($p<0.001$) higher in 25kDa and 28kDa activated macrophages as compared to cells activated with other two proteins. These two proteins also induced significant ($p<0.001$) proliferation and release of IFN-ã and IL-12 in human peripheral blood mononuclear cells.

Keywords: Cytokines, macrophages, Leishmania, ULAs.

ISCA-ISC-2012-13MediS-08

Role of Microalbuminuria in Early Detection of Renal Nephropathy in type 2 Diabetes Mellitus

Dave J.
Department of Biochemistry, SCM institute of professional studies, Indore, MP, INDIA

Abstract: Type 2 diabetes is a global health problem in developed and developing countries. It has been estimated that burden of T2DM for India is projected to increase to 87 millions in 2030. Diabetic nephropathy occurs in approximately one third type 2 diabetics. In diabetic nephropathy, a number of serum markers are known to be deranged with significant morbidity and mortality. Microalbuminuria is regarded as the most important predictor of high risk for the development of diabetic nephropathy. A study was performed to determine the prevalence of microalbuminuria and its risk factors

among type 2 diabetic patients for the early detection of renal nephropathy. 48 T2DM patients from Suyash hoaspital, Indore were randomly selected for study. They were divided into 2 groups according to the duration of the disease. Group I patient had T2DM for 5- 10 years and group II patients had T2DM for > 10 years. All the biochemical parameters along with microalbuminuria were performed on Hitachi 902 fully automated analyzer. The result obtained was statistically analyzed with the help of SPSS software, version 15.0. Statistical significance was found between microalbuminuria and duration of diabetes when compared with controls. (P= 0.000). Thus we conclude from our study that the risk of microalbuminuria increases with the duration of T2DM. Persistent increase in microalbuminuria may lead to renal nephropathy. A regular screening of microalbuminuria can help in prevention of further complications.

Keywords: T2DM, microalbuminuria, renal nephropathy.

ISCA-ISC-2012-13MediS-09

Prevalence and Drug Sensitivity Pattern of Staphylococcus aureus in Post-Operative Surgical Oral and Maxillofacial Infections

Batabyal Biswajit
Department of Microbiology, Gurunanak Institute of Dental Science and Research, Panihati, Kolkata, West Bengal, INDIA

Abstract: The problem of infection has been persistent in the surgical world even after the introduction of antibiotics. Pathogens that infect surgical site can be acquired from the hospital environment or other infected patients. A total of 66 pus samples from post-operative oral & maxillofacial surgical infections were received in the Department of Microbiology, Gurunanak Institute of Dental Science & Research, Panihati, Kolkata, over a period of one year. The isolates were identified using standard laboratory procedures. All the isolates were tested for susceptibility to various commonly used antibiotics and screened for oxacillin susceptibility according to CLSI guidelines. Out of 66 pus samples received, 34(51.5%) were culture positive for *Staph. aureus*. Methicillin resistance was documented in 14 (41.2%) of the *Staph. aureus* isolates. Highest efficacy was observed with linezolid (97.0%). All MRSA isolates were 100% sensitive to linezolid. The hospital acquired surgical site infection is alarming. Hospital disinfection and treatment protocols should be practiced.

Keywords: Staphylococcus aureus, *MDR, Surgical post-operative oral & maxillofacial infections.*

ISCA-ISC-2012-13MediS-10

Detection of ESBLs genes in enteropathogenic *E. coli* (EPEC) isolates associated with Infantile Diarrhea in Kut city, Iraq

Alaa H. Al-Charrakh
Dept. of Microbiology, College of Medicine, Babylon Univ., Hilla, IRAQ

Abstract: A total of 325 fecal specimens were collected from children with diarrhea. 28 *E. coli* isolates (8.6%) were recovered and serotypically identified as EPEC. Results found that the highest numbers of the EPEC isolates were belonging to polyvalent I, with the following serotypes, O111: k58(B4) (54%), O55:k59(B5) (14%). The antibiotic susceptibility phenotypes of the EPEC isolates were also determined. All isolates (100%) were multi-drug resistants. None of the isolates were found to be resistant to imipenem. All isolates have been found resistant to at least one â-lactam antibiotic and 27 isolates (96.4%) were able to produce extended-spectrum â-lactamases (ESBLs). EPEC isolates were also examined for the presence of the following genes by Multiplex PCR assay; *bla*TEM, *bla*SHV, *bla*CTX-M, and *bla*OXA genes. PCR assay revealed that, 23 (82.1%), 26 (93%), and 2 (7.1%) of the isolates carried *bla*TEM, *bla*CTX-M, and *bla*OXA genes, respectively. No isolate carried *bla*SHV gene.

Keywords: Enteropathogenic *E. coli* (EPEC), Prevalence, Detection, ESBLs genes.

ISCA-ISC-2012-13MediS-11

Spectroscopic Analysis of Siddha Medicine Sirungi Parpam

Ariponnammal S.
Dept of Physics, Gandhigram Rural Institute, Deemed University, Gandhigram, Dindigul District,Tamil Nadu, INDIA

Abstract: Siddha medicine receives greater attention nowadays because of the immediate and permanent cure without any side effects. So, one such siddha medicine namely "Sirungi Parpam" have been selected for the present study to analyse it from the physicist point of view. The medicine Sirungi Parpam is mainly prepared from deer's horn and is used for curing rickets, coughs, tuberculosis, small pox and measles. An attempt has been made to analyse the siddha medicine "Sirungi Parpam" by using UV spectroscopy and constant deviation spectrograph. The present study reveals that this medicine "Sirungi Parpam" contains calcium and iron as major components and traces of silicon and sodium. The calcium strengthens the bone and the iron improves the Haemoglobin percentage in blood. The Silicon also helps to improve the health. These favours the Sirungi Purpam to cure the diseases like tuberculosis and Rickets permanently.

Keywords: Sirungi Parpam, siddha medicine, spectroscopic analysis

ISCA-ISC-2012-13MediS-12

Effect of Ethanolic Extract of *Pedalium murex* Linn. on age Associated Sexual Dysfunction in Male Rats

Sharma Vikas and Dixit V.K.
Natural Product Research Laboratory, Department of Pharmaceutical Sciences, Dr. H.S. Gour University, Sagar, MP, INDIA

Abstract: Scientific investigation has supported the long-held notion that sexual function in men declines with age. A variety of studies indicate that as men reach late middle and old age, the frequency of sexual activity becomes lower, libido is diminished. These findings suggest that decreasing sexual and reproductive capacity in aging men may be related to androgen deficiency in old age. The availability of the large number of sex improving drugs in the traditional Ayurvedic System is a unique and distinctive feature of this system. A special class of Rasayana drugs is known as Vrishya or Vajikarana. The Vajikaran drugs are specially recommended to people suffering from sexual insufficiency and people in advanced age losing interest in sexual act or failing in sexual performance. For assessment of sexual behavior, old age male rats were divided into five groups. The extracts (50, 100 and 150 mg/kg body weight/day) and sildenafil citrate (5mg/kg body weight/day) were administered orally for 28 days. The behavioral and sexual parameters were observed at day 0, 15, 28 and after a lapse of 7 and 14 days of discontinuance of drug treatment. The extract had a dose dependent positive effect on mounting frequency, intromission frequency and ejaculation frequency, even after a lapse of 7 and 14 days of discontinuance of drug treatment. A dose dependent effect was also observed on the FSH, LH and testosterone serum levels. Study lends support to the traditional utilization of *Pedalium murex* as a sexual stimulating agent in old age sexual dysfunction.

Keywords: *Pedalium murex,* Sexual dysfunction, Androgen, Testosterone, Vajikarana, Old age.

ISCA-ISC-2012-14PCS-01

Biodegradable Composite of *Lens Culinaris*- Synthesis, Characterization and Evaluation

Prashar Deepak, Mankotia Sushant and Sharma Mohit
Dept. of Pharmaceutical Sciences, Vinayaka College of Pharmacy, Kullu, HP, INDIA

Abstract: This research paper deals with the synthesis and characterization of *Lens culinaris* based composites using resorcinol-formaldehyde as a cross linker. The cross linked matrix was reinforced with CNTs. Acid, base and moisture resistance studies of the composites were also carried out using 5N HCl, 5N NaOH and distilled water respectively. Moreover, biodegradation studies of the composites were also done using composting method and the different stages of the biodegradation were evaluated using scanning electron microscopy (SEM). The results of acid, base resistance study concluded the fact that the synthesized composite is highly biodegradable. This cross linked matrix was found to be stable towards attack of water. The synthesized cross linked matrix shows a continuous biodegradation associated with the loss in weight under anaerobic conditions. It took nearly around 63 days for the biodegradable matrix to get completely biodegrade under anaerobic conditions. Thus, it could be concluded that preparation of biodegradable matrices and their cross linking with resorcinol-formaldehyde resin as well as reinforcement with CNTs is of great importance from technology point of view.
Keywords: biodegradable, matrix, SEM, water resistant swelling.

ISCA-ISC-2012-14PCS-02

Formulation and Evaluation of Chewable Tablets of Albendazole

Soni Ashish Kumar[1] and Prashar Deepak[2]
[1]Department of Pharmaceutical Sciences, Daksh College of Pharmacy, Chhatarpur, MP, INDIA
[2]Department of Pharmaceutical Sciences, Vinayaka College of Pharmacy, Kullu, HP, INDIA

Abstract: Evaluation parameters play a vital and critical role in deciding the best method for the preparation of various dosages forms. The Research and Development department is responsible for carrying out various researches and later deciding the most appropriate among the all. The process should be economical and at the most rationalized to be considered as the process of choice. In the present research paper, the Chewable Tablets of Albendazole is being prepared by Nonaqueous Granulation, Aqueous Granulation and Direct compression method. The formulated tablets were evaluated using both pre-formulation as well as post-formulation parameters. The cumulative drug release was also carried out to strengthen the research. The results obtained through the research proclaimed that the tablets prepared using. Direct compression method proved to be excellent in terms of Pharmacopeia standards. The results obtained were also compared with the present marketed preparation. This also cemented that the direct compression method is the most appropriate method for the preparation of chewable tablets.
Keywords: Chewable tablets, albendazole, direct compression, economical

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Synthesis and Evaluation of Biological Activities Glycosylated Chalcone Derivatives

Sharma S.K. and Kaur Amanpreet
G.H.G. Khalsa College of Pharmacy, Gurusar, Sadhar, Ludhiana, Punjab, INDIA

Abstract: In last few years, glycobiology has gained much attention because the oligosaccharide part of glycolipids, glycoproteins and other glycoconjugates are responsible for their function in various biological processes. Although a large number of synthetic methods for glycoside formation have been developed, but not all problems are well solved. This presentation demonstrates an efficient synthesis of á,â-unsaturated carbonyl compounds (chalcone) derived from 7-hydroxy-3-formyl-4*H*-chromen-4-one and substituted acetophenones and their *O*-galactosylation reaction in the presence of DTMAC (dodecyltrimethylammonium chloride) as a phase transfer catalyst leading to *O*-galactosides. Various synthetic and natural chalcone possess anti-inflammatory, antibacterial, antifungal, antiviral, insecticidal activities. Similarily, several therapeutically interesting biological activities of chromones have been reported including anticancer, anti-HIV and antioxidant properties. Likewise, various synthetic and natural *O*-glycosides also have been reported for various biological activities such as antibacterial, antifungal, antioxidant, cardiotonic activities. The remarkable properties of these categories of heterocycles oriented our attention to the synthesis of series of new heterocyclic derivatives combining chromonylidene acetophenone and carbohydrate moiety in one molecular frame as new possible biological active compounds. Herein, the synthesis of chalcones of hydroxyl chromone and their *O*-galacosides (7-*O*-*â*-D-galactopyranosyloxy-3-(3-oxo-3-arylprop-1-enyl)-chromones) starting from 7-hydroxy-3-formyl-4*H*-chromen-4-one is carried out, and their biological activity have been evaluated.
Keywords: Glycosylation, Chromone.

ISCA-ISC-2012-14PCS-04

Dual Wavelength RP-HPLC Method for Simultaneous Determination of two Antispasmodic drugs: Application in Pharmaceutical and Human Serum

Najmul Hasan[1], Nawab Sher Afridi[2], Farhan Ahmed Siddiqui[2] and Sohail Anwer[3]
[1]Department of Microbiology, Faculty of Science, University of Karachi, Karachi, PAKISTAN
[2]Department of Chemistry, Faculty of Science, University of Karachi, Karachi, PAKISTAN
[3]Department of Pharmacy, Faculty of Pharmaceutical Science, University of Karachi, Karachi, PAKISTAN

Abstract: A reverse phase stability indicating HPLC method for simultaneous determination of two antispasmodic drugs in pharmaceutical dosage forms of parenteral (injectable) and in serum have been developed and validated. Mobile phase ingredients consists of Acetonitrile: Buffer: Sulfuric Acid 0.1M (50:50:0.3 v/v/v), flow rate 1.0 ml/min using a Hibar® ìBondapak® ODS C18 column monitored at dual wavelength of 266nm and 205nm for PGD and TMP respectively. The drugs were subjected to stress conditions of hydrolysis (oxidation, base, acid and thermal degradation). Oxidation degraded the molecule drastically while there was not so much significant affect of other stress conditions. The calibration curve was linear with a correlation coefficient of more than 0.995 for both drugs. The drug recoveries fall in the range of 98.557% and 101.23% with 10pg/ml and 50pg/ml limit of detection and 30pg/ml and 150pg/ml limit of quantification for Phloroglucinol and Trimethyl phloroglucinol respectively. Method was validated in accordance to ICH guidelines and was applied successfully to quantify the amount of Trimethyl phloroglucinol and Phloroglucinol in bulk, injectable form and physiological fluid. Forced degradation studies proved the stability indicating abilities of the method.
Keywords: Trimethyl phloroglucinol, Antispasmodic, Dual wavelength, RP-HPLC, Serum.

ISCA-ISC-2012-14PCS-05

Spectrophotometric Quantitation of Mebeverine in Bulk Drug and Pharmaceutical Formulations using Multivariate Calibration Technique

Farhan Ahmed Siddiqui[1*], Najmul Hasan[2] and Nawab Sher Afridi[1]
[1]Department of Chemistry, University of Karachi, Karachi, PAKISTAN
[2]Department of Microbiology, University of Karachi, Karachi, PAKISTAN

Abstract: Mebeverine hydrochloride is 4-[ethyl (4-methoxy-á-methylphenethyl) amino] butylveratrate hydrochloride having molecular formula $C_{25}H_{35}NO_5HCl$, molecular weight 466 and melting point 105 -107 ºC. It is white or almost white, crystalline powder, freely soluble in water and ethanol (96 %), while practically insoluble in diethyl ether. A sensitive and accurate UV spectrophotometric method with multivariate calibration technique for the determination of mebeverine hydrochloride in bulk drug and different pharmaceutical formulations has been described. This technique is based on the use of the linear regression equations by using relationship between concentration and absorbance at five different wavelengths. The results were treated statistically and were found highly accurate, precise and reproducible. The method is accurate, precise and linear within the range 5-80 µg/ml (r=0.9966). Under optimized conditions the applied numerical method provides considerable resolving power, sensitivity, rapidity, and low cost for the quantitative analysis, quality control and routine analysis of subject compounds. There was no interference from the excipients i.e Povidone K 30, magnesium stearate, lactose and hydroxypropylmethylcellulose. This statistical approach gives optimum results for the eliminating fluctuations coming from instrumental or experimental conditions.
Keywords: Mebeverine, hydroxypropylmethylcellulose, reproducible.

ISCA-ISC-2012-14PCS-06

Development of New Method for Simultaneous determination of Amlodipine with H_1-receptor Antagonists: Application in interaction Studies

Saima Sher Bahadur[1], Muhammad Saeed Arayne[1], Najma Sultana[2] and Farhan Ahmed Siddiqui[1]
[1]Dept. of Chemistry, University of Karachi, PAKISTAN
[2]Dept. of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Karachi, PAKISTAN

Abstract: Today, knowledge of cardiovascular drug interactions is regarded as basic to our understanding of the pharmacologic properties of these drugs. Such interactions can be either pharmacokinetic or pharmacodynamic. Many cardiovascular drugs are metabolized in liver, generally through the cytochrome oxidase system, involving one of several isoforms. Of the various isoforms, the CYP 3A4 is the site of most hepatic interactions of cardiac drugs. A number of interacting drugs and the herbal remedy can induce the CYP 3A4 isoform. Accordingly, such drugs accelerate the breakdown of those cardiovascular drugs that are metabolized by this isoform. Thus, the inducers lessen the blood concentrations of these drugs and their therapeutic efficacy. On the other hand, blood levels of these same drugs are increased by those agents that act as inhibitors of the CYP 3A4 isoform. Amlodipine is a long acting calcium channel blocker, used as an

antihypertensive and in the treatment of angina. Antihypertension is a long term therapy. Co prescription of other drugs during this period can lead to drug interactions that could be lethal sometimes. Many of the interactions of calcium channel blocker are pharmacodynamic. H_1- receptor antagonists, often referred simply as antihistamines, are competitive inhibitor of histamine receptor H_1 and are used to treat allergies. Antihistamines are known to cause drug-drug interactions. Since antihypertension is a long term therapy, coadministration of amlodipine with antihistamines is possible and can lead to drug-drug interactions. Present study investigates possible changes in *in vitro* availability of amlodipine in presence of commonly used antihistamines like citrizine, levocitrizine, fexofinadine and buclizine were used in these studies. These studies were carried out in buffer of pH 4, 7.4 and 9 at 37 C° on B.P. dissolution apparatus 2007. Analysis was done using UV-Visible spectrophotometer and RP-HPLC. Mobile phase consisted of acetonitrile and phosphate buffer. The pH of mobile phase was maintained at 2.8. The flow rate was maintained at 1 ml/min. $ë_{max}$ for determination of interactions of amlodipine, citirizine and levocitrizine was 240nm and for amlodipine, buclizine and fexofinadine it was 230 nm. It was found that antihistamines studied bind to amlodipine and affect the therapeutic efficacy of these drugs.
Keywords: Amlodipine, H_1-receptor, cardiovascular, pharmacodynamic.

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Eco-Friendly Estimations of Poorly Water-Soluble Drugs Using Hydrotropic and Mixed-Hydrotropic Solubilization Technique

Maheshwari Rajesh Kumar
Dept. of Pharmacy, S.G.S.I.T.S., 23- Park Road, Indore, MP, INDIA

Abstract: The present presentation deals with the applications of hydrotropy in titrimetric and spectrophotometric analysis of poorly water-soluble drugs precluding the use of organic solvents. Some poorly water-soluble drugs have been selected as model drugs. Hydrotropic solubilization phenomenon has been used to analyze these drugs without the help of organic solvents. Some drugs have been analyzed by titrimetric analysis while other drugs, by spectrophotometric analysis. It is evident from the literature that various organic solvents like methanol, chloroform, acetone, dimethyl formamide and ethanol have been employed for solubilization of poorly water-soluble drugs to conduct their titrimetric analyses. Drawbacks of organic solvents include their higher costs, toxicities and pollution. Similarly, various organic solvents like methanol, chloroform, ethanol, dimethyl formamide, benzene, hexane, acetone, toluene, carbon tetrachloride, diethyl ether and acetonitrile are widely used in spectrophotometric estimations of poorly water-soluble drugs. Most of these organic solvents are toxic, costlier and sources of pollution. Inaccuracy in spectrophotometric estimations due to volatility of organic solvents is another drawback of these solvents. Hydrotropic solutions of sodium benzoate and urea in distilled water have successfully replaced toxic organic solvent methanol (which is used in Indian Pharmacopoeial and British Pharmacopoeal methods) for uv spectrophotometric estimations of tablets of poorly water soluble drug, tinidazole. Like this a large number of poorly water soluble drugs have been analyzed using various hydrotropic agents precluding the use of organic solvents. Hydrotropic solutions of sodium benzoate in distilled water has successfully replaced toxic organic solvent chloroform (which is used in Indian Pharmacopoeial and British Pharmacopoeal methods) for titrimetric estimations of tablets of poorly water soluble drug, ibuprofen. Similarly DMF has been replaced by hydrotropic solutions of sodium benzoate in distilled water for frusemide bulk drug. Like this a large number of poorly water soluble drugs have been analyzed using various hydrotropic agents precluding the organic solvents. Hydrotropy and mixed hydtorotropy has thus been wisely employed for UV spectrophotometric and titrimetric estimations.
Keywords: Hydrotropic, Solubilization, hydrotropy.

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In Vitro Drug Interaction Studies of Fexofenadine with Enoxacin, Levofloxacin and Sparfloxacin

Hina Shehnaz, M. Saeed Arayne, Najma Sultana and Amir Haider
Dept. of Environmental Studies, Sindh Madressatul Islam University, Karachi, PAKISTAN
Dept. of Chemistry, University of Karachi, PAKISTAN

Abstract: An *in vitro* availability of fexofenadine in the presence of quinolones (enoxacin, levofloxacin and sparfloxacin) was carried out on a BP 2005 dissolution test apparatus. Fexofenadine second generation non sedative H_1 receptor antagonist is an active carboxylic acid metabolite of terfenadine. These reactions were performed at different pH environment (2, 4, 7.4 and 9) at 37 ºC human physiological temperature, at 48 and 60ºC. By the alteration of Beer's law through simultaneous equation of two components system the reactions were studied. The ultraviolet method is simple and quite accurate. The results from interaction and kinetic studies reveal that these drug interactions are not temperature dependant, but pH dependant and occur more frequently in more acidic or basic medium.
Keywords: Fexofenadine, terfenadine, in-vitro, quinolone, UV spectrophotometer, Beer's law, dissolution test apparatus, interactions.

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Synergistic Effect of Different Medicinal Plants of Indian Origin against Skin Carcinogenesis

Huma Ali and Savita Dixit
Department of Chemistry, MANIT, Bhopal, MP, INDIA

Abstract: Medicinal plants are used in various traditional system of medicine and possess various pharmacological applications. Oral administration of combine extract of different parts of *Azadirachta indica* (leaves), *Aloe barbandesis* (leaves), *Ocimum sactum* (leaves), *Tinospora cordifolia* (stem), *Triticum aestivum* (straw) in equal proportion was found to reduce skin carcinogenesis in mice initiated with 7, 12-dimethyl benz(a) anthracene and promoted using croton oil. This extract was administered at a concentration of (1000 mg/kg and 2000 mg/kg body weight) continued three times weekly for 16 weeks. The development of skin carcinogenesis was assessed by histopathological analysis. Reductions in tumor size and cumulative number of papillomas were seen due to combine extract treatment. Average latent period was significantly increased as compared to carcinogen treated control. Combine extract produced significant decrease in the activity of serum enzyme serum glutamate oxalate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), alkaline phosphatase (ALP) and bilirubin when compared with the control. They significantly increased the levels of enzyme involved in oxidative stress glutathione (GSH), superoxide dismutase (SOD) and catalase. The elevated level of lipid peroxidase in the control group was significantly inhibited by combine extract administration. The results from the present study suggest the chemo preventive effect of the combine extract or synergistic effect of individual extract of above mentioned medicinal plants in DMBA croton oil induced skin carcinogenesis in swiss albino mice.
Keywords: Skin carcinogenesis, chemoprevention, medicinal plants.

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Synthesis and Activity of the Related Substances of Risperidone: An Antipsychotic Agent

Gupta Poonam and Saxena Ajet
Dept. of Chemistry, Bareilly College, Bareilly, UP, INDIA

Abstract: Risperidone is a typical orally active antipsychotic agent for bipolar disorders. It belongs to the chemical class of benzisoxazole derivatives and chemically, it is 4-[2-[4-(6-fluorobenzo[*d*]isoxazol-3-yl)-1-piperidyl] ethyl]-3-methyl-2, 6 diazabicyclo [4.4.0] deca-1, 3-dien-5-one. European pharmacopeia related substances A, B, C, D, E and G and others (impurities) were obtained during laboratory process and in plant process as well. The present work describes the detection, origin, synthesis, characterization and control of the related substances, thereby improving the commercial process. Since one of the impurity C, known as paliperidone, showed potent activity and is being used as, a second generationantipsychotic drug, therefore activity of the other related substances are of our interest.
Keywords: Risperidone, benzisoxazole, antipsychotic, impuritiesA, B, C, D, E and G..

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Sulphur Mustard- A Threat

Singh Deeksha, Rathore K.S., Pathak Devendra, Pathak Kamla and Gautam Anshoo
Rajiv Academy for Pharmacy, Mathura, INDIA

Abstract: Amongst the chemical warfare agents sulphur mustard (SM) is an epitome of all. Major use of SM was in World War I and Iran-Iraq war. Due to extremely stable nature, easy availability of precursors and a simple method of synthesis make it a chemical weapon of choice by the military and the terrorist groups. Chemically, it is bis (2-chloroethyl) sulphide and also known as mustard gas. It is a strong bifunctional alkylating cytotoxic, mutagenic vesicant that has capability to cause severe skin, eye and respiratory damages at very low concentration which results into incapacitance, reduction in fighting efficiency and demoralization. Because of these destructive properties on vital organs and additionally, lack of effective and satisfactory antidotes contribute in making it a dangerous chemical weapon. Despite of rigorous research efforts on the development of efficient antidote for mustard agent toxicity still there is disappointment and so far no satisfactory and recommended treatment has evolved. Although, the Chemical Weapon Convention is in force still there is a threat of chemical attack from terrorists or accidental exposure during destruction of stockpiled chemical weapons and it is of prime importance to develop an efficient treatment for mustard agent toxicity. In general, antidotes to chemical warfare agents are considered as "orphan drugs" as they are not a regular phenomenon and the pharmaceutical industry has very little interest in them.
Keywords: Sulphur mustard, chemical weapon, antidote.

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Formulation and Evaluation of Colon Targeted Drug Delivery of Non-Steroidal Anti-Inflamatory Drug

Ara Patel and K.S. Rathore
BN Institute of Pharmaceutical Sciences, Udaipur- 313002, Rajasthan, INDIA

Abstract: The aim of the present study was to develop a site specific drug formulation allowing targeted drug release in colon for rheumatoid arthritis in circadian rhythm using synthetic polymers such as polymethacrylate derivatives. The core tablets of aceclofenac were prepared using wet granulation containing a superdisintrigrant. Eudragit S100 and Eudragit L100 were used as pH dependent polymers for coating the tablet in different proportion. Dissolution study of all the formulations were carried out in media with different pH (1.2, 4.8, 5.4, 6.8, 7.5). *In-vitro* drug release from all prepared formulation clearly indicated that formulation containing Eudragit S100: L100 in the ratio 4:1 with the coating level of 3% w/w they more suitable for delivery of aceclofenac to colon at different physiological pH condition. This formulation showed no change in physical appearance, content and dissolution profile upon storage at 40°C 75% relative humidity for 3 month. The study showed that, lag time prior to drug release was highly affected by the ratio of Eudragit S: Eudragit L. The dissolution data revealed that the level of coating and the ratio of polymers are very important to achieve an optimum formulation.
Keywords: Colonic drug delivery, Rheumatoid arthritis, Circadian rhythm, Aceclofenac, Eudragit S100, Eudragit L100.

ISCA-ISC-2012-14PCS-13

Anti-Anaemic, Acute Toxicity and Proximate Analysis of *Jatropha Tanjorensis* Ellis and Saroja

Timothy O.[1] and Idu M.[2]
[1]Department of Plant Biology and Biotechnology, University of Benin, PMB 1154, Benin City, NIGERIA
[2]Benson Idahosa University, PMB 1100, Benin City, NIGERIA

Abstract: The study evaluated the effect of aqueous leaf extract of *Jatropha tanjorensis* on haemolytic anaemia induced by phenyl hydrazine in rabbits and its acute toxicity on the treated animals. The proximate composition of the plant was also determined. Fifteen healthy rabbits of both sexes, weighing between 1.2 kg and 1.9 kg, were distributed evenly in five groups, A-E. Anaemic condition was induced by subcutaneous administration of 2.5% neutralized phenyl hydrazine hydrochloride at a dose of 30 mg kg^{-1} body weight. Heamatological indices, body weight and mortality of the extract treated groups were compared against the controls. The major trace elements and mineral constituents were determined using standard phytochemical laboratory procedures. The PCV, Hb, RBC, MCV and MCHC were significantly increased after treatment of anaemic rabbits with the aqueous suspension of *J. tanjorensis*, while the WBC reduced significantly ($P<0.05$). Significant weight gain and complete absence of death among the groups after 14-day treatment period suggest low toxicity of the extract. The relatively high levels of protein, fat, K, Mg, Ca and Fe makes *J. tanjorensis* resourceful nutritionally.
Keywords: Anti-anaemic, Acute toxicity, proximate analysis, *Jatropha tanjorensis,* phenyl hydrazine.

ISCA-ISC-2012-14PCS-14

Comparative Investigation of Immunomodulatory Activity of Methanolic and Dichloromethane: Methanolic Extract of Murraya Koenigii- An In-Vitro Study

Juneja Mohit and Sharma Komal
Bhupal Nobles' College of Pharmacy, Udaipur, Rajasthan, INDIA

Abstract: The use of plant as immune-stimulants or immune-suppressants has a traditional history and the use of natural products with curative and remedial property is as ancient as human civilization and, for a long time. The ayurvedic system of medicine is one of the oldest systems of medicine and includes various ethnopharmacological activities such as immunostimulation, tonic, neurostimulation, anti-ageing, antibacterial, antiviral, antirheumatic, anticancer, adaptogenic, etcThe methanolic extract of *M. koenigii*leaves has been reported to produce immunomodulation in humoral and cell mediated immune response to ovalbumin, phagocytic activity by carbon clearance test, nitric oxide (NO) release from murine peritoneal macrophages and cyclophosphamide induced myclosuppression. With this background the immunomodulatory activity of methanolic and DCM:Methanolic extract of *Murrayakoenigii* was evaluated on *in-vitro* assay of lymphocyte proliferation and NO release from peritoneal macrophages. Significant increase in NO production by mouse peritoneal macrophages in DCM:Metanolic in comparison to methanolic extract at 100 µg/ml was detected in culture supernatant indicated increase in phagocytic activity of macrophages.The methanolic extract showed increase in lymphocyte proliferation in comparison to DCM:Methanolic extract at 100 µg/ml concentration. Present study revealed thatDCM:Methanolic extract showed better immunomodulatory activity than methanolic extract in *in vitro* assays.

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Synthesis, Characterization and Antimicrobial Activity of Various Dibenzothiazpines Derivatives

Tailor Jitesh H., Patel P.C. and Malik G.M.
Department of Chemistry, Navyug Science College, Surat, Gujarat, INDIA

Abstract: In present study number of substituted dibenzo[b,f][1,4] thiazepines analogues carrying 2-chloro N-phenyl acetamide moiety attached N-10 position have been synthesized and evaluated using NMR,IR and Mass spectra. Antibacterial properties also examined for synthesized derivatives against gram positive and gram negatives bacteria. The results of NMR, Mass and IR spectra agreed to the theoretical data of the synthesized compounds N-(Substituted phenyl)-2-(11-oxodibenzo [b,f][1,4]thiazepin-10(11H)-yl) acetamide derivatives showed good significant antimicrobial activity.

Keywords: Dibenzo [b,f][1,4]thiazepines, 2-chloro N -phenyl acetamide, NMR, IR , antimicrobial activity.

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Effect of Melt Sonocrystallization on Physicochemical, Pharmacotechnical and Pharmacokinetic Properties of Piroxicam

Gupta P.S.[1], Sharma V.[2] and Pathak K.[2]
[1]Devsthali Vidyapeeth, College of Pharmacy, Lalpur, Rudrapur 263148, Uttarakhand, INDIA
[2]Department of Pharmaceutics, Rajiv Academy for Pharmacy, Mathura-281001, UP, INDIA

Abstract: The purpose of this study is to investigate the suitability of a novel particle designing technology i.e. melt sonocrystallization (MSC) for a drug that belongs to BCS Class II (low solubility and high permeability) comes under the category, NSAIDs known as piroxicam (PXM). The melt sonocrystallization technology was applied on PXM to improve the undesired pharmacotechnical, physicochemical and biopharmaceutical properties that hinder the formulation related process and its performance *in vitro* and *in vivo.* Melt sonocrystallization process was applied on piroxicam (OFPXM) and melt sonocrystallized piroxicam (MSC PXM) was produced. The obtained product was subjected to pharmacotechnical and physicochemical characterization and was found to be superior on OFPXM in terms of micromeritic characterization by using Dynamic Laser Scattering, rheological characterization, equilibrium solubility, intrinsic dissolution rate, scanning electron microscopy, differential scanning calorimetry, X-ray powder diffraction, stability study (reversion study). The melt sonocrystallized form of piroxicam was also evaluated for formulation related parameters by preparing immediate release tablets (F1 – F4) and these tablets were subjected to comparison with the tablets prepared using OFPXM (F0) for various official and non-official evaluation parameters. It was found that among all the prepared formulations, formulation F2 was found to be the best in terms of diameter and thickness, hardness, % friability, weight variation, percent drug content, *in-vitro* disintegration time and *iv-vitro* dissolution testing in 0.1N HCl (pH 1.2) and phosphate buffer I.P. (pH 7.4). The *in-vivo* performance F2 was also estimated comparison with F0 by conducting *in-vivo* pharmacokinetic study applying rabbit animal model by using white Newzeland rabbits. The *in-vivo* pharmacokinetic study was conducted for 48 hours and the samples were analyzed by HPLC. The data obtained was subjected for the estimation of various pharmacokinetic parameters such as C_{max}, T_{max}, AUC, *Ka*, *Ke*, $t_{1/2}$, AUMC, MRT, Fr, Vd, and Cl_T. In a nut shell application of MSC resulted in MSC PXM lead to porous particles, exhibiting desired pharmacotechnical properties, with increased solubility, higher stability along with improved performance in vitro and in vivo, in comparison to OFPXM. So it can be said that melt sonocrystallization technique is a technique with advantages over other approaches and can be exploited in area of particle design for drugs with pharmaceutical properties.

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Synthesis, Characterization and Anthelmintic Evaluation of Novel Benzimidazoles

Chhabra Sumit[1], Shah Kamal[1*], Shrivastava Sushant K.[2] and Mishra Pradeep[1]
[1]Institute of Pharmaceutical Research, GLA University, Mathura-281406, UP, INDIA
[2]Department of Pharmaceutics, Institute of Technology, Banaras Hindu University, Varanasi- 221005, UP, INDIA

Abstract: A novel series of substituted 2- methylbenzimidazole (3a-3h, 4a-4h andb 5a-5b) were synthesized by the reaction of different secondary amines and cyclopentyl bromide with substituted 2-methylbenzimidazole. These compounds were characterized by IR, ^{1}H NMR, Mass spectral data and elemental analysis. Novel compounds were screened for their anthemintic activity. Compound 3b, 3e, 3g and 4c showed good anthelmintic activity on Pheretima posthuma using albendazole as standard.

Keywords: Mannich base, benzimidazole derivatives, anthelmintic, albendazole.

ISCA-ISC-2012-14PCS-18

Isolation and Characterization of Novel Bio-Material Obtained from Achras Zapotilla

Singh Arun Kumar[1*], Singh Anita[2] and Satheesh Madhav N.V.[3]
[1]Devsthali Vidyapeeth College of Pharmacy, Lalpur, Rudrapur, Uttarakhand, INDIA
[2]Department of Pharmaceutical Sciences, Kumaun University, Bhimtal, Uttarakhand, INDIA
[3]Dehradun Institute of Technology Faculty of Pharmacy Dehradun, Uttarakhand, INDIA

Abstract: In pharmaceutical drug delivery system the excipients play a vital role in the formulation of dosage forms, suitable for administration to patients. Biomaterials isolated from plant source serve as an alternative to synthetic products, because of biocompatibility, low cost, nontoxic, relatively wide spread availability, biodegradable, better patient compliance, environmental-friendly, renewable in nature and acceptable by the regulating authorities compared to their synthetic counterparts. Therefore, novel natural excipients continue to be developed to meet the needs of drug delivery systems. The biomaterials have versatile application in different pharmaceutical dosage forms like matrix and reservoir controlled release system, film forming materials, buccal films, microcapsule, microspheres, nanoparticles, viscous liquid formulations like ophthalmic solutions, suspensions, emulsion, and their applicability and efficacy has been proved. The objective of this investigation was to isolate an effective novel biomaterial from the pulp of Achras Zapotilla, belonging to Sapotaceae family. The biomaterial was isolated by simplified economical method and was evaluated for its phytochemical, morphological characteristics by SEM analysis, identified by chemical, thermal and analytical methods (like NMR, MASS, X-Ray diffraction, IR spectroscopy and DSC), solubility studies, melting range, pH, swelling index, ash values, test for sulphate, chloride, lead and arsenic, loss on drying, density, compressibility index and angle of repose etc. The evaluated parameters were found within the limits prescribed in various compendia or reference literature.

ISCA-ISC-2012-14PCS-19

Isolation and Characterization of Novel Bio-Material Obtained from Phaseolus Vulgaris

Singh Anita[1*], Singh Arun Kumar[2] and Satheesh Madhav N.V.[3]
[1]Department of Pharmaceutical Sciences, Kumaun University, Bhimtal, Uttarakhand, INDIA
[2]Devsthali Vidyapeeth College of Pharmacy, Lalpur, Rudrapur, Uttarakhand, INDIA
[3]Dehradun Institute of Technology- Faculty of Pharmacy Dehradun, Uttarakhand, INDIA

Abstract: Pharmaceutical product developments involve various components in addition to the active ingredients and excipients. It plays a very important role in drug delivery and targeting of API. Bio–materials which are isolated from natural origin have certain advantages over synthetic ones such as low cost, natural origin, less toxicity, bio-acceptable, environmental-friendly processing, easily available, biodegradable, better patient compliance and renewable in nature. The plant derived product like gum and mucilage have versatile application in formulation different pharmaceutical dosage forms like sustain and controlled release system, film forming agents, bucco-adhesive films, microcapsule, microspheres, nanoparticles, viscous liquid formulations like ophthalmic solutions, suspensions, emulsion implants and their applicability and efficacy has been proved . Therefore, current investigation was undertaken to explore one such natural novel biomaterial from the pulp of Phaseolus vulgaris collected from local market, a member of Fabaceae family. The biomaterial was isolated by solvent addition method and was characterized by chemical, thermal and analytical methods (like NMR, MASS, X-Ray diffraction and IR spectroscopy), morphological characteristics by SEM , solubility studies in different solvent, melting range, pH, swelling index, ash values, test for sulphate, chloride, loss on drying, density, compressibility index and angle of repose etc. All the characterized parameters were compared with the various parameters mentioned in various compendia or reference books and it was found that these were within the limit indicating the suitability of biomaterial for formulation development.

ISCA-ISC-2012-14PCS-20

Sedative and Depressant Activity of *Citrus Medica* Linn

Sah Archana N.[1], Juyal Vijay[2] and Melkani A.B.[3]
[1]Department of Pharmaceutical Sciences, Faculty of Technology, Kumaun University Nainital-263136, Uttarakhand, INDIA
[2]Uttarakhand Technical University, Dehradun, Uttarakhand, INDIA
[3]Department of Chemistry, Kumaun University, D. S. B. Campus Nainital, Uttarakhand, INDIA

Abstract: Traditionally distilled water of *C. medica* L. fruit is used as a sedative. The aim of this study was to evaluate the CNS depressant and sedative effect of distilled water of fruit and compared with similar activity of fruit peel oil. The

models used for evaluation were locomotor activity and rota-rod test in albino mice. Two doses of distilled water of fruit, 5 and 10 ml/kg and two doses of peel oil, 1 and 2 g/kg were used in the study. All samples were administered 30 min before the experiment. Essential oil of peel was analyzed by GC and GC-MS. The administration of 10 ml/kg dose of distilled water of fruit significantly reduced the locomotor activity by 28.76% while 5 ml/kg dose reduced the activity by 10.52%. Both doses of peel oil, 1 and 2 g/kg significantly decreased the locomotor activity by 50.55% and 54.2%, respectively. The percentage of animals classified as able or unable to stay on the rota-rod was recorded in another model; 80% animals of control group were able to hold rota-rod for 1 min. With 5 and 10 ml/kg distilled water of fruit only 20% animals were able to perform the test. Animals treated with 1 g/kg peel oil, 40% mice were able while with 2 g/kg peel oil all animals were unable to perform the test. Distilled water of fruit may contain all components present in the peel oil along with other volatile components of fruit. Peel oil showed the presence of limonene as major constituent (76.8%) with linalool. Both constituents are reported to have CNS depressant and sedative activity and may also be responsible for the same activity of *C. medica* fruit. The results of this study indicated that distilled water of fruit and peel oil produced depressive and sedative effect.
Keywords: *C. medica,* sedative, CNS depressant, limonene.

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Preparation and Characterization of Biopolymeric Nanoparticles as Drug Delivery Vehicles: A Comparative Study

Sai Sateesh Sagiri[1], S. Lakshmi N.[1,2] , Behera B.[1] and Pal K.[1*]
[1]Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela–769 008, Orissa, INDIA
[2]Department of nanoscience and technology, Bharatiyar University, Coimbature, T.N, INDIA

Abstract: In recent years, the use of biopolymeric nanoparticles as vehicles for drug delivery has increased exponentially. In the present study, chitosan and gelatin nanoparticles were prepared by ionic gelation and desolvation methods respectively. Salicylic acid was used as the model drug. The nanoparticles were characterized using SEM, XRD analysis and FTIR spectrophotometric studies. SEM micrographs showed the formation of spherical nanoparticles. XRD studies indicated more crystalline nature of the chitosan nanoparticles while FTIR studies indicated the presence of salicylic acid in the salicylic acid-loaded nanoparticles. *In vitro* drug release experiments were carried out to understand the mechanism of drug release. It was observed that the drug delivery from the nanoparticles is affected by their nature of amorphousity. Drug release studies indicated that the nanoparticles may be used as carriers for various bioactive agents.

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Surface Modified Multi-walled Carbon Nanotubes for Effective Cancer Therapy

Mehra N.K. and Jain N.K.
Pharmaceutics Research Laboratory, Dept. of Pharmaceutical Sciences, Dr. H.S. Gour Vishwavidyalaya, Sagar, MP, INDIA

Abstract: Carbon nanotubes (CNTs) constitute a narrative nano-technological component that is in the nascent point of travelling around for drug delivery application. Multi walled carbon nanotubes (MWCNTs) have unique outstanding physicochemical properties attracted great attention in the field of targeted drug delivery in cancer theragnostics. MWCNTS was functionalized by targeting ligand folic acid (FA) on to the surface of engineered CNTs followed by sub sequential functionalization. The developed FA-PEG-MWCNTs formulations were characterized by UV/Vis, FTIR spectroscopy and electron microscopy. The *in-vitro* release of DOX from various functionalized MWCNTs was studied using the dialysis diffusion technique and the greatest entrapment was found to be 92.0±2.4 due to ð-ð stacking interactions in case of FA-PEG-MWCNTs. Then developed DOX/FA-PEG-MWCNTs formulation was used to assess the toxicological, cell uptake and pharmacokinetics and tissue-distribution studies on using MCF-7 cell line. Finally, it can be concluded that the doxorubicin loaded FA-PEG-MWCNTs could be a potential carrier for cancer therapy due to their high drug loading capacity and controlled releases.

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Development and Characterization of Dithranol Loaded Nanostructured Lipid Carriers for Topical Treatment of Psoriasis

Agrawal Udita and Vyas Suresh P.*
Drug Delivery Research Laboratory, Department of Pharmaceutical Sciences, Sagar, MP, INDIA

Abstract: The present study aim to explore the potential of nanostructured lipid carriers (NLCs) loaded with anti psoriatic drug, dithranol (DIT) for the topical delivery. DIT- loaded NLCs were prepared by solvent diffusion method and were characterised for particle size, shape, zeta potential, polydispersity index, DIT encapsulation efficiency.Fluroscent imaging.

In vitro skin permeation and skin irritation were performed also performed. The results showed that DIT-NLCs were sperical in shape with particle size of 295±17.1 nm. The zeta potential, PDI and entrapment efficiency were found to be "25 ± 3.7 mV, 0.329±0.011 and 52.61±1.89% respectively. DIT loaded NLCs showed significantly reduced permeation rate constant and skin irritation (10.75±0.32 ìg/cm2/h and 1.0 respectively) as compared with the plain DIT solution (23.22±0.64 ìg/cm2/h and 2.3 respectively). The skin-retention studies revealed significantly higher SC retention of DIT loaded NLCs (36.75%) as compared to plain DIT solution (10.94%). Futher, fluroscent images showed that the dye loaded NLCs exhibits deposition in viable layer, indicating that the enhanced accumulation of dithranol within the skin which might help optimize targeting of this drug to the epidermal and dermal sites. Thus, DIT- NLCs have potential to be developed as a modern control released topical application for the treatment of psoriasis.

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Peptide Conjugated PEGylated Polymeric Nanoparticles as Dual Targeting Drug Delivery System for Solid Tumor

Gupta Madhu, Agrawal G.P. and Vyas S.P.
Department of pharmaceutical sciences, Dr. H.S. Gour University Sagar, MP, INDIA

Abstract: Certain tumor cells overexpress a membrane-spanning molecule, aminopeptidase N (CD13) isoform, which is the receptor for peptides containing the NGR motif. NGR-modified docetaxel (DTX)-loaded PEG-b-PLGA polymeric nanoparticles (NGR–NP-DTX) were developed and evaluated for their in vitro potential in HT-1080 cell line. The NGR–NP-DTX containing particles were about 148 nm in diameter with spherical shape and high encapsulation efficiency. Cellular uptake was confirmed both qualitatively and quantitatively by confocal laser scanning microscopy (CLSM) and flow cytometry. Both quantitatively and qualitatively results confirmed the NGR conjugated nanoparticles revealed the higher uptake of nanoparticles by CD13-overexpressed tumor cells. Free NGR inhibited the cellular uptake of NGR–NP-DTX, revealing the mechanism of receptor mediated endocytosis. In vitro cytotoxicity studies demonstrated that NGR–NP-DTX formulation was more cytotoxic than unconjugated one, which were consistent well with the observation of cellular uptake. Hence, the selective delivery of NGR-NP-DTX formulation in CD13-overexpressing tumors represents a potential approach for the design of nanocarrier-based dual targeted delivery systems for targeting the tumor cells and vasculature.

Keywords: Solid Tumor, Docetaxel, Targeting, NGR ligand.

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Recent Advances in Transungual Drug Delivery System: A Promising Therapy for Treating Nail Infections

Singh G., Harbola P., Sharma D.K. and Gupta P.S.
Devsthali vidyapeeth, College of pharmacy, Lalpur, Rudrapur- 263148, Uttarakhand, INDIA

Abstract: Recent advancement in topical drug delivery therapy is highly desirable in treating nail disorders due to its localized effects, which results in minimal adverse systemic events and possibly improved retention time onto the nail. The transungual drug delivery systems have been developed for treating nail psoriasis and a variety of fungal nail infections. These infections include onychomycosis, onychatrophia, leuconychia, onychogryposis, koilonychias and other similar infections. These diseases mainly occur due to continuous nail moistening. Conventional topical formulations available in the market for treating nail disorders comprise of creams, gels and other antifungal formulations. The absorption of drugs into the nail unit and to the nail plate, is highly desirable to treat nail disorders, however, the effectiveness of topical therapies is limited by minimal drug permeability through the nail plate hence now a day nail lacquer and nail penetration enhancers are used. Medicated nail lacquers are the formulations that are used for transungual drug delivery for maximal antifungal efficacy. The film formed after application of nail lacquer on the nail surface acts as a drug depot that permits drug release over a long period of time. Some factors which affect permeation of drug through the nail plate are type of solute, molecular size of solute particles, hydrophilicity/ hydrophobicity, charge, and the nature of the vehicle.

Keywords: Transungual, Onychomycosis, Nail, Nail Plate, Psoriasis.

ISCA-ISC-2012-14PCS-26

Development and Evaluation of Sustained Release Tablets of Diclofenac Sodium Using Novel Tamarind Bio-Polymer as Release Modifier

Dwivedi Devendra Kumar[1], Singh Arun Kumar[1] and Singh Anita[2]
[1]Devstahli Vidyapeeth College of Pharmacy, Lalpur, Kiccha Road, Rudrapur, Uttarakhand, INDIA
[2]Department of Pharmaceutical Sciences, Kumaun University Bhimtal, Nainital Uttarakhand, INDIA

Abstract: Sustained release medication increases therapeutic drug efficacy, reduces dosing frequency and improved patient compliance in comparison to conventional form. Natural polymer, isolated from, plants, animals, and microbes

have gained advantages over synthetic counterparts such as low cost, better patient compliance, less toxic, wide spread available, and easily accepted by regulatory athorities. The objective of this investigation was to isolate the bio-polymer from Tamarind and used as release modifier for the model drug Diclofenac sodium. Five batches of sustained release tablets of Diclofenac sodium were prepared by wet granulation technique using different drug: tamarind bio-polymer ratio as 1:1, 1:1.5, 1:2, 1:2.5 and 1:3 and designated as T1-T5. The formulated tablets were evaluated for various official and non official tests. The evaluation of fabricated tablets was within acceptable limits. In-vitro drug release study was performed in simulated gastric fluid without pepsin (0.1N HCl, pH 1.2) for 2 hours and in simulated intestinal fluid (Phosphates buffer pH 6.8 I.P.) for 10hours. Batch T4 showed the better sustained release property and optimum drug release with the 10 hours of study. Thus, it is clear from the studies done so far that matrix tablets prepared using tamarind bio-polymer retarded drug release approximately more than 12 hours. Thus tamarind bio-polymer could be a suitable alternative matrix forming polymer for sustained release formulations.
Keywords: Tamarind biopolymer, sustained release, diclofenac sodium, swelling index.

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Surface Engineered Dendrimers Based Nanoplatforms for Treatment of Cancer

Jain Keerti and Jain N.K.
Pharmaceutics Research Laboratory, Department of Pharmaceutical Sciences, Dr. H. S. Gour University Sagar, MP, INDIA

Abstract: Clinical treatment of cancer is limited by development of resistance by cancer cells and narrow therapeutic index of anticancer agents. These limitations can be overcome by selective and targeted delivery of anticancer drug and attacking the malignant tissue at more than one step. There is clinical evidence that suggest the combination of anti-angiogenic agents with chemotherapy or radiotherapy resulted in synergistic anticancer effect. This study is based on the synthesis of dendrimers followed by modification of surface amino groups of dendrimers to introduce anti-angiogenic activity. Simultaneously the conjugated dendritic system was evaluated for sustained and controlled release of anticancer drug. The developed formulation was evaluated for drug release, toxicity, and drug loading propensity, anti-angiogenic activity and cancer targeting potential. In the result of this study it was observed that the formulation exhibited the anti-angiogenic and anticancer activity with selective uptake by cancer cells, in addition to high drug payload, reduced toxicity and sustained drug release behavior. The surface modified dendritic systems showed the promising potential for the treatment of fatal disease, cancer *via* sustained and targeted delivery of anticancer drug owing to the nanometric nature of dendrimer. This study suggest that the developed formulation would prove as a promising strategy in the field of medicine for treatment of cancer as it will attack malignant tissue at two step by inhibiting angiogenesis and killing the proliferating cancer cells.

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Treatment of Cancer with Anti-Angiogenic Carrier for Anticancer Agent: Dual Attack on Cancer

Jain Keerti and Jain N.K.
Pharmaceutics Research Laboratory, Department of Pharmaceutical Sciences, Dr. H. S. Gour University Sagar, M.P., INDIA

Abstract: In this study PPI dendrimers were modified peripherally with arginine to mimic the surface structure of an endogenous angiogenesis inhibitor endostatin. Simultaneously the developed surface engineered dendrimers were evaluated as site specific delivery vehicle for anticancer drug, doxorubicin hydrochloride. Synthesis of PPI dendrimers and conjugation of arginine to surface group was confirmed by IR, NMR and TEM. Doxorubicin was loaded by equilibrium dialysis method. The developed formulation showed the initial rapid release followed by sustained release characteristics in *in vitro* and *in vivo* studies. The formulation exhibited significant anti-angiogenic activity in the *in vivo* chick embryo chorioallantoic membrane (CAM) assay. Formulation showed the selective uptake by cancer cells in the *ex vivo* cell uptake studies. Endostatin inhibits angiogenesis by competing for heparan sulfate proteoglycan (HSPG) binding site, which act as co-receptors for some important angiogenic factors including bFGF. Endostatin demonstrates arginine clusters in its structure, which is responsible for binding to HSPG. Arginine conjugated dendrimers showed the anti-angiogenic activity by mimicking the surface structure of endostatin and exhibited the sustained and targeted delivery of anticancer drug owing to the nanometric nature of dendrimer.
Keywords: Cancer, Angiogenesis, Endostatin, Doxorubicin.

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Phytochemical and Pharmacological evaluation of *Eclipta alba* (L.) Hassk

Kumar Ajita, Kelkar Tushar S. and Bhalearo Satish A.

Environmental Sciences Research Laboratory, Department of Botany, Wilson College, Mumbai 400 007, INDIA

Abstract: In the twenty first century, the word Herbal is a wand, opening the doors of marketing strategies. The herbal products today symbolise safety in contrast to the synthetics that are regarded as unsafe to human and environment. We depend largely on plants either directly or indirectly for various purposes like medicines, flavouring agents, aromatic qualities.The plant *Eclipta alba* (L.) Hassk, commonly known as Bhringraj or False daisy from Asteraceae family known for its medicinal properties in alternative systems of medicines like Ayurved, Unani, Sidha, Homeopathy, Chinese etc. It is also used in holistic manner and as one of the hair tonic in beauty therapy. Its main active constituents are wedelolactone, demathyl wedelactone. They are proved to be antihepatotoxic. The plant is reported to possess antimicrobial, antiinflamatery, antiviral, hepatpprotective, analgesic, immune – modulatory, antioxidant, antihyperglycemic, antihaemorrhagic properties. It possesses good rejuvenator property. It is well known as promoter for blackening and growth of hair. Recent studies showed an antivenom property & corrosion pickling inhibitor action on mild steel in hydrochloric acid. A wide range of chemical compounds including coumestans, alkaloids, thiopenes, flavonoids, polyacetylenes, triterpenes and their glycosides have been isolated from this species. This comprehensive review throw a light on ethnomedicinal uses, chemical composition, and the pharmacological profile of *eclipta alba* as medicinal plant.

Keywords: Herbal, *Eclipta alba* (L.) Hassk, Bhringraj, antihepatotoxic, wedelolactone, demathyl wedelactone, rejuvenator, alkaloids

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Acetazolamide Encapsulated Dendrimer Nanocarrier: A Novel Approach for Glaucoma Management

Vijay Mishra and Jain N.K.

Pharmaceutics Research Laboratory, Department of Pharmaceutical Sciences, Dr. H. S. Gour Central University, Sagar M.P., INDIA

Abstract: Glaucoma is becoming an increasingly important cause of blindness. The present investigation was aimed to synthesize and evaluate the potential of poly (propylene imine) (PPI) dendrimers as nano-architectures for ocular delivery of acetazolamide (ACZ) in the treatment of glaucoma. The PPI dendrimers were synthesized by divergent approach taking ethylenediamine as dendrimer core. The prepared plain as well as drug loaded dendrimers were characterized by different parameters such as TEM, SEM, NMR and FT-IR spectroscopy. Entrapment efficiency, *in-vitro* drug release kinetics, effect of drug-dendrimer system on surface morphology of RBCs and hemolytic toxicity were also determined. *In-vivo* studies included the determination of ocular irritation index, ocular residence time and intra-ocular pressure (IOP) reduction profile. *In vivo* study revealed that in lower concentrations the aqueous solutions of formulations were weakly irritant to the eye. The sustained and prolonged reduction in IOP is probably due to the slow as well as controlled release of drug from formulations. This shows that drug entrapped in dendrimers can be used for higher retention in ocular *cul-de sac*. The PPI dendrimer based formulation seems to be promising candidate to develop as ophthalmic vehicle with prolonged ocular drug residence time and IOP lowering effect in treatment of glaucoma, more safely, both *in vitro* and *in vivo*.

Keywords: Glaucoma, Dendrimer, Ocular irritation index, Intra-ocular pressure, Acetazolamide

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A Review Article on Dental Implant as Novel Drug Delivery System

Rajni Karakoti, Arun Kumar Singh, Dinesh Kumar Sharma

Devsthali Vidyapeeth College of Pharmacy, Lalpur , Rudrapur, INDIA

Abstract: Dental implant for the treatment of dental and periodontal diseases was developed for site specific delivery of drug. Modern Sustained-release delivery systems are designed and it allow the effective targeting of drugs for treating. Systemic administration has been useful in treatment of periodontal diseases, but repeated and long term use of systemic drugs will lead resistant strains and side effects such as change in intestinal flora, drug interactions and super infection. These problem can be overcome if drug to be used is applied locally. Concentration of drug in tissues can be enhanced by incorporating the drug into controlled release delivery system and implant them directly into periodontal pocket. A local drug delivery system delivering the therapeutic agent at sufficient concentration inside the pocket and minimizing the side effects associated with systemic drug administration. Recently, intensive research for other methods is performed all over the world in order to improve the effectiveness of delivery systems.

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Formulation of Herbal Shampoos and their Comparitive Evalution with that of Marketed Formulations

Bhatt V., Tiwari V. and Singh A.
Devsthali vidyapeeth, College of pharmacy, Lalpur, Rudrapur- 263148, Uttarakhand, INDIA

Abstract: All shampoos are basically water and detergent mixtures. The main objective of this study was to eliminate harmful materials from shampoo formulations and substitute them with a safe natural product. Formulators must play an active role in educating the consumers about the potential harmful effects of synthetic detergents and other chemical additives present in shampoo. Shampoos are formulated by taking salts, saponins, plant extract (Ritha, Amala, Harada), glycerine, methyl paraben and EDTA. Formulation was prepared by slight heating and adding the weighed quantity of herbal ingredients. Then the marketed formulation have been evaluated with that of marketed ones. Results shows that it is possible to formulate a herbal shampoo that is better than the synthetic ones.
Keyword: EDTA,marketed shampoo, plant extract (Ritha, Amala, Harada).

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Transungual Route: A Novelistic Plateform in Drug Delivery System

Aslam R., Singh A.K., Sharma D.K.
Devsthali Vidyapeeth, College of Pharmacy, Lalpur, Rudrapur, INDIA

Abstract: Transungual drug delivery is most effective in treating nail disorders due to its localized effects, which results in minimal adverse systemic effects and improved residence time. Most of the nail infections (90% - 95%) are generally caused by dermatophytes and rest being by yeasts and molds. Infection is identified by discolored, thickened, and dystrophic nails. The cause of infection is mainly due to continuous exposal of nail to warm and moist environment. Nail plate is main route for penetration of drug. Permeability through nails is however quite low. Current research on nail permeation focuses on altering the nail plate barrier by penetration enhancers, chemical treatments as well as physical and mechanical methods (nail abrasion and nail avulsion). Conventional formulation like gels, creams and also oral antifungals are available for treatment of nail infection. Medicated nail lacquers are recent advancement used for transungual drug delivery for maximal antifungal activity. The film formed after application of nail lacquer on the nail surface leads to continuous penetration of active principle by depot preparation and also enhances the beauty of nails. This field could be explored for the treatment of Psoriasis and Onychomycosis.

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Natural Polymers and their Versatile Apporach in Drug Delivery Systems

Singh S., Singh A.K., Sharma D.K.
Devasthali Vidyapeeth, College of Pharmacy, Lalpur, Rudrapur, Uttarakhand-263148, INDIA

Abstract: The natural polymers and biomaterials have experienced enormous growth in size and sophistication over in the terms of both scientific base and technological and commercial developments. Now a day, natural materials are integral parts of human health care systems because of their low side effects, low toxicity and higher degree of usefulness than the synthetic products. Natural materials are also preferred because the non-allergic and non-inflammatric responses in comparison of synthetic products. These polymers are obtained from various parts of the plants and extracted by using different techniques. The polymers which are obtained from natural sources can be used in the preparation of the drug products, food products and/or cosmetics also. This situation has forced the researchers in academia and in Industry to undertake extensive research in these fields.
Keyword: natural polymer,biomaterial.

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Protective Effect of *Rheum emodi* Rhizomes Extract on Gastric Mucosal Damage Induced by ethanol

Kaur Amandeep and Sharma S.K.
Rayat College of Pharmacy, Railmajra, Nawanshahar, Punjab, INDIA

Abstract: The present study aimed to explore the antiulcer and antioxidant potential of ethanolic extract of rhizomes of *Rheum emodi* (EERE) in experimental induced ulcers. Effects of two selected doses (50 mg/kg and 100 mg/kg, *p.o.*) of EERE were studied on ethanol-induced gastric mucosal injury in rats. The extract showed significant anti-ulcer activity

against ethanol-induced ulcers in rats by showing remarkable reduction in the ulcer index (P <0.05) comparable to that produced by the omeprazole (20 mg/kg) (standard drug) when the extract was fed at the dose of 100 mg/kg. Further, the integrity and vascularity of the mucosa was kept integrated when extract was administered at the dose of 100 mg/kg as compared to standard drug and EERE at a dose of 50 mg/kg. Administration of ethanol causes marked increase in the level of Thiobarbituric acid reactive substances (TBARS) and have a detrimental effect on integrity of stomach. In addition to this there is marked attenuation in the level of tissue glutathione (GSH), superoxide dismutase (SOD) and tissue nitrite. Treatment with EERE (100 mg/kg) significantly reduced the level of TBARS and improves stomach integrity. Further, there is a marked increase in the level of endogenous antioxidant in rats treated with EERE at a dose of 100 mg/kg. No significant improvement was obtained in *R. emodi* administered at a dose of 50 mg/kg. It was found that *R. emodi* at a dose of 100 mg/kg was more potent than *R. emodi* at 50 mg/kg in protecting against ethanol-induced ulcers. Therefore, the results of this study suggest the probable anti-ulcer and antioxidant activities of *R. emodi* and justify its use in traditional medicines.
Keywords: *Rheum emodi*, Ethanol-induced ulcer model, oxidative stress parameters, ulcer index.

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A Review On: Nanoparticles

Tewari H. and Singh A.
Devsthali vidyapeeth, College of pharmacy, Lalpur, Rudrapur, Uttarakhand, INDIA

Abstract: It has been noticed for more than 15 years that there has been a worthy of consideration research attentiveness in the drug delivery area using minute separate particles delivery system as carriers for small and large molecules. Among the use of minute separate particles for drug delivery system nanoparticles have been used as an important parameter to improve and change the pharmacodynamic and pharmacokinetic properties of a drug molecules. It is considered that nanoparticle targets the delivery of the drug in the cells, which helps in the reduction of the dose and due to these two aspects the chances of side-effects and the toxicities related to dose is less. There are various properties of nanoparticles which are used in targeted drug delivery, which includes delivery of cells as well as organelle targets. The targeted drug delivery is of great importance because it helps in the transportation of the drug directly to the affected area under various conditions and thereby treats it deliberately, with no side effects or any other effect on the body. Nanoparticles take an advantage of the biological pathway, to gain the payload delivery to cellular and intracellular targets.

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A Review Article on Natural Versus Synthetic Polymers

Gautam Seema, Singh A.K. and Sharma D.K.
Devsthali Vidyapeeth College of Pharmacy, Rudrapur, INDIA

Abstract: Polymers have been successfully employed in the formulation of solid, liquid and semi-solid dosageforms and are specifically useful in the design of modified release drug delivery systems. Bothsynthetic and natural polymers have been investigated extensively for this purpose but the use ofnatural polymers for pharmaceutical applications is attractive because they are economical, readilyavailable, non-toxic, capable of chemical modifications, potentially biodegradable and with fewexceptions, also biocompatible.Some polysaccharides obtained from plants such as carrageenan,alginate, konjac glucomannan, gum arabic, guar gum and locust bean gum have shown excellentpotential as carrier materials in matrix type controlled release dosage forms such as microparticles, beads and tablets. *Some in vitro* studies demonstrated the potential of rosin for the production of effective nanoparticulate drug deliverysystems andgum arabic toprepare a monolithic osmotic tablet system. The synthetic biopolymers represent the macromolecules synthesized withbiomolecules. For example Synthetic polymer hydrogels they constitute a groupof materials, used in numerous biomedical disciplines, in ophthalmology ascontact lenses and in surgery as absorbable sutures, aswell as in many other areas of clinical practice to curesuch illnesses as diabetes mellitus, osteoporosis, asthma,heart diseases and neoplasms.
Keywords: Biopolymers, Carrageenan, Konjac, Controlled release dosage forms, Hydrogels.

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Randomized Control Double Blind Study to Clinically Assess the Effect of Standardized Extract of *Bacopa Monniera* on Lumbar Spine Disk Herniation Injury

Kumar Tirath, Amardeep and Singh H.K.
Department of Pharmaceutical Sciences, Kumaun University, Nanital, Uttarakhand, INDIA

Abstract: In order to clinically assess the effect of standardized extract *Bacopa monniera* family (Scrophulariace) in sub-acute and chronic pain condition due to lumbar spine disk herniation injury, infection, trauma, facet irritation,

degenerative disk diseases. We conducted a randomized control double blind study, comparing within groups on BESEB-CDRI-08 treated group (n=20).The drug is administered orally 300 mg (1 capsule) per day for 120 days. Base line studies do not show significant result. All the patients showed improvement within drug treated group in posture, in physical movements, in numbness and muscle strength on Visual Analog Scale (VAS) during the 4 month of study compared to baseline. Results of comparative study within *Bacopa monniera* treated group are as follows: numbness (pd"0.001) shows significant result in 2nd,3rd,4th month of study, physical movement (pd" 0.001) shows significant result in2nd, 3rd 4th month of the study, posture (pd" 0.01) in 2nd,3rd 4th month of the study and muscle strength (p d"0.001) shows significant result in 2nd, 3rd and 4th month of study respectively. All parameters were statistically analysed by one way ANOVA using Jindal Sigmastat version 2.0 (turkey test). *Bacopa monniera* can provide economical and safer way to prevent, cure and diagnosis of disease and pathological condition of pain.

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Community Health Needs Assessment: Assessing Risk and Opportunities for Change

Saraswat Pranit
Faculty of Pharmacy, Shri Ram Murti Smarak College of engg & technology, Bareilly, INDIA

Abstract: Community health needs assessment is a process that describes the state of health of local people, enables the identification of the major risk factors and causes of ill health and enables the identification of the actions needed to address .A community health needs assessment is not a one-off activity but a developmental process that is added to and amended over time. It is not an end in itself but a way of using information to plan health care and public health programmes in the future. The steps of community health needs assessment are included the collection of relevant information that will inform the nurse about the state of health and health needs of the population, and analysis of this information to identify the major health issues. Deciding on priorities for action, planning public health and health care programmes to address the priority issues, implementing the planned activities, Evaluation of health outcomes.

Keywords: Implementing the planned activities, Assessment, Public Health

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Overview of Comparative Study of Microwave and Conventional Synthesis and Biological Activity of Pyrimidines

Chandak Shilpa[1], Sharma Vimukta[2] and Dubey Arti
[1]Department of Engineering Chemistry, VITS, Indore, MP, INDIA
[2]B.M. College of Pharmacy, Indore, MP, INDIA

Abstract: Heterocyclic rings have played an important role in medicinal chemistry, serving as key templates central to the development of numerous important therapeutic agents. Chalcone derivatives are important starting materials for the synthesis of different classes of heterocyclic compounds such as pyrazolines, thiophenes and pyrimidines, etc. most of these compounds are highly bioactive and are widely used in pharmaceutics. Pyrimidine derivatives play a vital role in many biological processes. Pyrimidines are six-member heterocyclic ring compounds composed of nitrogen and carbon. Pyrimidine terms a combination of the words pyridine and amidine because of the structural similarity to those compounds. They are present throughout nature in various forms and are the building blocks of numerous natural compounds. Pyrimidine ring system is being present in nucleic acids, several vitamins, coenzymes, uric acid and some marine microorganisms (e.g. Sponge). The nitrogen hetero cycles in general and pyrimidines in particular are found in several biologically active natural products and depict considerable therapeutic potential. Chalcone derivatives have been prepared by condensation of various substituted aryl aldehydes and acetophenone in alkaline ethanol, while pyrimidine-2-one derivatives have been prepared by the combination of chalcones and urea under conventional and ultrasonic conditions. The compound substituted ethyl-1,2,3,6-tetrahydro-4-methyl-2-oxo/thioxo-6-phenyl-1-(4,6-diphenyl-1Himidazolyl-2-yl)pyrimidine-5-carboxylates have been synthesized by condensing substituted Benzil and enthyl-1-formyl-1,2,3,6-tetrahydro-4-methyl-6-phenyl-2-oxo/thioxo-pyrimidine-5-carboxylates in the presence of ammonium acetate were dissolved in glacial acetic. The quinolinylpyrimidine derivatives were prepared by the condensation of quinolinyl chalcones with urea (or thiourea) under basic conditions by using both conventional and microwave heating. The wide applicability of microwave activation in chemical reaction is due to cleaner products, higher yield, shorter reaction time, operational simplicity and minimization of side reactions in recent years the microwave heating under solvent free reaction conditions on an inorganic solid support is a better alternative to conventional methods. The effect of microwave irradiation in chemical reaction is a

combination of the thermal and non-thermal effect. Characterization and structural elucidation of the products have been done on the basis of chemical, analytical and spectral analysis. The newly prepared pyrimidine derivatives were screened for biological activities.

Keywords: Pyrimidine derivatives, Chalcone derivatives, Quinolinylpyrimidine, heterocyclic Biginelli compounds, chemotherapeutic agents.

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Formulation and Evaluation of a Sustained-Release Tablets of Diclofenac Sodium Using Natural Polymers as Release Modifier

Masiwal M.C., Gupta P.S., Singh A.K. and Sharma D.K.
Devsthali Vidyapeeth, College of Pharmacy, Lalpur, Rudrapur, Uttarakhand, INDIA

Abstract: The main object of the present study was to develop matrix tablets of diclofenac sodium with a natural polymer known as guar gum and to study its functionality as a matrix forming agent for formulating once-daily sustained release (SR) matrix tablets of model drug Diclofenac sodium. SR matrix tablets of Diclofenac sodium were prepared by using different drug : polymer ratios i.e. 1:1, 1:1.5, 1:2, 1:2.5, 1:3, and various batches were prepared, designated as G1-G5. Drug-polymer mixtures were subjected to preformulation studies. Wet granulation method was opted for manufacturing of SR matrix tablets. Prepared tablets were subjected to physicochemical studies, *in- vitro* drug release and stability studies. The physicochemical properties of tablets were found within the limits. No chemical interaction between drug and gums was seen as confirmed by IR studies. Among the formulations studied, formulation G4 having concentration ratio (1:2.5) showed sustained release of drug for 12 hours with cumulative percent release 92.5%. Results of the present study indicated the suitability of guar gum polymers in the preparation of SR matrix tablets of diclofenac.

Keywords: Sustained release, Hydrophilic gums, guar gum, Microcrystalline cellulose.

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Future Contraceptive: Herbs and Molecular Target for Distressed Implantation Window

Bhadoriya Santosh Singh, Shrivastava Arpit, Jain Raj Kumar and Jain Prateek
ADINA Institute of Pharmaceutical Sciences, Sagar, Madhya Pradesh, INDIA

Abstract: From many years herbal medicine and liquid preparations have been employed with the goal of preventing, and or disrupting pregnancy. Previously it was impossible for us to say that how effective they were, we don't have much information of these herbs and about their molecular targets as well as mechanism. Unfortunately, developments of herbal contraceptives from botanicals are still under narrow consideration among community of world scientists and western countries research priorities. China and India are two Asian countries that have done quite a bit of research on herbal contraceptives. New techniques of molecular biology have travel around and explore numerous molecular, biochemical and cellular changes take place in process of fertilization and long term conceptions (implantation) window. These changes are primarily responsible for fertility, endometrial receptivity, proper implantation as well as normal development of fetus. Some are herbs that may directly interfere with these cellular and molecular signaling through variety of target molecules such as gene, prostaglandins (PGs), cell adhesion molecules (CAM_S), mucins, cytokines, cadherins and immunoglobulin, this interference may upset the conception window and produce the adverse effect during pregnancy. Therefore present study proposed a hypothesis concerning unexplored herbal targets and few probable mechanism of herbal drug interference that can affect the pregnancy and fetus development throughout conception period.

Keywords: Herb, Contraceptive, Cytokines, Prostaglandins, Interleukins, implantation, pregnancy.

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Synthesis and Anthelmintic Screening of Some Novel Thienopeptide Analogs

Dahiya Rajiv[1] and Mourya Rita[2]
[1]Department of Pharmaceutical Chemistry, Globus College of Pharmacy, Bhopal, MP, INDIA
[2]Department of Pharmaceutical Chemistry, VNS Faculty of Pharmacy, Bhopal, MP, INDIA

Abstract: S-heterocyclyes are widely known for their pharmacological potential and are associated with different bioactivities like antimicrobial, cytotoxic, analgesic and anti-inflammatory activity. Keeping in view the biopotency of S-heterocyclyes as well as taking advantage of biodegradability and biocompatibility of amino acids and peptides, present study was directed toward the synthesis of a novel series of methylated thienopeptide analogs. 5-(2,4-dimethylphenyl)-2-thiophenecarboxylic acid was prepared by diazotization of 2,4-methylaniline followed by subsequent coupling with 2-thenoic acid in presence of $CuCl_2$. In order to synthesize the novel series of potent peptide analogs, 5-

(2,4-dimethylphenyl)-2-thenoic acid was coupled with various amino acids and peptide methyl esters using dicyclohexylcarbodiimide as coupling agent and pyridine as base. Selected ester derivatives were hydrolyzed using lithium hydroxide to get corresponding peptides. Structures of all the newly synthesized peptide analogs were characterized by IR, $^{1}H/^{13}C$ NMR, MS spectral data and elemental analysis, and evaluated for anthelmintic activity. Most of the compounds showed potent antihelmintic activity against earthworms *E. eugeniea*, *M. konkanensis* and *P. corethruses*, when compared to standard drugs.

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Histone Deacetylase Inhibitor as a Novel Anticancer Agent: A Review

Saraswat Pranit[1] and Nagori B.P.[2]
[1]SRMSCET Bareilly, UP, INDIA
[2]Lachoo Memorial College of Sci. and Technology, Jodhour, INDIA

Abstract: Histone Deacetylase (HDAC) inhibitors are an exciting new class of drugs that are targeted as anti-cancer agents. These compounds can induce growth arrest, apoptosis and/ or terminal differentiation in a variety of solid and hematological neoplasms in patients with advanced disease. Accumulation of acetylated histones in both normal and tumour cells can be used as a marker of biological activity. Hydroxamic acid based compounds are among the most promising HDAC inhibitors as potential anti-cancer drugs. There is still much to be understood about the family of HDACs, including the varying functions of different HDACs and the range of HDAC substrates. The development of selective HDAC inhibitors might be important in defining their biological role and potential as therapeutic agents. Clinically, the optimal dose, timing and duration of therapy, as well as the most appropriate agents to combine with HDAC inhibitors, are still to be defined.

Keywords: Nucleosome, Histone, Acetylase, Deacetylase, HDAC inhibitors.

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Pharmacological and Therapeutical Applications of *Asparagus Racemosus Willd*

Joshi Tanuj
Faculty, Department of Pharmaceutical Sciences, Bhimtal Campus, Kumaun University, Nainital, INDIA

Abstract: Humans in today's modern world are surrounded by several diseases. Most of these diseases are due to the hectic lifestyle and stress. Allopathic drugs which are used today to cure or prevent the various diseases encountered by people these days have numerous side effects. So, current research is now diverted towards finding various herbal medicines which will not only cure diseases but also prevent these diseases from affecting the human beings. *Asparagus racemosus* Willd. is a herbal plant which could be the answer to today's stress filled life and numerous diseases. It belongs to the family Asparagaceae. It is commonly called Satavari Satawar or Satmuli in hindi. In India the knowledge regarding herbal drugs and their properties have been known since time immemorial. *Asparagus racemosus* is described in Ayurveda as a 'rasayana' herb. 'Rasayan' is a group of plant drugs known to promote physical and mental health, improve defence mechanisms of the body and enhance longevity. Various studies have found that *Asparagus racemosus* root contains phenolic compounds, flavonoids and vitamin C and other chemical constituents . The chemical composition of *Asparagus racemosus* Willd. is very beneficial to the health of human beings. It has got several pharmacological and therapeutical applications like phytoestrogenic effect, effect on male reproductive system, adaptogenic effect, antiageing effect, effect on neurodegenerative diseases , antidyspepsia effect, antidiarrhoeal effect, cardioprotective effect, antimicrobial effect, immunoadjuvant effect, antiulcer effect, antitussive effect, antioxidant effect, diuretic effect, antilithic effct, antidiabetic effect, anticancer effect, antiallergic effect, anthelmintic effect, anabolic action, effect on respiration, and enzyme activity. This review could be useful in providing a path for newer scientific research in the field of herbal and ethnopharmacological medicines. We should encourage studies on the local knowledge about herbs in various regions of the world and supplement them with the latest technologies possible. Thus *Asparagus racemosus* can be developed into a herbal formulation for a variety of health disorders.

Keywords: *Asparagus racemosus* Willd., Phenolic Compounds, Flavonoids, Vitamin C, Adaptogenic Effect, Antiageing Effect, Cardioprotective Effect, Antidiabetic Effect, Anticancer Effect.

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Application of Sound Propagation in the Persian Gulf and Oman Sea

Seyed Majid Mosaddad
Department of Physics, Shoushtar Branch, Islamic Azad University, Shoushtar, IRAN

Abstract: As it is a real concept in nature, more than 2/3 of the earth surface is covered by water such as Seas and oceans. Surface water on the earth are linked together. Knowing phenomena and organisms underwater has been a purpose in human life; why this aim is used in some industries and sciences. Sound is known as a mechanical wave with many applications in seawater. Obstacle, organisms, objects and even each purpose like a driver, a mass of particular fish or sediment types on the bottom could be recognized and be studied when their physics and properties would be known. Acoustics as an applied science as a regards of much research importance using mechanical waves moving underwater is a helpful tool to reach this useful scientific aim. In this paper following a one year study and research, horizontal and vertical sound propagation created by some particular instruments will be analyzed.
Keywords: Sound, Wave, Frequency.

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Investigation of Sound Channel in the Persian Gulf and Oman Sea

Seyed Majid Mosaddad,
Department of Physics, Shoushtar Branch, Islamic Azad University, Shoushtar, IRAN

Abstract: The Persian Gulf in south of Iran is important strategically why is used for fisheries, shipping and some other application. Sound channels as a physical phenomenon is studying in all of water surface, why it is used in marine science such as military. This subject has been studied and considered in the Persian Gulf and to some extend in the Oman sea. This event happens in the Persian Gulf seasonally, but it takes place there weakly, because this water basin is a shallow water resource. Of course forming seasonal and weak sound channel in the Persian Gulf will be compared with in the Oman sea. It could be seen that sound channel formation in the Oman sea happens strongly due to that it happens in deep water basins contemporarily.
Keywords: Sound Channel, Persian Gulf, Oman Sea.

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Study of Sound propagation in the Sea Water (Case Study: Persian Gulf)

Mehdi Delphi[1] and Jasem Majidipour[2]
[1]Young Researchers Club, Shoushtar Branch, Islamic Azad University, Shoushtar, IRAN
[2]Municipal Management, Shakhes Pazhooh Research Center, Isfahan, IRAN

Abstract: The Persian Gulf in south of Iran is important strategically why is used for fisheries, shipping and some other application. Sound channels as a physical phenomenon is studying in all of water surface, why it is used in marine science such as military. This subject has been studied and considered in the Persian Gulf and to some extend in the Oman Sea. This event happens in the Persian Gulf seasonally, but it takes place there weakly, because this water basin is a shallow water resource. Of course forming seasonal and weak sound channel in the Persian Gulf will be compared with in the Oman Sea. It could be seen that sound channel formation in the Oman sea happens strongly due to that it happens in deep water basins contemporarily.
Keywords: Sound, Velocity, Propagation, Profile, Persian Gulf.

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Forensic Parameter Measurements in Buffalo Milk by Attenuation Coefficient Using Gamma Ray Energy

Chaudhari Laxman[1] and Sanjeev B. Girase[2]
[1]Nuclear Research Laboratory, Department of Physics, Nowrosjee Wadia College, Pune, MS, INDIA
[2]Department of Physics, S.V.S.S. Dadasaheb Rawal College, Dondaicha Dist. Dhule, MS, INDIA

Abstract: The Mass attenuation coefficients are very important parameter used in Industry, agriculture, defence, food technology and also in forensic applications. Anti social elements are mixed elements like lacto powder, urea, sabudana powder etc. in milk samples. Their mixtures are very dangerous to human health. By using gamma ray the above parameter are studied for milk and urea admixture with different concentrations. The results shows the density of admixture milk sample at different concentrations V/s attenuation coefficients, the attenuation coefficients decreases exponentially with increasing the density.. The result represented in the form of graph and other results are in progress.. Exponential decay was observed. This validates the gamma absorption law.
Keywords: Attenuation coefficient, gamma ray energy sources, gamma ray spectrometer, NaI (Tl) detector, etc.

ISCA-ISC-2012-15PhyS-05

TiO_2 Microstructure, Fabrication of Thin Film Solar Cells and Introduction to Dye Sensitized Solar Cells

Dhonde Mahesh and Jaiswal Rajesh
Dept. of Engg. Physics, Prestige Institute of Engineering and Science, Indore, MP, INDIA

Abstract: Various materials and technologies were developed such as use of single crystals, poly crystalline materials, thin film and nano particles deposition etc. To reduce the cost and spectral shift in the visible region methods of doping by nano particles of noble metal/ organometals this also enhances the conversion efficiency under different parametric variations. Different types of solar cells were developed in order to minimize the cost of dollars per watt and to maximize selectivity of the wavelength of solar spectrum in an effective manner. The objective of the present study is to review the progress in the solar cell technology along with problems associated with different solar cells utilized in the visible range of sunlight and the methods to optimize the efficiency and the cost.
Key Words: solar cell, nano particles, thin film.

ISCA-ISC-2012-15PhyS-06

Annealing effect on the particles size of Gd_2O_3: Eu^{3+} Doped Nanophosphors

Tamrakar Raunak Kumar[1] and Bisen D.P.[2]
[1]Department of Applied Physics, Bhilai Institute of Technology Bhilai house Durg, Chhattisgarh, INDIA
[2]Department of Physics and Astrophysics, Pt. Ravishnakar Shukal University, Raipur, Chhattisgarh, INDIA

Abstract: Rare-earth-doped nanoparticles are promising materials for fluorescent labeling, as they are characterized by a high Stokes shift, narrow emission spectra, long lifetimes, minimized photobleaching, and low toxicity. In this study, Gd_2O_3:Eu^{3+} nanophosphor particles were synthesized by using a low- temperature solution-combustion method using urea as a reducing agent and their structural and optical characteristics were investigated for various temperatures With increasing the annealing temperature, correlative optical properties of Gd_2O_3:Eu^{3+} phosphors were studied. The effects of the annealing temperature on the particles were studied. It was found that the particle sizes of the nanophosphors are increasing with increasing temperature. Their structures were determined using X-ray diffraction. The as-combusted Gd_2O_3: Eu^{3+} powders have been characterized by x-ray diffraction. The results of XRD show pure phase can be obtained, the average crystallite size could be calculated as 22, 45 and 75nm for the samples annealed at 400, 500 and 600 °C, respectively.
Keyword: Gd_2O_3: Eu^{3+}, combustion methods, XRD, Annealing.

ISCA-ISC-2012-15PhyS-07

Structural study of HfC_xN_{1-x} alloy

Bhardwaj Purvee and Singh Sadhna
High pressure Research Lab., Department of Physics, Barkatullah University, Bhopal, MP, INDIA

Abstract: We have used the Extended Interaction Potential (EIP) model (including the zero point energy effect in three body interaction potential model) to study the structural properties of HfC_xN_{1-x} alloy. Phase transition pressure, volume collapse and the elastic properties from the concentration using Vegard's law were observed for the present HfC_xN_{1-x} alloy. Our calculated results have revealed reasonably good agreement with the available results on the phase transition pressures and volume collapses for end point members. **PACS No:** 62.20.de, 62.20.dq, 62.50.-p, 64.00.00
Keywords: Rare earth, phase transition, high pressure, volume collapse, elastic property.

ISCA-ISC-2012-15PhyS-08

Nanomaterials: An Overview

Banerjee M.
Nanoscience and Nanotechnology Laboratory, School of Physics, Devi Ahilya University, Indore, INDIA

Abstract: Nobel laureate Prof. Richard Feynman laid the foundation stone of the world of Nanomaterials when, in his famous lecture on 29 December 1959; he pronounced, "There is plenty of room at the bottom". He gave scientists a dream to fulfill and challenges to meet. Half a century later, we find that nanomaterials are playing important role in each and every field of science and have revolutionized technology as well as life style of common man. Nanomaterials are the materials, which have at least one dimension of the order of few nanometers especially in the range of 1-100 nm. At this small size, the materials exhibit unique structural features and novel properties, not exhibited by their bulk counterpart. The nanomaterials may exist as Nanoparticles, Nanowires, Ultrathin films, Nanoporous materials and many more. The sizes as well as the structures of nanomaterials are tailored to cater to a particular application. In this talk, I intend to present an overview of Nanomaterials- their preparation, properties and applications.
Keywords: Nanomaterials, revolutionized technology, nanowires.

ISCA-ISC-2012-15PhyS-09

Explanation of Chorus Emissions Recorded at Indian Antarctic Station, Maitri (L = 4.5) using the Backward Wave Oscillator Theory

Patel R.P.
Department of Physics, M.M.H. College, Ghaziaba, UP, INDIA

Abstract: In this paper, vlf chorus emissions recorded at Indian Antarctic Station, Maitri (geographic latitude 70^0 46/ S, longitude 11^0 50/ E, geomagnetic latitude 66^0 .03/ S, longitude 53^0 .21/E, L -4.5), on 5 February 2001 has been analyzed. On the basis of dynamic spectrogram of these emissions, the characteristics features have been carried out. The magnetic activity is quite during the observation period. It is found that each chorus elements originate from the upper edge of the underlying hiss band. To explain the observed spectrogram of these chorus emissions, a possible generation mechanism is presented based on a model of a backward wave oscillator and recent nonlinear wave growth theory (Omura etal. 2008). It is found that the seeds of vlf chorus emissions with rising frequency are generated near the magnetic equator as a result of a nonlinear growth mechanism that depends on the wave amplitude. According to this theory, the frequency sweep rate, resonance velocity, interaction length etc is computed. Our results are good agreement with other workers.
Keywords: Chorus Emissions, spectrogram, nonlinear wave.

ISCA-ISC-2012-15PhyS-10

Correlative Study of Geomagnetic Stroms with Sun-Spot Numbers in Solar Cycle 23

Singh S.G., Saxena A.K. and Shrivastava Gopal Narayan
Department of Physics, A.P.S. University, Rewa, MP, INDIA

Abstract: Stars are large scale magnetized plasma structures originating from closed magnetic field regions on the sun & are the most energetic solar events in which vast amount of solar plasma materials are expelled from the solar corona into interplanetary space. Geomagnetic storms in a major component of space weather & provide the impact for many other components of space weather. In present study, correlation between sunspot number to classified Geomagnetic storms are 0.75 for SSN to moderate 0.35 for SSN to server & 0.81 for SSN to intense GMS, so we have concluded that good correlation between SSN & intense GMS but general correlation between SSN & Server GMS form
Keywords: Geomagnetic storms, sunspot numbers, interplanetary medium & Coronal mass ejection.

ISCA-ISC-2012-15PhyS-11

Study of Magneto Resistance Properties of $CeCu_3Ga_2$

Jaiswal Rajesh and Dhonde Mahesh
Dept. of Engg. Physics, Prestige Institute of Engineering and Science, Indore, MP, INDIA

Abstract: The variety of unusual phenomena exhibited by the materials containing rare earth (R) attributable to 4f electrons has been a subject at intense research for the past two decades in condensed matter physics. The electronic configuration of the R atom is given by [Xe] 4 f^n ($5d^1 6s^2$). Where n varies from 0 to 14 as one go from La to Lu. The 4f atoms are localized and form a narrow band, while the 5d and 6s electrons form broad conduction band. Magnetic moment is R atoms arise from unfilled 4f orbit. The 4f orbit in rare earth atom is well localized. As a result even in concentrated R alloys, there is no direct 4f-4f overlapping and 4f atoms can act as a independent Kondo centre.
Keyword: Rare earth, Resistivity Magnetoresistance, Kondo effect.

ISCA-ISC-2012-15PhyS-12

Superconductivity of Metaphosphatecobalt(II) Salt at 173 K

Trilochan Swain
Indic Institute of Design & Research, Bhubaneshwar, Orissa, INDIA

Abstract: An inorganically template metaphosphate of Co(II) complex has been synthesized and thermal properties have been studied at a low temperature up to 173 K from 298 K by the Differential Scanning Calorimeter (DSC). The specific heat capacity is measured in atmospheric O_2 at a heating rate of 283 $Kmin^{"1}$ from 298 K and kept constant at 173 K for 4 minutes then reversed to 298 K again. The bulk critical temperature of superconductivity of metaphosphatecobalt(II) salt was found at 173 K.

ISCA-ISC-2012-15PhyS-13

Transport Phenomena in Semiconductor Quantum Well

Saini Richa
Department of Physics, Gurukul Kangri Vishwavidyalaya, Haridwar, Uttarakhand, INDIA

Abstract: The various contribution of scattering mechanism in nanostructure has been described by taking the electron-phonon, disorder and anharmonicity effects as a central problem. This has been dealt with the help of double time thermodynamic Green's function theory for phonon via a newly formulated Hamiltonian which consists of the contribution from (i) unperturbed electrons, (ii) unperturbed phonons, (iii) isotopic impurities and (iv) anharmonicities and (v) electron-phonon. In the present work the phonon frequency line width is observed as a very sensitive quantity to study the transport phenomena in quantum well structure..
Keywords: Quantum well, Phonon Confinement, Anharmonicity, Thermal Transport.

ISCA-ISC-2012-15PhyS-14

Pressure Induced Phase Transition in Zinc Sulfide (10 nm-ZnS) Nano-Crystal

Goyal Monika and Gupta B.R.K.
Department of Physics, Institute of Applied Sciences and Humanities, GLA University, Mathura, UP, INDIA

Abstract: In the present paper, the authors have employed the usual Tait's equation of state to study the structural and electronic properties of ZnS-nanocrystal .The Tait's equation of state has been used to analyze the unit cell compression under high pressure. Phase transition of Wurtzite of 10 nm ZnS to rock salt occurs at 16.5 GPa, which is higher than that of corresponding bulk materials. Moreover, the resulting pressure is found higher than that of corresponding bulk material, which indicates that the ZnS nanomaterial has higher hardness than its bulk material. The phase transition pressure (16.5 GPa) obtained in the present study presents a better agreement with the experimental data as compared to the previous studies which show that the transition to rock salt phase occurs at 12.4 GPa [3].
Keywords: transition pressure, volume compression, Bulk modulus.

ISCA-ISC-2012-15PhyS-15

Preparation and Study the Mechanical Properties of PVA-CMC Composites by Sound Waves

Abdul-Kareem J.Al-Bermany, Burak Yahya Kadem and Laith T. Hadi
University of Babylon, College of Science, Physics Department, IRAQ

Abstract: The CMC/PVA composite membranes were prepared by casting method, the appropriate weight of CMC was variable (0.1, 0.15, 0.2, 0.25 and 0.3 gm) was dissolved in (25ml) of distilled water under stirring and heat (80æ%C) for (30 min.) then add the PVA with different weights (0.2, 0.4 and 0.6 gm) for each CMC weight. In order to evaluate the mechanical properties of PVA/CMC composite the ultrasonic measurements were performed at the samples , these properties are ultrasonic velocity, compressibility, acoustic impedance and bulk modulus, were made at fixed frequency (f =2.5 KHz), another acoustic mechanical properties were measured and calculated at a same time such as the ultrasonic wave amplitude before and after absorption by composite were measured using oscilloscope ,then we calculated absorption coefficient , transmittance and the reflected pressure ratio of the sound. It was found that there is significant relationship between ultrasonic velocity and material properties also results show that adding PVA affects on the density then the absorption of the ultrasonic waves inside the composites samples.
Keywords: Carboxymethylcellulose; polyvinyle alcohol; mechanical properties; casting method.

ISCA-ISC-2012-15PhyS-16

Structural, Morphological and Thermal Properties of Chemically Synthesized Bi_2Te_3 nanosheets

Srivastava Punita and Singh Kedar
Department of Physics, Faculty of Science, Banaras Hindu University, Varanasi-221005, INDIA

Abstract: Bi_2Te_3 nanosheets have been synthesized by chemical route at 80 ^{0}C. The product sample was well characterized by powder X-ray diffraction (XRD), transmission electron microscopy (TEM) and Thermogravimetric-differential scanning calorimetry (TG-DSC). High resolution transmission electron microscopy (HRTEM) image indicates that the separated atomically some layers of bismuth telluride (Bi_2Te_3) are crystalline in nature. Selected area electron diffraction (SAED) pattern shows the polycrystalline nature of our synthesized sample. TG result shows that only 62% mass loss has been occurred in as synthesized Bi_2Te_3 sample. DSC profiles show that complete thermal decomposition, dispersion, formation and growth of the as-synthesized Bi_2Te_3 nanosheets simultaneously.

ISCA-ISC-2012-15PhyS-17

Acoustic Studies of Aqueous Solution of Adansonia Digitata (ASD)

Ujle S.K.[1], Phadke S.[2], Shrivastava B.D.[3], Mishra A.[4] and Dagaonkar N.[5]
[1]Department of Physics, Government P.G. College, Jhabua, MP, INDIA
[2]Department of Physics, Government Girls College, Dhar, MP, INDIA
[3]Department of Physics, Government P.G. College, Byawara, MP, INDIA
[4]School of Studies in Physics, DAVV, Indore, MP, INDIA
[5]Department of physics, Government P.G. College Dhar, MP, INDIA

Abstract: The aim was to measure Densities, Viscosities surface tension and ultrasonic velocity sound in aqueous solution of and (Adansonia digitata) powder at different concentration on room temperature 306K. Natural samples were collected from Mandu Dhar District of MP India for this study. Samples were characterized by scanning electron microscope. From these experimental data, thermodynamic and acoustical parameters were calculated and the results have been explained on the basis of molecular interaction occurring in the solution. A good to excellent correlation between a given parameter and concentration is observed systems studied. These findings could play a key role to develop the understanding in natural healthy product. Characterization of the sample material was done by scanning electron microscope.
Keywords: Acoustical properties, Densities, Viscosities and speed of sound, adasonia Digitata (AnD), scanning electron microscope.

ISCA-ISC-2012-15PhyS-18

Effect of IMPATT-diode Integration on Rectangular Patch Microstrip Antenna

Vijay A.[1], Tripathi A.[2] and Singh B.P.[3]
[1]Department of Physics, GLA University, Mathura-281406, UP, INDIA
[2]Department of Physics, Maharishi Arvind International Institute of Technology, Kota, Raj., INDIA
[3]Department of Physics, Institute of Basic Sciences, Khandari, Agra, UP, INDIA

Abstract: The theoretical analysis conducted on IMPATT-diode integrated rectangular patch microstrip antenna and evaluation of various parameters viz. resonant frequency, input impedance, voltage standing wave ratio (VSWR), return loss, reflection coefficient, bandwidth, radiation pattern as a function of bias voltage reveal that the IMPATT-integrated patch offers wider tunability, better matching, enhanced radiated power as compared to the patch alone. The antenna exhibits bandwidths of 20% for 1.5:1 VSWR and 35% for 2:1 VSWR. The antenna shows frequency agility for a band of 614 MHz, i.e. 1.7837 % band. Thus the IMPATT-diode integrated patch can be used to achieve the electronic frequency tuning and the power tuning with bias voltage.
Keywords: IMPATT diode, Microstrip patch antenna, resonance frequency.

ISCA-ISC-2012-15PhyS-19

Propagation of ELF Waves in Earth-Ionosphere Waveguide

Paras Manoj Kumar and Rai Jagdish
Department of Physics, Indian Institute of Technology Roorkee, Roorkee 247667, INDIA

Abstract: Return stroke-lateral corona (RS-LC) system associated with cloud-to-ground lightning and the upper atmospheric discharges known as "red sprites" are the natural sources of VLF (3-30 kHz) and ELF (3-3000 Hz) radiation respectively [1,2]. Earth and ionosphere having good electrical conductivities at ELF and VLF form a natural cavity which is commonly known as Earth-ionosphere waveguide [3]. This waveguide behaves like a resonator at ELF and amplifies the signals from lightning discharges at resonance frequencies. Schumann (1952) first studied theoretically about the global resonance of the Earth-ionosphere waveguide system, known today as the Schumann resonances (SR). Madden and Thompson [4] gave the SR frequencies to 7.8, 14.1, 20.3, 26.3, and 32.5 Hz. Chand et al. [5] reported the first three Schumann frequencies at 7.8, 14.0 and 20.0 Hz. ELF waves having very low attenuation propagate within the Earth-ionosphere waveguide. In this paper, electric and magnetic fields associated with ELF waves generated from RS-LC system and red sprites have been calculated. Electric and magnetic fields from both RS-LC system and red sprites get peak at the resonance frequencies of 7.7, 14.0, 20.0, 26.0, 32.2 Hz and so on. The magnitude of electric and magnetic fields from red sprites come out to be two orders higher than the RS-LC system. Previously, it has been thought that the return stroke is the only source of SR, but we found that the red sprites contribute to the SR greatly as compared to the return strokes.

ISCA-ISC-2012-15PhyS-20

Gain with Harmonic Undulator Optical Klystron Scheme

Gupta Vikesh[1], Verma Abhishek[2] and Gupta Shailesh[3]
[1]Physics Department, S.D. Bansal College of Engg., Indore, MP, INDIA
[2]Mewar University, Gangrar, Chittorgarh, Rajasthan, 312901, INDIA
[3]Govt. Polytechnic College, Nowgong, Distt. Chattarpur M.P. INDIA

Abstract: In this paper we discuss the harmonic undulator klystron free electron laser with a harmonic undulator field and compare the results with that of a standard optical klystron free electron laser.
Keywords: Free electron laser, undulator

ISCA-ISC-2012-15PhyS-21

Gain Analysis of three Frequency Undulator Scheme Free Electron Laser

Verma Abhishek[1] and Gupta Vikesh[2]
[1]Mewar University, Gangrar, Chittorgarh, Rajasthan 312901, INDIA
[2]Physics Department, S.D. Bansal College of Engg., Indore, MP, INDIA

Abstract: In this paper we study the three frequency undulator [15-18] free electron laser gain for higher harmonics with the inclusion of off axis contribution. In earlier paper [18] we have discussed spontaneous emission, it causes additional oscillations due to which intensity reduction take place. To enhance the gain we introduce a new scheme i.e., the three frequency undulator scheme.
Keywords: Free electron laser, undulator.

ISCA-ISC-2012-15PhyS-22

FTIR Study of Some Alkali Maleate Single Crystals

B. Raja Gopal[1], M.Ranga Rao[2] and M.V.Ramana[3]
Department of Physics, Kavitha Degree & P.G. College, Khammam, 507002, INDIA
Department of Physics, Kavitha Memorial Degree & P.G. College, Khammam, 507002, INDIA
Department of Physics, S.R & B.G.N.R. Govt. Arts & Science College, Khammam, 507002, INDIA

Abstract: Lithium, Sodium and Potassium hydrogen maleate single crystals were grown from the aqueous solution. A systematic study using Fourier Transform Infra-Red spectroscopy was carried out on these single crystals in order to elucidate their study for the first time. The assignments of the bands, nature of bonds, bond lengths and the over-all stuructural changes due to change of the alkali element under consideration was discussed, comparing with the pure maleic acid single crystals. The presence of different functional groups in the crystals under study reveals interesting results.

ISCA-ISC-2012-15PhyS-23

Scavenging Mechanism of Glutathione Considering its Neutral non Zwitterionic form Toward the Hydroxyl Radical

Amarjeet Yadav and Mishra P.C.
Department of Physics, Banaras Hindu University, Varanasi – 221 005, INDIA

Abstract: Glutathione is an important antioxidant, particularly in the central nervous system. The scavenging mechanism of glutathione towards the OH radical has been studied theoretically considering its neutral, non-zwitterionic form. Gibbs free barrier and released energies involved in hydrogen abstraction from the different sites of glutathione by an OH radical were studied at the B3LYP/6-31G(d,p), B3LYP/AUG-cc-pVDZ, M06/AUG-cc-pVDZ, M06-2X/AUG-cc-pVDZ levels of density functional theory (DFT). Solvation in bulk aqueous media has been also studied at all these levels of theory employing the polarizable continuum model (PCM) of self consistent reaction field theory (SCRF). Our study shows that a hydroxyl radical can easily abstract a hydrogen atom from glutathione. Thus glutathione is shown to be an efficient scavenger of OH radicals which is in agreement with the results of previous studies.

ISCA-ISC-2012-15PhyS-24

Synthesis and Characterization of Gd-doped ZnO Nanocrystals

Ramana M.V.[1] and P. Siva Prasad[2]
[1]Department of Physics, S.R and B.G.N.R. Govt. Arts and Science College, Khammam, AP, INDIA
[2]Department of Physics, College of Sciences and Arts, Al Qurayat, Al Jouf University, KSA

Abstract: One-step aqueous solution method was used to synthesise the ZnO and Gd-doped ZnO nanocrystals. X-ray

Diffraction (XRD), Scanning Electron Microscopy(SEM), Transmission Electron Microscopy (TEM) and Energy Dispersive X-ray (EDX) analysis have been used to characterize these nanocrystals. The XRD studies revealed that the ZnO and Gd-doped ZnO had wurtzite structure. The analysis of composition by EDX indicated the presence of Gd. The quality of the syntheised ZnO and Gd-doped ZnO nanocrystals was good.. At room temperature, these ZnO and Gd-doped ZnO nanocrystals show diamagnetism.

ISCA-ISC-2012-15PhyS-25

Study on EMIC Waves in Multi-ions around the Plasmapause Region

Ahirwar G. and Sharma Jivan
School of Studies in Physics,Vikram University, Ujjain, MP, INDIA

Abstract: Electromagnetic ion-cyclotron (EMIC) waves have been studied by single particle approach. The dispersion relation, growth rate of the electromagnetic ion-cyclotron waves in a low b (ratio of plasma pressure to magnetic pressure), homogeneous plasma have been obtained. The wave is assumed to propagate parallel to the static magnetic field. The effect of general loss-cone distribution function with temperature anisotropy on EMIC waves in multi-ions is to enhance the growth rate. The results are interpreted for the space plasma parameters appropriate to the plasma-pause region of the earth's magneto-plasma.

Keywords: Electromagnetic ion-cyclotron waves, Plasma-pause region, Solar plasma, General loss-cone distribution function.

ISCA-ISC-2012-15PhyS-26

A Studies on structure and Optical properties of $Mg_xZn_{1-x}O$ thin films using Pulsed Laser Deposition (PLD)

Ahirwar Vishnu Prasad, Misra P. and Ahirwar G.
School of Studies in Physics,Vikram University, Ujjain, MP, INDIA
RRCAT, Indore, MP, INDIA

Abstract: We have study of grown high quality MgZnO thin films on sapphire (0001) substrates at ~ 400^0C temperature, using pulsed laser deposition (PLD) technique. The spectral position of the photoluminescence and optical band gap were successfully tuned from 3.3 to 4.2 eV by adjusting the Mg content. Throughout this tuning range the crystal quality was sufficiently preserved to maintain the excitonic nature of the material resulting in very efficient ultraviolet emission. The transmittance spectra showed that MgZnO thin films are highly transparent with sharp absorption edges. Through Tauc's plot fitting of the absorbance spectra, the band gap energy Eg photoluminescence of the thin films was calculated. It is found that the Eg increases with increasing doped concentration, which coincides with the results from the measurements of photoluminescence. Growth of high quality MgZnO alloy films opens up numerous possibilities for the development of ultraviolet optoelectronic devices.

$$\frac{dr_i}{dt} = \left(\frac{\rho}{p_i}\right)\left(\frac{9\alpha^2 E^2}{m_i \tau_i}\right)^{1/2}$$

ISCA-ISC-2012-15PhyS-27

Application of External Electric field to Reduce the Hazards by Suppressing Hails

Kishore Nand[1], Rathi S.K.[1] and Singh N.[2]
[1]Department of Physics, B.S.A. College, Mathura, UP, INDIA
[2]Rajasthan College of Engineering for Women, Bhankrota, Jaipur, Rajasthan, INDIA

Abstract: The Hails grow to bigger size under certain conditions of temperature and pressure with cumulonimbus clouds. The Phenomenon is ice glaciations. Falling hail damage crops, buildings, human lives etc. To suppress the hail formation different methods are used, most recent method is spraying silver iodide (Ag I) because it has the same structure as that of ice. But, Ag I is very costly. We propose an alternative method for hail suppression by application of external electric field. The field induces an electric dipole moment on embryo of water as well as on surrounding water vapour molecules. Thus, there is a change in potential energy and thus there is a flux of water molecules towards the embryo, so that there is an increase of mass and hence in radius. Due to application of electric field, the critically sized nuclei are formed in very small time. The lightning in clouds is often followed by intensifying echo and then a gush of hail or rain. Thus, hails are suppressed. The increase in radius of nucleus of ice is

The factor of enhancement in nucleation rate is

$$R'_{E/O} = \frac{J'_{E/O}}{J_O}$$

The typical values of factor of enhancement ice nucleation rate of ice as the function of temperature and supersaturation ratio at 260 K in an electric field of 10 esu (cut off value) are shown in following table.

Sv.w	R_E	R'_E	$R'_{E/o}$
1.0051.050	8.4524.31	175.02174.51	$9.54\times10^4$9.67$\times10^3$

Thus , the factor of enhancement varies directly with the externally applied electric field.

Keywords: Relaxation time, nucleation rate, enhancement factor, gush of hails, hail suppression.

ISCA-ISC-2012-15PhyS-28

To Study of Discrete Symmetry in Neutrino

Anuradha Tiwari and Prakash Dubey
Deptt. of Physics, Janta College, Bakewar, Etawah, INDIA

Abstract: Neutrinos are one of the fundamental particles which make up the universe that usually travel close to the speed of light. Neutrinos do not carry electric charge, because neutrinos are electrically neutral. Since neutrinos are not affected by the electromagnetic force, neutrinos are only affected by weak subatomic force. There are three flavours of neutrino e.g. n_e (electron neutrino), n_m (muon neutrino) and n_t (Tau neutrino). In this work, we have obtained the masses of neutrinos M_{ne},M_{nm},M_{nt} from Yukawa Lagrangian Interaction in $SU(2)_L$ x $U(1)_Y$ with (Z x D) symmetry. Importantly this model predicts the mixing angle between n_m and n_t for atmospheric neutrino with $Sin^2$2q nt = 1 and for solar neutrino oscillation the mixing angle between n_e & n_m is Sin q em = 0.6 x 10^{-2}. The present model also contains three right handed singlet neutrinos N_{eR} ~ (1, 0), N_{mR} ~ (1, 0), N_{tR} ~ (1, 0), along with three doublet Higgs fields f_1, f_2, f_3 and three singlet Higgs fields h_1, h_2, h_3.. In conclusion the masses of the three neutrino n_e, n_m, n_t calculated. Finally we find out the masses of three neutrino n_e, n_m, n_t in this model and two massed squared differences (Dm^2_{mt}) atmosp and (Dm^2_{tm}) sol are also being calculated which are well within the range of the recent experimental data.

ISCA-ISC-2012-15PhyS-30

Structural Properties of Early Type Galaxies with Ionised Gas

Joseph Dhanya, Ravikumar C.D., Preetha A.U. and Nikesh M.
Department of Physics, University of Calicut, Malappuram, Kerala, INDIA

Abstract: Morphology is a fundamental property of galaxies. We discuss the morphological analysis of early type galaxies in the near infra red K band observations from Two Micron All Sky Survey (2MASS). The sample covers nearby (z < ~5500 km/s) ellipticals and lenticulars from low density environments. For each image, structural parameters were extracted assuming Sersic bulge and exponential disk using the 2D galaxy fitting algorithm GALFIT. The sample shows significant correlation between the bulge and disk scale radii (linear correlation coeff. =0.934, Significance > 90 %), suggesting a stronger interplay between the bulge and disk components in early type galaxies with ionised gas.

Keywords: Morphology, elliptical and lenticular galaxies, fundamental properties, infra red galaxies, ionised gas.

ISCA-ISC-2012-15PhyS-31

Rotation of Wheel to Provide Power by Applying Natural Gorces

Maity Jonmenjoy
At-Station road Dantan, Dantan, Dist-Paschim Medinipur, WB 721426, INDIA

Abstract: If a vacuum mass,(m) which can replace water twice of it's own mass, (2m), the force of attraction due to gravitation (mg) will be equal to force due to buoyancy in water at a certain height on air and in bellow water. These forces are equal but opposite in direction which can create a torque to rotate a wheel if we apply the force angularly by playable masses along the arms in either side of a wheel. If there be 12 vacuum 1 kg. each masses in a wheel making 30° with each other standing vertically keeping ½ of it's height under water. Pushing rod makes 30° with the arm, so, m.g cos 30° force will act at the middle of the wheel. through connecting rod by the vertical masses on air and under water. To continue the rotation a mother force have to apply from out side. From calculation, we can get average 0.2mg force, if radius of wheel =velocity² to maintain 1N force due to centrifugal force.

ISCA-ISC-2012-16PES-01

Diagnostics of Tension of Adaptation Mechanisms of Top Class Sportsmen - Adequate Medyco-Biological Support of Training Loadings

Dorofieieva Elena[1], Nebesnay V.[2] and Dorofieieva Anna[3]
[1]Donetsk Sports College of Olympic Training, Donetsk, UKRAINE
[2] Donetsk State University of Management, Donetsk, UKRAINE
[3]Donetsk National University, Donetsk, UKRAINE

Abstract: Nowadays diagnostics of tension and failure of adaptation mechanisms of sportsmen is mostly based on parameters of ECG, veloergometry, intensity of hemodynamic changes before and after loading. They indirectly reflect disorders of biochemical processes in organism, but do not give the varied data on the essence and character of the developing metabolic and immunity changes, though the information about the features of metabolic and immunity changes is important not only for understanding the mechanisms of adaptation failure, but also for a choice of optimal rehabilitative therapy of some sportsmen. That is why it is very important for us to define the diagnostics methods of the developing metabolic and immunity changes of adaptation of sportsmen and on this basis to develop the algorithm of profound immunological and biochemical checkup of separate groups of sportsmen. The purpose of this study was diagnostics of tension adaptation mechanisms of the top class sportsmen for adequate medico -biological support of training loadings. 120 sportsmen of the cyclic kinds of sports (swimming, track and field athletics and cycling) at the age of 14-20 have been examined. To make a judgement about the state of adaptation all sportsmen were divided into three groups: the progressing sportsmen, sportsmen showing stable results and those with worsening results. The sportsmen with worsening results were considered as a group with tension of adaptation processes. All sportsmen have been engaged in sports for no less than 5 years. There have been studied the data of ECG, EchoCG, veloergometry (VEM) (test PWC 170), energetic parameters (level of ÀÒP, glucose, lactate dehydrogenase (LDG)), the content of blood plasma electrolytes (phosphorus, sodium, potassium, magnum, general and ionized calcium, iron), as well as the activity of lipid peroxidation system(LPS) (from the parameters of malonic dialdehyde (MDA), diene conugate (DC), peroxide hemolysis red cells (PHRS)) and antioxidant system (ÀÎS) (according to the level of catalase, vitamin Å, superoxide dismutase (SOD)). The state of immunity has been studied from such parameters as the content of Ig Ì, G, Å, Ò- and B – lymphocyte, and the level of pro-inflammatory (IL - 1, 2, 6, 8 and tumor necrosis factor (TNF-á)) and anti-inflammatory (IL - 4, 10) interleukin. The control was taken of 20 men, who practically were healthy, were not engaged in sports. Changes in energy supply, metabolic and electrolytic disorders can precede the changes in ECG and EchoCG. The state of energy supply of the top sportsmen had a number of features and was characterized by the normal content of serum phosphorus, with the decrease of the level of ÀÒP erythrocytes in rest and after short-term physical loading, by the uncertain decrease of the level of glucose and iron in serum with certain decrease of LDG. Tension of adaptation mechanisms was pointed out by decrease of the level of serum phosphorus, the level of ÀÒP erythrocytes below 0,630 mkmol/l, increase of the level of ÀÒP after physical loading, decrease of the level of iron in serum below 14,0 mmol/l and the absence of decrease of LDG level. These parameters were frequent among the sportsmen with worsening results, having ECG and EchoCG parameters of adaptation tension. The sportsmen with intense adaptation resources revealed certain decrease of level of calcium, ionized calcium and imbalance in activity of LPS and ÀÎS systems. The phenomena of energy deficit, revealed among the sportsmen, can both be the cause and effect of transmembrane transport of substances. The basic damaging factor for sells membranes at hypoxia, energy deficit is the excessive accumulation in tissues of intermediate products of free radical oxidation of lipids. They change the activity of membranes, the transport of electrons in the respiratory chain. The state of immunity system does not directly influence the character of energy supply of the muscular activity. But the decrease of reactivity with repeated diseases can worsen the adaptation to physical loadings. The increase level of IgE, ÑD-16, Ò- suppressors and decrease of Ò- helpers is revealed among the sportsmen with the intense adaptation. Therefore these parameters should be investigated among the top sportsmen with possible disorders of adaptation mechanisms. Thus among the methods of diagnostics of intense adaptation with the control over the state of health of the top sportsmen, besides tool methods (ECG, EhoCG, VEM) and general analysis of blood and urine, the informative ones are the methods of definition of erythrocyte ÀÒP level, serum iron level, LDG, level of the ionic gradients of blood serum (calcium, magnesium, ionized calcium), the activity of parameters of LPS and AOS and immunological status. The use of parameters describing the functional state of cardiovascular system and parameters of metabolic, energy and immunity adaptation as criteria of adaptation to physical loadings of the top sportsmen, allows to supervise the adequacy of training regime, to reveal changes in adaptation and to prescribe rehabilitation measures in proper time.

Keywords: sportsmen, adaptation mechanisms, metabolism, immunity.

ISCA-ISC-2012-16PES-02

Kinematic Analysis of Runners in Olympus Marathon 2011

Giovanis V.[1] and Erdmann W.S.[2]
[1]University of Athens, Athens, GREECE
[2]Sniadecki University of Physical Education and Sport, Gdansk, POLAND

Abstract: Long distance running, especially marathon running is a difficult performance. Those runners who improperly distribute their effort along the whole distance would finish the competition with poor time, would get off the track or even die. Erdmann and Lipinska (2012) presented a paper where they described proper tactics of running on a flat course where velocity of running should be increasing along the course and deviations of fragments' velocities from mean velocity should be minimized. The aims of our research were: 1) to assess profile of marathon course of mountain Olympus Marathon in Greece (44 km), 2) to investigate manners of load (velocity) distribution along the course by runners, 3) to assess velocity according to the course's profile, 4) to make recommendations for proper running tactics through proper distribution of a load. Time data for consecutive 6 intervals for the first 50 runners at the finish line were obtained from the organizers' web page. Mean velocities and velocity index (velocity of the 2nd part divided by velocity of the 1st part) were calculated for every runner of this group in order to analyze manner of load (velocity) distribution along the whole distance. The course profile showed the runners started at 3 m above sea level to reach the summit of 2780 m after 21 km of ascending leg and descended during the second leg of 23 km to the finish line at 320 m above sea level (Fig. 1). The mean ascending angle equalled 7 deg. and mean descending angle equalled 6 deg. A mean velocity of the entire course for the first runner equalled 2.67 m/s, for the runners 1..10: 2.46; 11..30: 2.15; 31..50: 1.99 m/s. Comparing velocities of the second part (descending) with the first part (ascending) the first three runners at the finish line had velocity index 1.37. There were many other runners who had this index below 1.3 (18 runners) or even below 1.2 (2 runners). 5 runners had velocity index above 1.4. They ran to slowly the 1st part of the run and finished beyond the first 30 runners. Standard deviation of 6 velocity values for almost all runners had the value between 0.4 and 0.6 m/s. Long distance running taking into account the profile of the course in order to obtain good result needs to be performed where it is applicable with ascending line of the velocity values. For the particular example of Olympus Marathon velocity index needs to be optimized between 1.3 and 1.4 and standard deviation of fragments' velocities needs to be around 0.5. At the analyzed marathon run some runners started with too high velocity and then at the second leg of a run they were too much exhausted so their velocity diminished substantially.

Keywords: running, mountain marathon, kinematics, distribution of load, velocity.

ISCA-ISC-2012-16PES-03

Spaces for Sport Performances

Erdmann W.S.
Sniadecki University of Physical Education and Sport, Gdansk, POLAND

Abstract: There are several thousand of sports all over the world. Every single sport needs its own space for training and competition. In many cases natural resources are utilized. In other situations engineering constructions are needed. There are terrains of different shapes, covered with different surfaces, water spaces (aquains) of different depth, air spaces (airains) with moving air masses, and cosmic spaces where space stations orbit the Earth containing astronauts utilizing fitness equipment.**Terrains:** Several sports are carried out on a plain, level or almost level terrain, e.g. race walking, long distance running, cross-country running and skiing, road rallies. Other sports take place in the mountains (Fig A). For some sports, large terrains are specially prepared. For example, mountain slopes are sometimes remodelled with the help of a bulldozer. On the other hand, golf courses are flattened in some places. Aquains: If large water areas have to be used for sports training and competitions they have to be checked beforehand from the point of view of safety. Sport organizers have to check the depth of the water space (aquain), currents, temperature and the winds acting over the aquain. If an aquain has to be prepared for long distance swimmers it should be checked for the presence of dangerous live species. For both swimmers and water vehicles, an aquain has to be checked for the presence of wrecked vehicles, poles positioned in the water, nets, lines and other objects. At the end of a water course, sometimes a pipe with holes is laid on the bottom in order to release bubbles to the surface. These bubbles mark the finish line. Airains: For sports using airplanes, gliders moto-gliders, balloons, kites and parachutes one has to take into account air spaces (airains) free of obstacles – natural and technical, both stationary and moving. Natural obstacles are: birds, mountains, high trees, storms, tornados, night time. Technical obstacles are: high buildings, chimneys, bridges, electricity masts and cables, radio masts and antennas, cable cabin routes. Outer space :The space situated beyond the Earth is vast and endless. For contemporary humans, only the space close to our planet and that on the Moon, and perhaps additionally on Mars might be considered usable. The most important characteristics of the outer space are the lack of air, weightlessness, and the enormous difference in temperature of the space opened to sun shine and that in the shadow. Astronauts who are at a space station are specially prepared for overloading during rocket takeoff and then for the state of weightlessness. It is also not easy to be present tens of kilometres above the ground. For example Felix Baumgartner who jumped from the balloon in 2012 prepared his mission through 5 years.

ISCA-ISC-2012-17EduS-01

Exploring the Possibility of Gems and Jewelry Trade-Centric Science and Low-Level Technology School Curriculum

Lalit Kishore
Pedagogy Unit, Bal Sansar Sanstha NGO, 68-Jai Jawan Colony; Jaipur, RJ, INDIA

Abstract: Much attention is being given to technical education, vocational training, skill-based learning, services-based training and school-industry links these days. Keeping this in view, an attempt was made to evolve a skill-based school level curriculum related to science and technology of gems and Jewelry jointly by ACCESS Development Services (ADS) and Jan Kala Sahatiya Manch Sanstha (JKSMS) in Jaipur. A one-day exploration study was undertaken by visiting the JKSMS-run school partnered with ACCESS Development Services and interactions with JKSMS functionaries (N=5), students (N=15, age=14-18 years) and students of Pearl Fashion and Design Academy (N=3; Average age=21 years) and ACCESS functionaries (N=4) were organized to identify the curricular leads for evolving the trade-centric school curriculum. The curricular strands that emerged from the interaction were as follows: (i) Visual skills emphasizing realistic drawing, painting, designing, computer graphics and photography; (ii) Applied mathematics, financial literacy, accounting, fair trade practices; (iii) Practical experience of handing tools and techniques related to jewelry work; (iv) Life skills, market analysis skills, pro-social skills, dignity of manual work, health and hygiene; (v) Elementary material science and related scientific and technological literacy; and (iv) Language proficiency and communication skills. Some instructional strategies suggested during interactions were as follows: (1) Mobilization of artisan community's resources and skills; (2) Practical and hands-on experiences; (3) Classroom instruction with immediate reinforcement of learning by using worksheets and work-cards along with developing student's portfolios; (4) Invited sessions and exposure visits; and (5) Holding exhibitions and events: Eventful learning. Consequently, a curriculum framework is ready for funding and try-out.
Keywords: Gems, gemology, low-level technology; science instruction, trade-centric education

ISCA-ISC-2012-17EduS-02

Designing and Exploring the Use of a Board-Game for Selected Pre-Number Concepts for Pre-School Students

L. Kishore and Sharma Ram Prakash
JECRC University, Jaipur, RJ, INDIA

Abstract: One of the banes of mathematics teaching in schools, more so in pre-schools, is to straight away start with the abstract aspects of the subject with providing any prior perceptual learning and concrete experiences. Keeping this in view, a board-game was designed for pedagogical experimentation along with a worksheet for a formalized perceptual learning experience for pre-school students (4-5 years age group) for the pre-number concepts like sequencing, matching, discriminating; one-to-one correspondence and equivalent sets. The research-and-development methodology was used for the present study. For the board-game, a cubical dice was made with a thick paper with a different pattern on its six faces. A square board was made with four patterns selected at random from the six on the dice to be fixed on the four sides of the board. Four students played the game with the throw of the dice and use of the buttons as counters. A worksheet was designed to be filled with tallies to formalize learning of pre-number concepts. The tallies with the move due to the throw of the dice gave o feel for absence or a presence of a pattern, equivalence of tallies and one-to-one correspondence. The pedagogical experiment in the use of the board-game was performed on four students of a pre-school in the age group of four plus seen by 10 teachers who reacted positively to the use of the board game,
Keywords: Board-game, concrete experience, mathematics pedagogy, perceptual learning, pre-number concepts

ISCA-ISC-2012-17EduS-03

Agricultural Education as an Instrument for Rural Development in UP, India

Sharma Vishun Kant and Kumar Ashvine
Singhania University, Pacheri Bari Jhunjhunu Rajeshthan, Hindu Institute of Management Sonepat Haryana, INDIA

Abstract: Since beginning agriculture is considered as the basis of Indian Economy. It contributes to a large extent to the economic growth by the supply of food, raw materials and exports. It provides livelihood to 60% of the rural population and accounts for nearly 20% of Indian GDP. The female literacy rate in Uttar Pradesh is 59.3% much lower than 65.5% of India and rural population comprises of 79.2 % of total population of Uttar Pradesh as per the census 2011. Agricultural Education is one of the most important means of empowering students with the knowledge, skills and self-confidence necessary to participate fully in the development process. The study is an attempt to report the growth and status

of agricultural education in UP and to project a future scenario. The forecast made for trained agricultural manpower is based on socio-economic considerations which are then converted into an educational plan. Issues relating to educational policy to achieve supply-demand adjustments are subsequently discussed. Three main recommendations have emerged from this study. First, the number of diploma holders at the lower end of the professional ladder needs to be increased to cater for the social demand for more trained and readily available manpower to help clientele to enhance the level of their awareness concerning technological developments in agriculture. Second, the number of specializations at postgraduate level needs to be decreased and cultural education needs to be broader based in commensuration with occupational demands. This would allow skilled and qualified manpower to be directed into areas of employment where they are needed most. Third, the participation of the private sector in the institutionalization of agricultural education may offer healthy competition to state supported agricultural universities and inculcate better entrepreneurship.

Keywords: Agricultural Education, Gender Discrimination, Women Empowerment, Female Literacy and Rural Development.

ISCA-ISC-2012-17EduS-04

The Joint Activity of School, Family, and Society in Growing up the new Generation

Azarchehr Sehat
Shahid Rajaee Teacher Training University, Tehran-Lavizan, IRAN

Abstract: I this article the author talked about the role of school in growing up with the parents and other activists according to residence. The role of family in growing up generation is determining by the independence in children's development, their individualism, unique, the parents better than to other nurses know keeping in mind the characteristics of the child. No doubt, that school, family, and society having closer cooperation can solve all the previously mentioned problems.

Keywords: Joint activity, school, family, Society, Education, new generation.

ISCA-ISC-2012-17EduS-05

Organizing the Esthetics and Physical Growing up at School and at the Family

Azarchehr Sehat
Shahid Rajaee Teacher Training University, Tehran-Lavizan, IRAN

Abstract: This article is talking about esthetical and cultural growing up of new generation. Accessible cultural talks will form the imagination of good or bad issues, kindness and unkindness, humanity and no humanity, fair and unfair, true and false for the children. These talks start from the telling tales, proverbs, which have been told by famous people.

Keywords: Esthetics and physical growing up, Education, school, family.

ISCA-ISC-2012-17EduS-06

Teacher is a Key for Teaching Process

Azarchehr Sehat
Shahid Rajaee Teacher Training University, Tehran-Lavizan, IRAN

Abstract: In her article, the author talked about the role of teacher in teaching process. Generally, the article focused on the process of secondary school, the role, and necessity of professional activity, meaning and characteristics of professional activity, the ways of preparing future teachers. At the same time direct children for learning the deeper and increase theoretical and practical knowledge of teaching profession, increase the experience and independence growing and love to the teaching profession.

Keywords: Teacher, Education, teaching process.

ISCA-ISC-2012-17EduS-07

Value of Education in Slum Black Spots of Cities

Gheri Anas Firoz, Mr. Chetan Patel
Civil Eng. Department, SVNIT, Surat, Gujarat, INDIA

Abstract: Slum atmosphere is the top most power house wide range of social problems. By simple mechanism of education awareness or promoting affordable education system in the black spots of the city develops the unmasked skills of people. We make a pool of employment opportunities and gets prosperous life. Major social problems emphasis on high unemployment and domestic problems. They fall deeper into well of poverty the cycle runs off. The major potential of social evils rise of slums due to lack of education. Slum children are used to engage in work at a very early

age with zero level of education. Majority of slum children indulges in social evils since childhood. As we know, childhood is the period in which a person transforms their character and has to provide good service to the society. We should initialize the activities from Grass root level. Child marriage is the other common parameter faced due to Education awareness or proper set of systems. It shows the future of the system. Slum people are exploited by those culprits for the private achievement and forced them to do according to their wish. The shadows of slums resemble the degree of fairness of a Good city. Implementation OF those simple mechanism for the next level of generating leads to abort seed's social life.
Keywords: Slum area, Education Facility.

ISCA-ISC-2012-17EduS-08

Role of Emotional Intelligence for Academic Acheivement for Students

Bhadoria Preeti and Bhadouria Sunita
Boston College for Professional Studies, Gwalior, MP, INDIA

Abstract: In the current competitive environment where students are expected to perform multi roles with efficiency and effectiveness, it is highly needed to develop their right attitude and emotional intelligence towards the unseen complexities of life and quality education. As emotional intelligence is a subset of social intelligence with the ability to understand and monitor one's own feelings and others too which allows a student to mine the required data for his academic achievement which is an outcome of education and the extent at which the educational goal has been achieved. The emphasis of this paper was to determine the factors which are affecting the development of emotional intelligence and its role in academic achievement for students. In this research secondary data has been collected out of which we find out the correlation between emotional intelligence and academic achievement and teaching emotional and social skills at school not only positively influence academic achievement during the year when these were taught but also leaves the impact in long term achievement. Findings of this paper present that academic achievement without emotional intelligence does not indicate future success and absence of emotional intelligence also indicate the week personality and ability to build relations at working place as well in schools and it is highly important for quality education.
Keywords: Academic Achievement, Emotional Intelligence, Social Intelligence, Quality education.

ISCA-ISC-2012-17EduS-09

A study: Job Stress Among Women Teachers Working in Government and Private School

Bhadouria Sunita and Bhadoria Preeti
Boston College for Professional Studies, Gwalior, MP, INDIA

Abstract: Increasing stress at working place is encouraging researchers to investigate the factors which can contribute somehow in stress reduction. The purpose of the study was to investigate the job stress among women teachers working in government and private schools in Gwalior region in M.P state, stress could simply be defined as an unpleasant emotions, which arise when people worry that they could not cope with excessive pressure or other types of demand placed upon them .job stress defined as the harmful physical and emotional responses when the requirement of the job do not match the capabilities , resources or needs of the worker. The study was carried on total number of selected 200 women teachers from government schools and 200 women teachers from private schools. Data was treated by product moment method of correlation a't' ratio .The level of significance was set at .05 level. The job stress scale of T.R.Paliwal. The questionnaire were distributed to all the subject every statement has to possible responses i.e. true and false. The finding of the study reveals that there is a significant job stress differences among women teachers working in government and private school of Gwalior division on M.P. state. The level of job stress was found to be high among women teachers working in private schools as compared to women teachers working in government schools.
Keywords: Stress, Job stress, working women, Teacher, Government and Private school.

ISCA-ISC-2012-17EduS-10

A Study of adjustment of SC, ST Student of Rural and Urban Schools

Dixit Varsha, Aiswal Vijaylaxmi and Richariya Kirti
Boston College for Professional Studies, Gwalior, MP, INDIA

Abstract: Different causes exists in India for the backwardness of schedule caste and schedule tribes like status of the family, residence, occupation etc. The main causes identified of above backwardness are due to backwardness of education and economic weakness .The objective of present study is to find out the solutions for the adjustments made by urban and rural school students (SC,ST). To attain objectives it is essential to make situation accordingly favorable is known as adjustment one can do adjustment according to his /her capacities. Different programmes were implemented in India to join with the main stream for SC,ST. Like Reservation policies implemented in education and recruitment for SC, ST.

Survey method is adopted in the present study. 60 SC,ST students of rural and 60 SC,ST students of urban schools were selected as a sample, standardized test of Dr.K.P.Sinha and Dr.R.P. Singh were applied. Data were analyzed with the help of mean, SD and t.test. Study reveals that there is no significance difference between the adjustment scores of rural and urban SC, ST students

Keywords: SC (schedule caste), ST (schedule tribes), Rural school, Urban School, Adjustment.

ISCA-ISC-2012-17EduS-11

Competition: Talent Upliftment's Main Factor

Richharia Kirti, Maheshwari Archana and Jaiswal Vijaylaxmi
B.C.P.S Gwalior, MP, INDIA

Abstract: Present time is a time of competition, today we face competition in all walks of life. In present scenario, choices are more so competition is more. Present time is a time of globalization. In global age competition is more because career is not up to local level, but global level. Competition is more while opportunities are very limited. This is a worthy says that competitiveness is the characteristic of an individual who strives to excel from others. It is defined as the enjoyment of interpersonal competition and desire to win. To accept challenging test to achieve the standards of excellent performances. In present scenario, competition is must. So, we must think about healthy competition, this paper is approach about that.

Keywords: Regularity, Labour, Time management, Confidence, Quality, Co-operation, Goal.

ISCA-ISC-2012-17EduS-12

A Three Dimensional Study of Education

Pandey R.P.
BCPS, DAVV, Indore, INDIA

Abstract: Education is precious tool. Education changes scenario of society. Education guides about right things. Education prepares path of truth. Education is a matter of true knowledge. Education is not concerns with School/college/university or institution. Education is directly related to environment where the person is living. Present scenario Educational outcomes are not as per requirement. Education prepares persons for society, this is worthy objective of Education, but the situation is quite different. Most of the time Educated persons are not adjusted with society due to lack in Education. situation may be changed Through Education . Education is fundamentally based on philosophy of society. What type of Education is necessary Philosophy guides the path. Education is a tool for every one this can be facilitated If Teacher, Society, Government work with coordination .Now a days coordination is poor no one is worrying about society objectives .Politics creates environment for competition while cooperation is required ,cooperation gives chances to helps each other, working situation, interaction possibilities then person automatically learns .Government work is to provides facilities to citizen. Society makes suitable environment and provides contents then teacher guides, motivate and En lights students .

Keywords: Cooperation, Human touch, Hi-Tech, Blind- follower, Error searcher.

ISCA-ISC-2012-17EduS-13

A Study of Socio-Economic Condition of Primary School Teacher

Jaiswal Vijaylaxmi, Richharia Kirti and Dixit Varsha
B.C.P.S Gwalior M.P., INDIA

Abstract: The quality of every work surely depends on many factors. A teacher plays a vital role in providing education so it is essential to know the surroundings of the teachers only then the actual situation of the educational system can be studied. The present study is an effort in this direction which is based on the "Eklavya Project" held in Hoshangabad conducted on April 2009 in a teachers' conference. This paper is an analysis of the facts based on all there facts because of which the economic & social conditions of the teachers are affected. In this research the selection on the teachers is done by the survey method in which 100 teachers were selected. For this research Shri. Rajeev Bhardwaj's socio economic status scale in Hindi medium was used as a tool which shows that there is no significant difference in the socio economic conditions of urban & rural teachers.

Keywords: Social level, Economic level.

ISCA-ISC-2012-17EduS-14

Studies on Security/Insecurity Feelings of Children between 10 to 13 years (General Children and Child Labour)

Trivedi Rachna and Trivedi Kavita
Deptt. of Education, D.S.N. P.G. College, Unnao, UP, INDIA

Abstract: Feeling of security/Insecurity of every citizen in general and the child in particular is essential to dwell in the society fearlessly. Therefor, A study has been wndertaken using survey method implying survey of general childten and child labour in the age group of 10-13 years from selected two college (Harjendra Nagar Inter College Lal Banglow and J.P.R.N. Amar Inter College, Jajmau, Kanpur Nagar), the child labour working on railway station, Bus stand, Factory Area and hotels of kanpur nagar, with ideal number os per statistical rules. The Incentory used was consilt of 70 items from the results it was crystal clear that the child labours have carious experiences of present day Society; which is not an ideal one that is why developed a natural feelings os security and they were able to get their work done and problem solved by goods or bad manner, whereas the general children lead the life of aprotected child under their parents.

ISCA-ISC-2012-18CLMS-01

An Analytical Study of the Role and Function of a Rural Development Bank in the Perspective of Nepal

Yadav M.N.[1] and Chakrabarti S.K.[2]
[1]Dept. of Management Sc., Tribhuvan University, MMAM Campus, Biratnagar, NEPAL
[2]Dept. of Physics, Tribhuvan University, MMAM Campus, Biratnagar, NEPAL

Abstract: Rural development banks may be considered as a boon for the third world countries. Its vivid example is the neighbouring Bangladesh. Once it was supposed to be a 'great ditch'. All the foreign aids were found to be futile for its economic development. But the rural development banks have shown there the vista of financial upliftment. The country has bagged Nobel prize also due to the success of such banks in theory and practice. Geographically Nepal is more or less of the same size of Bangladesh. Its population is even less than one-fourth of that of Bangladesh. But what is the role of rural development banks in Nepal? In the present paper we have considered a rural development bank as established under the initiative of the government of Nepal. The first five years of its establishment have been taken into account. Our analytical study shows how the mismanagement can turn the whole system a flop.
Keywords: Rural development bank, Third world countries, Financial upliftment, Mismanagement.

ISCA-ISC-2012-18CLMS-02

Estimation of Export Demand Functions for Iran's Pistachio

Ramzan Gholami Avati[1], Motiee Reza[2] and Montazeri Jalal Shorekchali[2]
[1]Department of Management, Payame Noor University, ghaemshahr, IRAN
[2]Department of Economic, Payame Noor University, ghaemshahr, IRAN

Abstract: This article estimates the major determinants of Pistachio export demand and investigates the elasticity's of demand for Pistachio export in Iran. This study uses annual time series data (1970-2008) and unit root tests and analyze them using Auto Regressive Distributed Lag (ARDL) model. This co-integration technique accommodates potential structural breaks that could undermine the existence of a long-run and significant relationship between Pistachio export demand and its main determinants. Error correction coefficient is negative and small and is equal to – 0.54 and it shows that if there is any shock or imbalance in total production, the system will be back to stability after a 3-year period. Together the independent variables explained 91% of the variance in the dependent variables. The remaining 9% was due to unidentified variables. In relation to that, we can conclude that explanatory power is high for the equation.
Keyword: Export Demand Function, Augmented Dickey-Fuller (ADF) test, Auto Regressive Distributed Lag (ARDL).

ISCA-ISC-2012-18CLMS-03

Genetic Engineering and Indian Legal System in the 21st Century

Naik Gouri V.
Balaji Law College, Pune, MS, INDIA

Abstract: The green revolution brought about many diversified changes in the agro industry; similarly invention of DNA transplant, fingerprinting, and organ transplant led us to an era where we could think of creating a completely new living beings by using genetic material from various sources (e.g. chimeras, the dolly sheep). However these techniques are known as genetic engineering, and they have proved to be crucial in generating superior varieties of plants, animals, to serve for therapeutic purposes, and preserving the rare varieties of living organisms. But since human brain is curious and its greed for growth is unlimited, it has developed these techniques to an extent of creating the clones of living organisms and even human beings. Genetic engineering has helped in finding curative measures for many serious diseases which were supposed to be non-curable before a decade. It has touched almost every field may it be agriculture, horticulture, therapeutics, surgeries, infertility treatments, interspecies experiments, and what not. Today, the challenge is how to regulate the use of such techniques, as we are surely not left with the option to say a complete 'no' to these techniques. One needs to observe the problems generated through unregulated use of the techniques, solutions and measures to prevent such misuse. The techniques have the potential that it can be used to destroy the whole human race by simply creating a human bomb... Playing with nature and bringing desired changes in the flora and fauna may result adversely and can damage the ecosystem to lose its balance. However, when it comes to prevention of misuse and regulation of technology the legal sphere comes into picture, and if we have a glance at Indian legal sphere, we really need to think upon permitting use of such techniques in the given social, economic and political conditions. We need to build up a strong system which can deal with the crises, for which we need to adopt nothing else but techno-legal approach in the whole set up which will be one step ahead, the developing technology. Because technology is created by human brain and it can be beaten by only another human brain.
Keywords: Genetics, genetic engineering, law, challenges.

ISCA-ISC-2012-18CLMS-04

Effective Enforcement of IPRs in Research and Development: A 21st Century Perspective

Rao S.R.K, Sahu B.K. and Sinha Amalendu
Central Institute of Mining and Fuel Research, Dhanbad, P.O.FRI-828108. Dhanbad Jharkhand, INDIA

Abstract: The 21st century will have knowledge-based societies which will be more dependent upon creative knowledge and information than ever before. Today's world is already experiencing the information and digital revolution era. In this regard, IPR will extend its role as the locomotive of the 21st-century knowledge-based society. There is clearly a crisis in the world market place that will dictate change for organisations elsewhere. Technology is shrinking the distances between supplier and potential customer at an exponential pace. It is apparent to many that a new emphasis on customer satisfaction will be a pre-requisite to competition in the global economy. The crisis is not new; rather, it is in fact a slowly evolving revolution of the customer. Customers now demand and expect that their requirements for product and service be met. To stay competitive and profitable, all businesses will have to pay attention to this new attitude. The only solution to this crisis is timely and effective utilisation of IP; in the present context it would be appropriate to call it as Total Survival Management (TSM). It is an undertaking which, in one form or other, has been adopted by successful world-class businesses. To stay in business, business must listen to the voice of the customer.

ISCA-ISC-2012-18CLMS-05

An Exploratory Analysis of Factors Affecting Performance of 2nd Auxiliary Nurses and Mid-wives (ANMs) in Andhra Pradesh, India

Sharma Kalapatapu Ravikiran
Health Communication, Indian Institute of Health and Family Welfare (IIHFW), Vengalrao Nagar, Hyderabad, INDIA

Abstract: Human resources are crucial assets in the public health domain. Emphasis on performance of public health personnel is essential to improve the public health system. It is well known in all quarters that public health is not efficient, effective and productive to the desired extent due to a host of factors such as shortage of experienced and skilled health personnel, demotivated health personnel, poor management, hostile working conditions and environment, and insufficient pay. This study undertook an exploratory analysis of factors that affect performance of 2nd ANMs (Auxilary Nurse Midwives) in Andhra Pradesh with the explicit purpose of formulating a performance management framework in order to enhance the role and responsibilities of 2nd ANMs in Andhra Pradesh. The study adopted a quantitative research approach through a survey method in which questionnaires were utilised. Data analysis was done to identify and compare existence or absence of factors with the aid of the SPSS package. The target sample covered around 40% of available 2nd ANMs in three districts from three regions in the state of Andhra Pradesh. Medak district was selected from Telangana region while Anantapur district was identified from Rayalaseema region and East Godavari district was selected from Coastal Andhra region. A performance management framework was prepared on the basis of results and is proposed to focus on role and responsibilities to enhance the ANM profession, strengthen the knowledge and expertise of 2nd ANMs, improve their performance and generate knowledge through research.
Key words: 2nd ANM, performance management, exploratory analysis.

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Role of Techno-legal Solutions in Curbing Corruption by Multinational Corporations – Analytical Study

Swatee Yogesh
Balaji Law College, Pune, MS, INDIA

ABSTRACT - The overall objective of this paper is to assess the interrelation of the culture of corruption bred by the Multinational Corporations (MNCs) resulting in commission of crimes affecting the world at large and the role of technology in curbing it. It is a reality that MNCs are inevitable part of globalised world and their existence cannot be condemned owing to its repercussions. Hence it is a necessity of an hour to find a Global legal solution for controlling the habits of MNCs, and a solution that is techno-legal in nature. The paper tries to address the issues like **-** What is relation between the Culture of Corruption of Multinational Corporation (MNCs) and the role of technology?**,** Whether there could be a Global Techno- Legal solution to curb this culture leading to commission of crimes by MNCs**,** What are

the existing international techno-legal norms governing corruption by MNCs?, Whether these norms adequately protect the common population of the world (Home as well as Host nations) against the crimes committed by the MNCs arising out of the culture of corruption? The dearth of inter-disciplinary research and literature linking technology with law and its implementation poses a challenge before the Legal and Technical Fraternity to combine the expertise in both the fields. There are various aspects of Law that need to be complemented and supplemented with Technology, however, few of these aspects have been taken care of by both the fraternities for e.g. Cyber-Crime, e- governance etc. But the work in context of governance of MNCs poses a challenge of studying the working of MNCs from all the perceptions, then analyzing the grey areas where law needs to evolve. Further it poses a challenge in understanding and correlating this analysis with the technical solutions. The present paper will bring out the significance of the study to find out the viability of a Global Techno-Legal Solution against the Crimes committed by the MNCs. The purpose of this paper is to understand the implications of technology in curbing corruption by the MNCs leading to commission of crimes in light of existing International instruments governing working of MNCs. It will further analyse implications of the crimes committed by the MNCs which go unpunished and thus responsible for breeding the culture of corruption. This could be corrected potentially with the help of technology. The Techno-Legal solutions suggested towards the end of the paper may be helpful in guiding the International Legal Fraternity in locating a very different dimension of MNCs which might pose threat to the International community if gone un-recognized.
Keywords: Techno-legal solution, multinational corporations, global, crimes.

ISCA-ISC-2012-18CLMS-07

Inefficiency of Laws to Protect Female Foetus- An Indian Perspective

Tikande Sujata
Balaji Law College, Pune, MS, INDIA

Abstract: India has a patriarchal society where men are seen as role models who are supposed to look after their parents in old age. Giving birth to a girl child is seen by many as a "watering the neighbours plants" and birth of a male child is looked upon as a feather in the cap with a great pride and joy. The object of this paper is to analyze the causes and history of Female Foeticide in India, the existing laws and legislations and efficiency of these laws. It will also critically analyse the Indian judiciary's view on Female Foeticide. The tremendous progress in the field of medical science during these modern times is praise worthy and unimaginable but there is a need to check its implications and repercussions. The regulatory policies have to evolve to tackle these implications. The researcher in this paper will positively analyse the pros and cons of Female Foeticide and its probable effects on the Indian Social and Legal system. Ultrasound application has evolved a spontaneous demand for its use in obstetrics and gynecology. A little more than a century ago abortion in India was made a crime for which the mother as well as the abortionist could be punished, there are specific laws concerning Female Foeticide, the researcher in this paper will discuss the grey areas in the prenatal diagnostic Acts as well will bring out the need for collaborative research of Legal and Medical fraternity.

ISCA-ISC-2012-18CLMS-08

Reach the Unreach Modern Day Banking

Nagarajan P.S. and Manikandan N.
Alagappa Institute of Management, Alagappa University, Karaikudi, INDIA

Abstract: Financial Literacy is very poor among rural people, so now Bank has planned to target below poverty line segment with separate customized products and services to suit their requirements. Branch Banking is the most common form of Banking across the globe but to reach the millions of people lives in rural areas now banking industry has come out with a pioneering idea of branchless banking under Biometric Smart Card Technology by appointing Business Correspondents and Business Facilitators. The Bank appoints Business Correspondences along with its technology team with the help of enrollment stations to enroll the beneficiary. The data recorded in the computer and impressions of all the ten fingers are captured and stored in the computer by following simplified Know Your Customer norms, the bank open No Frill Savings Bank Account. Data captured in the chip transferred in to card and that will be given to the beneficiary, instead of the pin number it recognizes the finger print of the account holder. Business Correspondences will move to the customer with the hand held device Point of sale machine which works as a storage device also. Depending on the transaction, the agent either receives the cash or pays cash to the account holder. After completion of the transaction it generates a receipt which one copy is given to the account holder duly signed by the agent and finally get integrated with Bank Savings Account. It is necessary to educate the poor about the financial services and its benefits.

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Six Sigma: The Roadmap for the Future and its Applications in the Financial Services Industry

Chaddha Amit[1] and Bhatia Shilpi[2]
[1]Industrial Development Bank of India, Jhansi UP, INDIA
[2]Barkatullah University, Bhopal, MP, INDIA

Abstract : Six Sigma is an innovative tool for reduction of defects in manufacturing processes and service industries. Consumers today have become more and more demanding and the key to retain them and keep the profits intact for the company is to recognize the need for customer satisfaction. The companies today have to enhance both their processes and quality in order to achieve the six sigma level. Though Six Sigma has been used predominantly by manufacturing industries but its effectiveness is also understood by the service industry as well. The present paper discusses the Six Sigma evolution, levels, processes, implementation and their importance in the financial services industry. The services sector accounts for more than 75% of the GDP of developing countries. The most prominent source of customer dissatisfaction in services is due to the presence of GAPs in the quality delivered and quality perceived by the customer service organizations. By measuring and quantifying the existing GAPs, service organization could deliver service which gives higher customer satisfaction and this is where the role of Six Sigma comes in. Six Sigma has been successful in companies like GE, Mororola, Wipro etc in reducing costs, turnaround time, reducing wastage, increasing efficiency and reducing risks.

Keywords: Six Sigma, Financial Services Industry, Consumers, Quality

ISCA-ISC-2012-18CLMS-10

Science in Aid of Law

Tayde Aarti A.
Balaji Law College, Pune, MS, INDIA

Abstract: Crime is a deviant behaviour and to reform the erring citizen through appropriate punishment, all societies have a criminal justice system. Societies regulate the social behavior of their members through Laws, to ensure peace and tranquility in the society so that the citizens can enjoy the fruits of endeavors and their rights and freedom, Law takes every initiative to protect its citizen for that new methods/ modes are need to investigate the cases so that justice is seen to be done. Modern day criminal uses science and technology to his advantage in committing crimes. Consequently investigating officer is required to possess scientific knowledge and skills to investigate and unearth these crimes. Forensic science comes to their rescue. Forensic science is an umbrella term to describe the application of principles of science and technology in investigation of crime to enable the courts to determine the guilt of the accused. Science since long is in aid of Law. The principles of forensic science has enable the law enforcers to solve many seemingly unsolved blind criminal cases and also help the civil courts in determining many intricate and difficult cases. The word *forensic* comes from the Latin *forçnsis*, meaning "of or before the forum." further to simplify it, it means a criminal charged presenting the case before a group of public individuals in the forum. Both the person accused of the crime and the accuser would give speeches based on their sides of the story. The individual with the best argument and delivery would determine the outcome of the case. This origin is the source of the two modern usages of the word *forensic* – as a form of legal evidence and as a category of public presentation. In modern use, the term "forensics" in the place of "forensic science" can be considered correct as the term "forensic" is effectively a synonym for "legal" or "related to courts". However the term is now so closely associated with the scientific field that many dictionaries include the meaning that equates the word "forensics" with "forensic science". Forensic science is a complex amalgam of various scientific disciplines and it is not possible for an investigator to master all of them. Specialized forensic science Laboratories and field units have been established to utilize forensic science in the detection of crime. Since the ordinary policemen or the station house officer is the first responder to the call for help and visits the scene of crime, he should have a basic knowledge of the capabilities of forensic science to take necessary steps to protect and preserve the scene of crime to enable the forensic scientists and technicians to make use of physical evidence present at the scene. Since scientific evidence are devoid of human bias and is based on well tested and accepted scientific principles, conclusions and inferences drawn based on them are accepted by courts. Scientific evidence is based on time tested, demonstrable, replica table and universally accepted principles. Physical evidence or clues are always present at the scene of crime and if these are properly collected and along with relevant samples are submitted for scientific examination, the opinion given by the scientists will be acceptable by the courts and the defense without dispute. As crimes are generally committed in secrecy, investigator may not be able to secure eye witnesses, confessions and approvers may not be forthcoming. Circumstantial evidence has to be strong enough to bring the guilt to the accused beyond reasonable doubt. As science is the systemic study of every fact, it has helped the law faculty in various respects. This paper is an serious attempt to study how science comes in aid with law. Whether these aids are sufficient considering the existing frame work of law, or what more can be done in furtherance.

ISCA-ISC-2012-18CLMS-11

Analysis of Laws Regulating Nuclear Science and Compensating Victims of Radiological Accident in India

Raut Anand
Balaji Law College, Pune, MS, INDIA

Abstract: Advancement in science and technology especially in nuclear science has emerged as a boon for mankind in the form of Carbon free and clean source of energy. Also nuclear industry in India is growing and is expected to form energy-mix of the country. But at the same time it has turned out to be bane in the form of radioactive accident and pollution endangering individual, property and environment; posing threat to Fundamental Right to live with dignity and to clean and healthy environment. The geographical scope of damage caused by nuclear accident may have national and trans-boundary effects. An unlikely event like nuclear accident may worsen up the situation. Number of legislations at National and Inter-National level have been enacted to provide liability for nuclear damage, compensation to victims of nuclear incident, but such laws are in their nascent stage and suffer from loopholes. The present paper focuses on i. Constitutional[1], legislative provisions[2], international instruments[3] dealing with radioactive pollution and harmful radiations, principles of environmental[4] and Compensatory Jurisprudence[5] evolved by judiciary, for sustainable development. ii. Certain unaddressed issues pertaining to, whether victims of radiological accident are entitled to adequate compensation and on whom the Burden of Proof lies? iii. Plight of victims of Radiological accident that took place at Mayapuri scrap metal bazaar, New Delhi. iv. Critical analysis of laws regulating radioactive pollution and brings forth its inefficiency to immediately compensate victims of radiological accident. This article mainly focuses on laws regulating radioactive pollutants and radiations. Also in the wake of radiological accident at Mayapuri scrap metal bazaar (in March) at New Delhi it is important to bring forth inefficiency of laws regulating radioactive pollution and to compensate victims of radiological accident.

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Law and Biodiversity in India: Protective Mechanisms

Bhakare Jyoti and Thierry Murangira B.
Department of Law, University of Pune, MS, INDIA

Abstract: For many years, entrepreneurs have freely accessed, collected and utilized biological resources for various purposes such as commercial activities in different industrial sectors including pharmaceuticals, food and beverages, biotechnology, seed, crop protection, horticulture, botanical medicines, and cosmetics and personal care. Due to wanton destruction of habitats and ecosystems there has been tremendous loss to biodiversity. Therefore, this paper provides protective mechanisms of biodiversity in different legal concepts. The paper is based on biological facts and legal norms. The facts and values form together a setting for the systematization of legal norms in order to preserve biodiversity. Thus, the focal point of this paper is to find out the reason why we still have tremendous loss of biodiversity although we have protective and preventive laws. This study stands for an initial assessment of issues surrounding implementation of the protective mechanisms of biodiversity conservation and natural resource management, in the context of the ongoing initiative.

Keywords: Biological Resources, Biodiversity, Ecosystem and Protective Mechanisms

ISCA-ISC-2012-18CLMS-13

Commerce of Renewable Energy in UP, India

Vinay Kumar
Faculty of Commerce, BHU, Varanasi, INDIA

Abstract: The importance of renewable and clean energy is can't be negligible by any country in his development. Today the entire world are facing a common and very conditional problem of un-renewable and harm full energy alternate .But this is also very considerable that the role of coal or petroleum power can't be reduced totally in total power generation .In India the problem of energy is very vast and un-controlled. According to ministry of coal in 2010-2011 India produce 533.08 million tones of coal (approx.).Recently discussion on uncontrolled climate changes and its effects generates many kind of barriers on production of power and industrialization of a nation. As we know that there is a direct relation between carbon and development so this is very necessary that eminent persons of this world must be think about carbon free, renewable and affordable energy alternates. A ray of hope in this area is solar energy and bio-gas, but a big short coming of this energy is very costly in implication and operating charges .In this paper, the researcher try to focus on commerce on this area as this sector need a deep research and awareness and subsidiaries by the government of India. The climate of India is favourable to solar energy and the agriculture rural area of India is provides a good and exact condition for bio-gas energy.

Keywords: renewable energy, solar energy, bio-gas energy, climate change, carbon production.

ISCA-ISC-2012-18CLMS-14

Collision of Information Technology (IT) in the Indian Banking System

Meena R.S. and Vinay Kumar
Faculty of commerce Banaras Hindu University, Varanasi, INDIA

Abstract: The article presents a study which aims to analyze the role of information technology (IT) in the Indian banking industry. Indian banks are investing heavily in the technologies such as automated teller machine (ATMs), net banking, mobile banking, tele -banking, credit cards, debit cards, smart cards, call centers, CRM, data warehousing etc. It is essential to evaluate the impact of information technology on the performance of Indian banks in terms of extended value added services and customer satisfaction thereby. Foreign banks and Private sector banks which took more IT initiative, were found to be more efficient and more competent force than public sector banks in India. Based on the article, technological innovations have enabled the industry to open up efficient delivery channels. It is said that IT has helped the banking industry to deal with the challenges the new economy poses. The study examines the views of banking customers on the implementation of IT in banks. According to the author, private and foreign banks use more IT-related banking services than public sector banks.

Keywords: CRM, Awareness level, Banking sector, Customer satisfaction, ITeS, Security

ISCA-ISC-2012-18CLMS-15

Aggregate Money Demand Function in Pakistan: Co-Integration Analysis

Ihtisham Ul Haq and Shaista Khan
Kohat University of Science and Technology, Kohat, PAKISTAN

Abstract: This empirical study was carried out to test the stability of aggregate demand function of money based on liquidity preference theory. This theory suggests that income is positively related to money while rate of interest has an inverse relation with it. Data on money, national income, rate of interest and inflation was investigated for the period from 1962 to 2010 for Pakistan. Unit root test was used for detection of non-stationarity problem and augmented Dickey-Fuller test affirmed that variables under consideration are facing this problem at level. Hence, co-integration technique was required instead of ordinary least square method. All series were found free of non-stationarity problem at first difference. A long-run relation among variables of the study was confirmed by Johansen and Juselius method as two co-integration vectors were witnessed. The long-run estimates of the model were captured through the application of vector error correction model. The coefficients of national income, rate of interest and inflation have statistically significant impact on money demand. All the three explanatory variables have expected sign as proposed by the theory. Aggregate money demand function was in equilibrium and thirty percent of disequilibria have been adjusted annually as the value of error correction term suggested. Only rate of interest has short-run relationship with money as compared to national income and inflation. These results verified the holding of liquidity preference theory in case of Pakistan. Thus, it is concluded that money supply is vital monetary tool in economic activity. This study recommends that State Bank of Pakistan can utilize money supply as a monetary policy tool for the stability of economy.

Keywords: Demand for Money, National Income, Rate of Interest, Inflation, Co-integration.

ISCA-ISC-2012-18CLMS-16

An Empirical Analysis of Pakistan's Bilateral Trade: A Gravity Model Approach

Shaista Khan, Ihtisham Ul Haq and Dilawar Khan
Dept. of Economics, Kohat University of Science and Technology, Kohat, PAKISTAN

ABSTRACT: This study aimed to investigate the important determinants of Pakistan's bilateral trade flows. For the purpose, panel data on the variables of trade volume, GDP, GDP Per capita, distance and dummy variable for cultural similarities, for the time period 1990-2010 with a frequency of two years was analyzed. Gravity model was employed for the analysis of the data. Gravity model was proved to be successful in explaining Pakistan's bilateral trade flows by high values of R-square and adjusted R-square for the model. Diagnostic tests were conducted which confirmed existence of no such problems as multicollinearity, autocorrelation and heteroscadasticity. Also model specification and normal distribution of error term were confirmed by these tests. Results of the analysis gave a positive relationship between GDP and trade volume. Similarly GDP Per capita was also found to be positively related to trade volume while dummy variable for cultural similarities showed a negative relationship towards trade volume. As was predicted, distance variable also exhibited a negative relationship with trade volume. All of the variables were found significant except distance variable. Ratio of actual trade to predicted trade determined for each of the partner country for the year 2010 revealed

that Japan, India, Turkey, Malaysia and Iran have greater unrealized trade potential with Pakistan which leads to policy implications. On the basis of the findings, it was recommended that Pakistan should take initiatives to increase its trade with larger economies and with economies in its close proximity. Countries like Japan, Iran, India, Turkey and Malaysia are recommended to be considered for Free Trade Agreements. Findings of the study also suggested that political objectives should be settled according to economic objectives to make it sure that political disputes are not making such activities to suffer as trade.

Keywords: Trade flows, GDP, Geographical distance, Gravity model

ISCA-ISC-2012-18CLMS-17

Xenotransplantation: The Need of Modern World of Transplantation

Mane M.
Department of Law, University of Pune, MS, INDIA

Abstract: Transplantation is a well suited remedy for various diseases in modern times. The journey of transplantation of organs has been very challenging as it involves lives of both the donor and the recipient. The most common type of transplants is human to human organ transplantations i.e. allotransplantation. It has been observed that there is acute shortage of human organs. We have a large number of patients dying due to non availability of human organs. There are various reasons for such shortage for example physical damage of donor's organs, donor being affected by various diseases such as HIV and Hepatitis etc. The fruitful technique which can be used is xenotransplantation. Xenotransplantation means use of organs, tissues or cells between species. Various agencies all around the world have given various definition of xenotransplantation as per their rules and regulations governing the clinical use of this technique. This kind of transplantation is not totally successful as there are many medical and ethical barriers, but it has a very promising future. WHO has given extensive guidelines governing use of xenotransplantation. The paper intends to throw light upon various medical and ethical barriers involved and ways to overcome them by using laws and regulations.

Keywords: Xenotransplantation, Barriers, Laws.

ISCA-ISC-2012-18CLMS-18

The Psychological Contract- the Concept of Employer – Employee Expectation in Present Scenario

Siddiqui Mohd. Ashfaq and Jain Kamlesh
Infinity Management and Engineering College, Sagar, MP, INDIA

Abstract: Building and maintaining a good working employer and employee agreement is about managing expectations, as an employer need to be clear about he or she expect and employees need to understand what to expect form an employer. Psychological contract refers to the relationship between an employer and its employees and specifically concerns mutual expectations of inputs and outcomes. In the study work expectation issues are studied due to various changes taken place in last few decades like work team has got converted into virtual team. Since there are various changes in the work related areas and also in the expectations of employees and employers. Literature review has been taken to find out the former studies. Research methodology exploratory and descriptive research has been statistical tool is used in simple percentage method. Structure questionnaires is used to and samples are collected form Indore, Bhopal and Sagar. It is found that employees and employer both expect something from each other. And there are various points which leave out.

ISCA-ISC-2012-18CLMS-19

Role of Self Help Group in the development of Entrepreneurship: A study in Referance to Khandwa District

Shroff Manu
M.L.C.P.G. Girls College, Khandwa, MP, INDIA

Abstract: At present almost 1/3rd population of India is spending their life below poverty line . Post independence of the country,many programmes were undertook by the govt. to cope up with poverty, but due to rapidly increasing population, the percentage of people below poverty line which was 54% in 1973-74 has become 36% at present but the number of people is constant. Uptil lst April 1999 many self-employement programmes such as integrated rural development Program trises, D.W.C.R.A (programs for women and children development) ,development of rural artisans & Ganga welfare programme were quite effective but all these programmes had a common lack that all these programmes were individualy independent programmes, is a result of which they were behind their personal motives and neglected the sole purpose,to improve this situation govt. introduced all the above mentioned programmes as "Golden Jubilee rural self-mployement"programme from April 1999 . At present the imposing of programmes is done by District Panchayat.

ISCA-ISC-2012-18CLMS-20

Impact of M-Commerce in Mobile Transaction's Security

Bajpai Anand
Career Degree College, Lucknow, UP, INDIA

Abstract: Really the modern world is so advance in technologies since portable network accessible devices & techniques. In the era of wireless technologies which are available in mobile, PDA, Laptop as well as in any PC(personal computer), anyone can get access anywhere- anytime. So we can say it wireless communication which may be called as ANYWHERE-ANYTIME communication. Due to this type of communication, it is very easy to access as well as transfer the information from anywhere-anytime. Today Information technology has connected the whole world on a one land which is called as electronic network land. This land has enabled two types of commerce:- 1. E-commerce 2. M-commerce The M-commerce has enriched the global market & advanced the whole business scenario. The business suddenly moved from regional land to global land because of access and reach of E-commerce and M-commerce. M-commerce is one of the derived technology from E-commerce.E-commerce is the mother of M-commerce. But the questions comes upto the enterprise that whether enterprise architectures and designs are able to secure our e-business? Concerning the issues related to the above question I have found one key solution for it which would be capable of handling the issues of security of data assets beyond the enterprise boundaries. Now the concept as well as the approach for the security issue is E-security. But How? So we will find out also the solution for this question. Strategy and the solution need to be addressed in a more fundamental way than firewalls, SSL or PKI.

Keywords: Secure mobile transaction, mobile transaction, secured transaction, e-transaction, electronic transaction security.

ISCA-ISC-2012-18CLMS-21

New Dimension in Equity Valuation

Motwani R.K.
Department of Management Studies, Government Engineering College, Ajmer, INDIA

Abstract: The studies on market efficiency clearly depict that it is very difficult to find out the undervalued securities. On the other hand, such undervalued securities cannot be left due to practical difficulties in their identification. There are many models available used to uncover the mispriced securities. One of the methods prominently used for the valuation of securities is price-earnings ratio. Investors have been dependent on the price-to-earnings (P/E) ratio as a tool to decide investment in a particular stock for several years. It has emerged as a simple way to get a sense of how market value of a company's stock compares to its earnings. However, there is a considerably significant problem with this ratio as neither the company's stock price is the true representative of a company's value in the real world nor the earnings of a company are reliable as the same can be easily manipulated. Thus, if an investor wants to really get a glimpse of a company's value as compared to others, he needs new dimension in value philosophy. The present paper describes the very less talked dimension in equity valuation i.e., Enterprise Value. Enterprise value is described as a value that, in theory, represents the entire cost of a company, if someone acquires it. It offers more accurate estimate of takeover cost than market capitalization because it includes a number of important factors such as preferred stock, debt, and cash reserves that are ignored otherwise. The paper also highlights how application of this new dimension in equity valuation helps tremendously in investment decisions, particularly during different phases of market, by taking up a case study of equities from a common industry.

Keywords: Equity Valuation, Price-earnings Ratio, Enterprise Value.

ISCA-ISC-2012-18CLMS-22

Women Empowerment: A Challenge for 21st Century

Rastogi Shweta
IIMT Group of Colleges, Meerut, UP, INDIA

Abstract: "The thing women have yet to learn is nobody gives you power. You just take it."- Roseanne Barr. Empowering women is the need of the hour and the global challenge of time for the 21st century. Social reformers and missionaries worldwide have endeavored to bring women out of confines in which centuries of traditions had kept them. Empowerment of women is the prerequisite to transform a developing country into a developed country. It has multiple, interrelated and interdependent dimensions: economic, social, cultural and political. Educational attainment and economic participation are the key constituents in ensuring the empowerment of women. Educational attainment is essential for empowering women in all spheres of society. The economic empowerment of women is a vital element of strong economic growth in any country. Empowering women enhances their ability to influence changes and to create a better society. The

empowerment of women is located within the discourse and agenda of gender equality and is increasingly being taken in the agendas of international development organizations, perhaps more as a means to achieve gender equality than as an end in itself. It has to be understood that women are centre to the entire development process. The empowerment of women means for them to have the necessary ability to undertake a number of tasks either individually or in groups, so that they have further access to and control of society resources. It is recognized as an essential strategy to strengthen the well-being of individuals, families and communities, government and non government agencies. In other word, empowerment is an abiding process which takes place with specific intent so enabling them to have further control over society's resources.

Keywords: empowerment, gender equality, education, economic, government agencies, growth.

ISCA-ISC-2012-18CLMS-23

Encryption and Its Legal Issue's

Mishra Srishti
Rajiv Gandhi National Cyber Law Centre, National Law Institute University, Bhopal, MP, INDIA

Abstract: Security is a common concern when data is to be sent over an insecure connection. File2File offers an encryption solution that is considered to be infallible. This program enables to transfer data between colleagues, partners, customers or friends and relatives in a secure manner. It offers one password for the file, which is to be shared by the two parties. The file can be retrieved only if the password is known. The application converts the file or directories into a simple distributable execution file that would ask for the password when the data is to be retrieved. The files are encrypted and decrypted on the AES algorithm base that is too strong to be broken through. The application deletes the original content in the hard disk and disk cache after encrypting the files. The encrypted file can be sent via email or shared network or CD-ROM or even a standalone drive without any concerns about the security. There are various laws made by Indian government to follow when applying encryption technique in the process of communication through internet. So that any kind of terrorist activity can be avoided. File2File Features are: Intuitive and simple password protection. Strong encryption and decryption of files and directory trees. Simple distribution with executables for decryption. Based on AES encryption algorithm. Deletes the originals from hard disk and disk cache after encryption. Send secured files via e-mail. Can be used on a standalone drive, a shared network, CD-Rom and more.

ISCA-ISC-2012-19LS-01

Challenges of Managing Research Collections in Semi- Automated Academic Libraries in Nigeria

Philip, Kathryn J.
University of Uyo Library, NIGERIA

Abstract: Academic libraries exist to support the educational goals of their parent institution; one of such roles being to provide assistance to the academic community by organizing relevant scholarly materials and other information sources for availability, usage and maintenance. Limitations in these aspects of information services are however demonstrated in enduring conventional methods which more often than not are short of modern information applications. Reasons for these are highlighted in this paper alongside other intervening factors. This has been the situation for some libraries in Nigeria, the University of Uyo being a case in point. Incidentally, the University is the fifth preferred in the country.

ISCA-ISC-2012-19LS-02

Digitization of Library in 21st Century-Digital Library

Nagar Hemlata[1] and Salve Meena[2]
[1]M.L.C.Govt. Girls P.G. College, Khandwa, MP, INDIA
[2]S.N. Govt. P.G. College, Khandwa, MP, INDIA

Abstract: Information technology and networks are the major tools to shape our society in future. The application of information technology has the largest impact on library and librarianship. It has changed the way we perceive and disseminate information and has even threatened the traditional approaches to library and library professionals. The impact of such technologies (Computer network, Internet, Hypermedia, Multimedia, CD-ROM etc.) has led to a paperless society. The convergent of computational storage and networking technologies now have a wider impact on society. The computers can record any information/ document at high speed and disseminate information wherever required to the users. It is possible now to digitize and store information in the form of high quality graphics, network texts, color images, voice signals and video clips at a relatively affordable cost. The term "Digital Library" in a broad sense is a computerized system that allows obtaining a coherent means of access to an organized, electronically stored repository of information and data. It is a relatively new concept. The term digital library explains the nature of its collection. This term became familiar towards the end of the 20th century. Resources in digital library are electronic store and access of information. Access to digital library is therefore, not based on space or time.

ISCA-ISC-2012-20SocS-01

Modern Hindi Journalism: A Source of Public Awareness

Chouhan Hemlata
Govt. College Barnagar, Dist. Ujjain, MP, INDIA

Abstract: There are two types of people some think that journalism is a business while some other think that it a social service with the thinking of social welfare. Mordern journalism is the center power of all issues of the world. It is the guide of social life and future maker also. it connect the whole country with its interior part. it introduced us from our countries innovation ,social and cultural activities etc. it externd itself in the field of literature. science, psychology, history, music, dance, drama ,agriculture ,cinema and all the field of life. Now journalism is controlling and directing us. Modern journalism working for national awareness. It gives a direction to make development to the sociely and civillzation .it is not need to say that modern journalism have become multi dimensional, more extended and more social,cultural and life related. Now journalism is working to secure our cultural values .it also be able to secure our freedom of express. it is not only the secure of past or translater of today but of the future maker also. According to the famous hindi potess. Mahadevi verma – "Journalism is the creative art. It is impossible to change the society without it.so the journalist plays their duties and responsibiblity with loyalty because history would be written by their foot pimples".

Key word: Freedom of express, Mahadevi Verma

ISCA-ISC-2012-20SocS-02

Strategic Planning Based on the Psychophysical Factors Concerning Climate Change

Kazi Saifuddin[1], Farzana Ahemed[1] and Nazmul A. Khan[2]
[1]Dept. of Psychology, Jagannath University, Dhaka 1100, BANGLADESH
[2]Dept. of Public Health, North South University, Dhaka, BANGLADESH

Abstract: The present day psychology is concerned about the climate change phenomena. The chain effects of the climate change and global worming have been discussed in many aspects throughout the world. Scientists have significantly taken in account these giant-global consequences of the climate change. Unfortunately, one of the biggest affected countries is likely to be the Bangladesh. Such consequences for Bangladesh can be multiple because of its level of poverty and the nature of geographical setting. Many strategies and initiatives are under consideration by the peoples, organizations and institutions concerned. It is however, important to consider some psychophysical factors when preparing the strategies in this regard. Without considering such factors when making the strategy, the goal can't be achieved as much as expected. The five-dimensional factors are: 1. Mass perception; 2. Cognitive developme3nt; 3. Temporal dynamism; 4. Psychophysical health; and 5. Action mechanism. The paper strongly suggests herewith that to consider the above five-dimensional factors when the principles of the strategic planning of the development for Bangladesh regarding climate change will be prepared.

Keywords: Psychophysical, Climate change, Strategic planning

ISCA-ISC-2012-20SocS-03

Adaptations in Technology: Building the Rail Line of the BB and CI Railway 1852-1869

Bandyopadhyay Madhumita
Smt. P.N.Doshi Women's College of Arts, Ghatkopar (W), Mumbai, INDIA

Abstract: There were technological transfers into India through developmental projects during the colonial period. Railway was one such important technological breakthrough which was introduced into India by the industrialized British. This paper exemplifies the adaptation of western technology and practices to Indian conditions. Since the circumstances in India, both ecological and social, were dissimilar to Britain, alternative technologies developed through a series of experiments. The eventual perfection of techniques after an elaborate process of trials and errors is explained in this paper with actual examples from the Bombay Baroda and Central India Railway Company that was built between Bombay and Ahmedabad from 1852-1869. The construction of Rail line consisted of a complex process involving many operations like the preparation of the rail bed, the placing of the plates through various gradients and curves, the laying of sleepers and ballast. In all these operations there were technological transfers, which were modified in accordance to Indian situations. Certain such examples have been highlighted in this paper.

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Chisseling English Language Skills of High School Students through Distinct Technical Aids

Verma Rooble[1], Verma Priyanka[2] and Verma Manoj[3]
[1]University Teaching Department in English, Vikram University, Ujjain, MP, INDIA
[2]Management Studies, Maulana Azad National Institute of Technology, Bhopal, MP, INDIA
[3]Dept. of English, Govt. College, Nagod, District Satna, MP, INDIA

Abstract: It is the need of the time that education system in India must respond to the development of technological and scientific advancements and the same is true for using these technological advancements in the development of English language skills to prepare a proficient manpower for the future. It is also essential to catch the younger ones at their school level as they can respond towards new techniques with fresh approach and their desire to know the new gadgets would definitely be an added advantage for their learning English language and for the teaching also. It is extremely necessary to garner the skills of the students right from the school level. Teaching aids reinforce the spoken or written words with concrete images and thus provide rich perceptual images which are the bases to learning. When these materials are used in an interrelated way they make learning permanent. They provide for a great variety of methods. English language learners require different set of technical aids at different level. Some aids are useful at the school level and some at higher level. So, it is extremely significant to note that the selection of the technical aids for English language learners at the school level has to be done very judiciously. Such aids need to be picked up that would meet their demands at school level. This paper is an effort to highlight the role of distinct technological aids that can contribute to honing all four skills of English language learners at the high school level in India. The distinct technological aids include Film/ Picture Projection and Language Laboratory.

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Urban Renewal and Redevlopment: Identification of Appropriate Planning Intervention for Indian Cities

Dhote K.K., Silakri R.K. and Onkar P.
Maulana Azad National Institute of Technology, Bhopal, MP, INDIA

Abstract: Unlike their western counterparts, Indian cities didn't have the fortune or misfortune of being demolished in the world war. Most of the Indian cities are built in layers bearing testimony to various rulers during different periods of time and amalgamated to give the present shape. The term Urban renewal and redevelopment which are often used as synonyms have definite meaning and application depending upon the context. The term renewal was defined as fashionable American term of the 1950s, which really meant large-scale destructive redevelopment of urban area, often it was adopted in the United Kingdom to mean the re-planning of towns or urban centers, to modernize them and provide access for traffic, whereas, redevelopment refers to demolition of blighted areas and development on the same site. It is seen as solution to existing problems of congestion and poor design which sometimes results in wasteful of resources, destroying communities, and creating urban deserts until building takes place. In India after independence in 1947 the earlier focus of development was agrarian base. It was only in the 1990's, the era of economic liberalization and globalization it was realized that the cities are the engines of economic growth. This resulted in shifting of focus on urban development. In 2005, the government of India launched Urban renewal mission specifically for the metro Politian regions and million plus cities. It is necessary to understand the complex phenomenon of urban renewal and urban redevelopment either for the degrading inner city or the blighted areas of the newly developed areas in Indian context before adopting any intervention. A clear understanding of physical and social infrastructure and the community participation for the localities in question has to be ascertained before going through with the planning interventions in terms of renewal/ redevelopment or none. What are the factors responsible for renewal or redevelopment and their interrelationship is the prime concern of the planners. In this research Paper it has been tried to find the answer for above questions and in the process has emerged with a logical framework that tries to answer the perpetual dilemma of the planners. The logical framework that can (produce consistent results, and hence) help decide on the Urban Health and the remedial approach best suited for the given case, while maintaining a disadvantaged friendly perspective. It tries to help in prioritization of the above-mentioned methods and attempts to develop an appropriate tool open for duplication in similar Urban Scenarios.
Keywords: Urban renewal, redevelopment and neighborhood intervention.

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Theoretical Discourse on Human Rights for Prisoners of War at Guantanamo Bay Detention Facility

Nairruti Jani
Florida Gulf Coast University, USA

Abstract: This article explores the gaps between human rights principles and international law in light of the treatment of prisoners of war in the detention camp at Guantanamo Bay . This analysis allows subjective interpretation of terms that result in unjust realities at times putting several lives at stake. It examines the torture practices for war prisoners and others held at Guantanamo Bay, Cuba. In light of some legal theories developed by Rawls and Huberman, the final argument in this article deals with the human rights principles that guided the Geneva Conventions and their possible misinterpretations. This article is timely realizing a serious need for revisiting the Third Geneva Convention in light of the extraneous circumstances like the recent wars on terror and prisoners of war held at Guantanamo Bay detention camp.
Keywords: Guantanamo Bay, human rights, prisoners of war, USA, Geneva Convention, policy

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Conceptual Framework of Land Suitability Analysis for Slum Redevelopment Initiatives

Soni Neelam, Onkar Preeti and Dhote Krishna Kumar
Maulana Azad National Institute of Technology, Bhopal, MP, INDIA

Abstract: The fast pace of urbanization exerts considerable pressure on land, which indeed is a scarce natural resource pushing less privileged section of urban population in areas with inadequacy of infrastructure and amenities often termed as slums. In spite of continuous efforts of the government since its first Five Year Plan and even after more than six decades of independence almost one third of urban population in India is forced to reside in slums. Though the slum rehabilitation initiatives had been top on priority, it was only in 2005 when it was realized by the national commission on urbanization that the cities ate the economic engines of growth and there by the focus was shifted on provision of urban infrastructure and basic services for urban poor. The land is a limited natural resource and when talking of sustainability it directly or indirectly remains the prime issue amongst the dimensions of sustainability physical, social, economical or environmental. The urban planning which directs the growth towards development has failed due to time lag and its limited human resource. The second important issue is scarcity of land, incompatible land use and sky rocketing land value. After the launching of most ambitious mission i.e. the Jawaharlal Nehru Urban Renewal Mission (JNNURM) in 2005 and thereby subsequent Rajeev Awas Yojna (RAY) which indeed in an attempt to achieve the Million Development Goal of slum free cities number of models are being developed for slum redevelopment, rehabilitation and renewal. The present paper attempts to identify the issues pertaining to land using the land suitability analysis slum redevelopment. The focus of the paper is to identify the factors of land associated with physical redevelopment, however the socio-cultural, environmental and economical aspects shall also be taken care of. The outcome will be in the form of framework using land suitability analysis for slum redevelopment.
Keywords: Land, Land suitability analysis and Slum redevelopment.

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Family Planning Behaviour of Working Women in Rural Maharashtra: A Case Study of Bhandara District

Nagdeve Dewaram Abhiman
International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai, INDIA

Abstract: The present paper is an attempt to study the family planning behaviour of women in rural Maharashtra. The data collected from two tehsils, 20 villages and 872 eligible women interviewed in the survey has been analyzed. The analysis of data has been done by using bi-variate analysis. It is revealed from analysis that the knowledge of any modern method is almost universal. The female and male sterilization is found to be the mostly known method followed by pill, Copper T, and condom. The female sterilization is most popular and widely prevalent among the users of family planning methods. The current use of family planning methods and female sterilization with respect to educational level indicates that it was higher among illiterates and primary educated women as compared to other temporary methods. The use of family planning by background characteristics such as age, women education, caste, operational land holding and husband's occupation has shown substantial variation. The current use of family planning method by main occupation of the husband

shows that the cultivators/agricultural labourer mostly use female sterilization. Therefore, there is a need to popularize male sterilization and temporary methods like condom, pill and IUD. The analysis of family planning behaviour stressed the need to increase female education and income of the household.

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Higher Education and Empowerment of Women in Assam, India: A Statistical Analysis

Deka Anupam and Bardoloi Indira
Dept.of Statistics Handique Girls' College, Guwahati Assam, INDIA

Abstract: Gender discrimination has been considered as a major obstacle in granting equal opportunity for woman in Higher education as education plays a pivotal role in a country's socio economic development. To examine the empowerment of women in the Higher education field of Assam, a case study has been carried out. Here, a study has been conducted regarding the enrolment of students in various degree and P G courses for the period 2000-2007 under Gauhati University of Assam and the relevant data has been collected. It has been found that though the enrolment of students in the degree levels has been constantly increasing ,but the enrolment of girls are not proportionately increasing, specially in Commerce and Law. On the other hand, in the Post graduate level, these proportions are higher in almost all the subjects (excepts some subjects like M. COM., L.L.M,M. C. A., Mathematics etc.), indicating that more number of girls than boys are taking admission in the P G courses.
Keywords: Field study, Enrolment of girls in Degree and P G levels, Regression lines, Chi Square test, diagrams and statistical tables

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The Positive Dependence between the Rezolutiv Style and the Creative Level

Havarneanu Geanina
University "Al. I. Cuza", Faculty of Psychology and Educational Sciences, ROMANIA

Abstract: Following the semiological approach, we defined the general creativity, the mathematical creativity, the rezolutiv style and we accomplished the taxonomy of mathematical creativity. We structured the monadic type of mathematical creativity and we supposed that the originality of creativity learner is dependent on his rezolutiv style. We imagine an experiment what proves the addiction of the positive dependence between the creativity level and the rezolutiv style.
Keywords: creativity levels (expressive level, productive level, inventive level), rezolutiv style (empiric style, algorithmic style, euristic style).

ISCA-ISC-2012-20SocS-11

Science and Technology: Challenges of 21st Century NGOS and their Role in Development of Science

Verma Kunal and Sakargayen Mayuri
Medicaps, Indore, MP, INDIA

Abstract: NGOs are non-governmental organizations that are legally constituted organization created by natural or legal persons that operate independently from any government. This term originated from the United Nations (UN). In many jurisdictions, these organizations are called "Civil society organizations" or referred to by other names. The number of internationally operating NGOs is estimated at 40,000. National numbers are even higher. Russia has 277,000 NGOs; India is estimated to have around 3.3 million NGOs in year 2009, which is one NGO for less than 400 Indians, and many times the number of primary schools and primary health centers in India. In the last decade, NGOs have gained increased attention among scholars and practitioners of development. They have become increasingly important in the development process of the countries of South. Their main areas of work include humanitarian relief, education services, long-term development, and policy formation and political advocacy. The main aim of the NGOs is to create a quality educational system that is affordable to all. And to promote values such as human rights, respect for nature and local culture. Besides this, activities like Ayurveda, Yoga, local crafts etc. are also provide in institutions like Workaway, Pratham and Hope, India. Through these activities, the NGOs try to build a healthy living environment for the under-privileged and invoke a sense of self respect and dignity among the children. Apart from teaching, some organizations also provide drinking water and food for school students for free. Some organizations like Masoom, Atma, Atwaar and others provide night schooling for adults who could not complete their education in their early years. Established in 1988, the UNESCO/ NGO Collective Consultation on Higher Education consists of 60 organizations representing all areas of the higher education community: regional university associations, student organizations, women's groups, teachers' associations,

as well as organizations specialized in counseling, research, educational assessment and exchange. The UNESCO/NGO Collective Consultation on Higher Education acts as a think tank to assist UNESCO in the orientation of its higher education program, and participates in its implementation. As far as the development in the field of science and technology is considered, it cannot be achieved unless the entire civilization of the country is educationally strong. However, UNESCO also organizes various workshops and competitions for talented individuals and offers scholarships for their education.

ISCA-ISC-2012-20SocS-12

Spiritualism: Way to Holistic-Corporate Life

Rastogi Rachna
English Dept., Institute of Applied Sciences and Humanities, GLA University, Mathura, UP, INDIA

Abstract: The paper explores the model of "corporate spirituality" as a means of guiding and encouraging employees for bringing spiritual values into workplace. Today, values and ethics are an urgent concern because we owe more to life and business—than profits alone. Money as the single bottom line is increasingly becoming a thing of the past. The hottest buzz today is about a "triple bottom line," a commitment to "populace, planet, and profit." Employees and the environment are seen as important as economics. Are spirituality and profitability mutually exclusive? Bringing ethics and spiritual values into the workplace can lead to increased productivity and profitability as well as employee retention, customer loyalty, and brand reputation. Companies practice meditation and exercises such as deep breathing to reduce stress and building shared values. Corporate spiritualism leads to develop a deeper, vital and holistic insight for comprehending core competencies. Organizations with spiritual climate motivate its employees to perform better than others. At an individual level, spirituality at work provides job satisfaction and reduces employee's strain. The profound impact of the theory of Karma through self realization proclaimed by Lord Krishna is the fundamental and widely accepted principle advocated in pious scripture called "Geeta" is truly enlightening.
Keywords: holistic insight, ethics-values, employee's strain, cor-competency.

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Good Governance and Rural Development

A. Hari Prasad
Department of Political Science, Kakatiya University, Warangal- 506009, AP, INDIA

Abstract: The term of 'Good Governance' is being frequently used in our country ever since the World Bank, in 1989, coined it with reference to the sound development of the third world countries. It refers to transparent, accountable people-oriented, participating and responsive governance with fully computerized and web-enabled system, committed to improving the quality of life of the people. Good governance does not occur by chance. It must be demanded by citizens and nourished explicitly and consciously by nation state. It is, therefore, necessary that the citizens are allowed to participate freely, openly and fully in the political process. Good governance is accordingly associated with accountable political leadership, enlightened policy-making and imbued civil service with professional ethos. The presence of a strong civil society including a free press and independent judiciary are pre-conditions for good governance. This paper will deals with the concept of good governance from development perspective. Where in the concept of good governance is seen and analyzed in three modes: i. the state centered governance model; or ii. the market centered governance model; or iii. the community centered governance model. Each model stands as a critique against the other. The final argument ends up considering the community centered model of governance as good governance, from a development perspective.

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Side Bias: Present Day Scenario

Dutta T.[1], Chaugule B.[2], Kumar S.[3] and Verma U.[4]
[1]Indian Institute of Management, Ranchi, Jharkhand, INDIA
[2]Handedness Research Institute, Indiana University, USA and Founder-President, Association of Left-handers, Pune, INDIA
[3]B.I.T Mesra, Ranchi, Jharkhand, INDIA
[4]Arya Mahila P.G College, Banaras Hindu University, Varanasi, INDIA

Abstract: We live in a right-handed world, where things from everyday use to complex machinery are all designed to facilitate the right-hander. A left-hander has to continually adjust in this right-fit world. The reason for a right-fit world is that the majority of the people are right-handers. According to a survey around 80-90% of the population is right-handers, 8-13% left-handers and at least one in every 100 is a mixed hander (Science Daily, 2010). The present study was undertaken to review the situation and find out to what extent the left-handers have over the period of time managed to adjust to a right-fit world. With this objective left, right and mixed-handed subjects were shown a left-handed and a right-handed calendar and asked to identify certain dates of importance in their life. The reaction time was then recorded and analyzed to determine their response latency. Data thus collected would be analyzed to substantiate the aim of the study
Keywords: Hand preference, reaction time, response latency.

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Factors Affecting Gender Discrimination in Indian Society

Jain Kushal
Government Girls' College, Indore, MP, INDIA

Abstract: Half of the world's population is females. They are doing two-third of work of the total work in the world but received only one-tenth of the world's total income. Nearly two-third of the women is illiterates and they have possessed only one percent of the total world's assets. In the world only one-fourth of the families are headed by female. India is a male dominant society and gender discrimination is customized habitually. The Indian constitution gives women equal rights with men, but strong patience traditions persevere, with women's lives shaped by customs that are centuries old. In most Indian families, a daughter is considering as a liability, and she is habituated to believe that she is second-rate and inferior to men. Sons are appreciated and celebrated. The beginning of the Indian thought of pertinent female behavior can be traced to the rules laid down by Manu in 200 B.C. and always away from prestige, power, and property. The aim of the paper is to analyze: i. The factors affecting Gender discrimination in Indian Society, ii. To analyze the impact of Indian government policy to empowering women leadership. On the basis of case study of 500 girls student, we have analyzed the role of socio-economic and other factors in their empowerment and analyzed the impact of government policies to empowering her as leader. My major conclusions are: In spite of cast, and religion, Family size, education level of mother, income level of parents and working position of mother creates major impact on daughter empowerment. Women as the real agents for change because raising a woman's income through training, education and micro-credit lending raises. Women spend their extra money on their families while men spend it on liquor or cigarettes. The impact of government policies to empowering women as leader, seen only on urban girls, even educated rural girls have not knowledge about any government policies to empowering her self as a leader.

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Reflection on Art of Public Speaking

Yadav Garima
Dept of English, Hindustan Institute of Technology and Management, Agra, UP, INDIA

Abstract: There is a myth that states public speakers are born. The fact is you learn public speaking. I do not believe in naturals, it may appear that some people are more gifted, but the the reason they are more gifted is because they developed an interest at an earlier age. The truth is it takes ten-years to be a natural. So a key rule for effective public speaking is that *audiences are egocentric* . What do we mean by egocentric? Just that audiences care most about things that directly affect them. An effective public speaker understands the nature of audiences and adapts speeches to audiences. In order to do this, you must learn everything you can about your particular audience. Then make sure to keep the audience in mind in every decision you make in the speech development process. When you plan your speech this way, you engage in "Audience-Centered" public speaking, which is vital for success. When centering on the audience, you start by finding common traits that enable you to identify with them. Since audiences are concerned with things that they believe will directly affect them, it's your job to find as many different ways that your topic relates to your particular audience. When you are given the opportunity to speak, you are given the opportunity to share your thoughts, feelings and emotions with the world. It is your chance to influence people and to change lives. Moreover these tips can change the life of the person and can make him stand confident. The way you express yourself through your words expresses your skill, ability, talent and what not. 1. Know Your Audience. Can you relate to them and understand their needs? 2. Know Your Subject. Are you an expert or novice on the subject? 3. Write it Out. Have an opening, body, and conclusion with clear transitions from one, point to the next, but don t read it unless you have too. This will kill the dynamics of your presentation. 4. Avoid Crutches. Use visual aids ONLY when it will enhance your presentation. 5. Practice Your Speech. You get better by practice and there is no substitute for practice. 6. Plan in Advance. Mark Twain once said, *It takes about three weeks to plan a spontaneous speech.* You can not start planning too soon as matter of fact I start planning as soon as I know about the speech. 7. Time your Speech. Audience attention fades at 20 - 30 minutes. 8. Don t be Long Winded. Use only what will relate to your audience and what your audience will think is interesting. 9. Avoid Opening with Jokes. Ask questions, use statistics or tell a story, but no jokes. 10. Use Your Own Words. This is the only way I have found to be conversational in a speech. It will also make it more interesting for the audience and you. Tips of Effective Delivery : Open with energy and enthusiasm, Project interest, Dont apologize, Use humor, Use stories and examples, Involve the audience, Make a bold statement, Be aware of your personal appearance, Watch your volume and rate of delivery, Avoid buzz words that others don t understand. Distracting behaviors: Nervous mannerisms, Wringing hands, Pacing to much, Not making eye contact, Hands in pocket, Mumbling, Stiff or sloppy posture, Leaning on the lectern, Not listening to audience, Acknowledge the audience, Look for non-verbal cues, Staring at one person to long, Constant reading from notes. THREE GOLDEN WORDS FOR EFFECTIVE PUBLIC SPEAKING Practice !Practice! Practice.

Keywords: Mumbling, Non verbal clues ,Wringing hands, buzz words, myth.

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Modern Caste System: An Obstacle in Devlopment

Sharma Shailendra Kumar[1], Singh U.V.[1] and Tiwari Praytyush[2]
[1]K.K. PG College, Etawah, INDIA
[2]Ch.Charan Singh Degree College, Heonra, Etawah, INDIA

Abstract: In this age of globalization, each country wants to cope up with the scenario. In the context of India, there are many hindrances in the growth of the country. Casteism is a very vulnerable problem.

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Emerging Trends in the Language of Comtemporary Society is the Reflection of Diaspora

Agarwal Suvarna
Dept of Applied Sciences & Humanities, Hindustan Institute of Technology & Management, Agra, UP, INDIA

Abstract: Certainly, this is truly said that the impact of Diaspora is highly noticeable on our culture and tradition. Nobody is untouched with the influence of language. People when they migrate from one place to another their culture and language automatically gets the impression of that place. The young generation using the words likes "okies…... WoW…. Buddy….., Yummuyyy….. Yuppiiee…. and so on, are the diasporic reflections of western world. Kiran Desai in her novel "The Inheritance of Loss" also explores the impact of foreign culture and individual's experiences that she carries with them and how cultural identity always influence their views, language, and even religion. The novel also focuses on the cultural disappearance through globalization. Desai, on one hand had shown the blend of culture and tradition through prominent characters of the novel, Sai and Gyan. They are the realistic reflections of diaspora as they lived their lives in New York and Nepal respectively, and the languages they speak have the accent and tone which they try to match with the place they are migrated to.

Keywords: Language, Westernization, Culture, Globalization, Diaspora.

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Impact of Multimedia Kit and Video Paper for Science Communication

Bhojak Bharti[1] and Sharma Surbhi[2]
[1]BIFR, II-E-182, JNV Colony, Bikaner, INDIA
[2]Munirka New Delhi, INDIA

Abstract: Now a days there are so many new devices through which modern teachers and communicator can give good education and or presentation to future generation. When teachers will provide good instructional material or good strategies of teaching the output of class will also be good. The teaching strategies are directly influenced on the achievements of the students or the learner. The analysis of multimedia recordings is a challenging task, largely because the obvious solution of watching the recording from the beginning, perhaps taking notes along the way, requires as much time as the length of the recording. Modelistic approaches are basically dependent upon the new technique as well as the new process of teaching. ICT (Information and communication technology) make it possible for the students to access knowledge and information through Internet, T.V. Satellite, Cable network and digital media. Such a phenomenon results in lesser dependence of the learners on textbook content. Under these circumstances it become rather more challenging for the teachers only to plan and organize learning in entirely diverse situations but also synchronise learning method through multiple delivery mechanism. The present paper describe the use of a novel model for effective science communication. Efforts have been made to design various art and techniques by which teaching and learning science can be made more interesting, informative and interactive so that a teacher can provide education through science and vice-versa. The role of Video paper for science teaching/communication has also been investigated.

Keywords: multimedia, video paper.

ISCA-ISC-2012-20SocS-21

Music

Mehrotra Vivek and Shivadurga
English Dept, GLA University,Mathura English Dept, GLA University, Mathura, UP, INDIA

Abstract: Music is the movement of sound to reach the soul for the education of its virtue. The study of music is a part of biology as the study of living organisms.. Music exists because people create it, perform it and listen to it. The human brain is an information processing system. Music is a higher revelation than all wisdom and philosophy. Music is a super-

stimulus to express the strong emotions about the internal mental state of the speaker. The musicality of speech is much more subtle than that of music, but it provides important information which the listener's brain processes in order to derive some information This information is applied to modulate the listener's emotional response to speech, and this accounts for the emotional effect of music. The normal function of the cortical map that responds to consonant relationships between different notes occurring at the same time within harmonies and chords must be the perception of consonant relationships between pitch values occurring at *different* times within the *same* speech melody. There are at least five and possibly six symmetries of music like: Pitch translation invariance, Time translation invariance, Time scaling invariance, Amplitude scaling invariance, Octave translation invariance and Pitch reflection invariance. Constant activity patterns in the speaker's brain are echoed by similar constant activity patterns in the listener's brain. This accounts for the emotional effect of music as an information processing function, results in quite specific explanations of how major aspects of music such as scales, regular beat and harmony are processed in the brain. To many people in many cultures, music is an important part of their way of life. Ancient Greek and Indian philosophers defined music as tones ordered horizontally as melodies and vertically as harmonies. Indian Carnatic and Hindustani are devotional music which melt the heart of the great God Almighty. Tyagarajar, Muthuswami Dikshitar and Shyama Shastry, king Sri Swathi Thirunal Rama Varma, Purandaradasa are the well known singers of devotional compositions. Rabindranath Tagore was a towering figure in Indian music. Meerabai was an aristocratic Hindu mystical singer. We shall see in detail about the music of renowned personalities in our research paper.

ISCA-ISC-2012-20SocS-22

Technology and New Age Society

Jain Anjana
M.L.B. Govt. P.G. Girls College, Indore, MP, INDIA

Abstract: Where world is going today? Crossing all boundaries, all barriers may it be country, language, culture, ideology, profession, economy, I am talking about the path that world has chosen where no one is the leader but still all are followers. How much in this busy world an individual can communicate with his/her family members or relatives, how much time they spend with each other unlike old days when people used to stay at their relatives place for days and kids spending months at their maternal grandparents. Today world is changing rapidly and everyone wants to excel in their field and outbid others, which in turn demand 24/7 exercise, be it kids or corporate person or any other, everyone is in rush today which give them little time to think on social factor of their life. But given a major characteristics of being a social animal, human can't separate himself from his basic nature of living in society, this humanistic need was fulfilled by what is called "Social networking". World of internet is not too old, it took birth and grew recently, but how vital it became in everyone's life today, it filled the huge gap which still can be seen in rural world today. To concentrate more on the social part of it and not the technology part, it made the world very small place, time when it took days to contact person in different part of country, now a person sitting twelve hour time difference can be contacted in seconds, and not only you can contact him but can see him live, this is the power that internet technology gave. Minimalistic forms of self-expression masquerade as a new information economy. Instead, it's a new information democracy that represents the greatest era for self-expression in history. What we say, however, defines the value of the social economy and our place in it. If we are defined by our actions and words, essentially the currencies we exchange, the question is, are we investing in our social capital or social arbitrage? As younger generations growing up in emerging information societies learn to engage with their geo-political and socio-cultural environments, a form of technology-mediated identity, popularly dubbed as the Digital Native, has been the discussion of a growing public and intellectual debate. These digital natives are transforming the ways in which they understand themselves as well as the world around them while engaging with Internet and digital technologies. Younger users of technology are moving towards a reconfiguration of the world, where questions of identity, political participation, social transformation, cultural production, education, and livelihood are being restructured. As already said today's society is way beyond the old ideology of cast, creed, customs, language, religion, color and race, new rules are being defined everyday towards social economic growth of the world. Everyone is coming together where they are communicated with millions and get posted with latest updates in their life, they discuss with each other in real time while being geographically apart and not even getting bugged by that, to support the topic we can have a very nice example of a seven year old social network which grew at a rapid pace making 600 million members till date and counting. Facebook gain its popularity around the globe. If Facebook was a country, it would rank third, just behind the People's Republic of China and India and roughly 190 million ahead of the United States, over 200 million greater than Indonesia, and 300 million greater than Brazil. If we check the age demographics of users in each country, it is used by people of all age, but promising contribution is of age group of 18-25, this band is exactly the age of Facebook and it grew with this age only, this clearly shows what will be the future of social networking as time goes. By the time this 18-25 band moves to 65+ band firmness of this society will be tremendous. Supporting graph shows the

distribution. "The Human Network" to demonstrate how digital social networks were contributing to a new era of society that transcends online and offline relationships and how we foster and interact with each. Not only in perspective of being social and interacting with each other, modern age social networks are playing a vital role in bringing people together for a common cause such as flood or earthquake relief or educating them on a threat of disease like cancer. In recent Arab world revolution Tunisians used twitter to organize their protests, resulting in President Zine al-Abidine Ben fleeing the country. Many more examples, Egypt Revolution, Iran green revolution, Burma protesting monk incident all are backed by strong social network. To be hypothetical, if India had this kind of network in 1857 (first war of Indian Independence) we would have been celebrating 150th years of independence. With all good comes the evil, cons of having such network will reduce the emotional quotient, the touch and feel effect will be reduced and a person's death will be condolence by mere posting a message on his or her photo in profile. The effects of social networking can be seen at work, in the classroom, and throughout society. Excessive use of the technology creates antisocial and house dwelling citizens who lack social skills. The exponential growth of the society is serious concern in today's world; the growth of the society must be regulated. Guidelines, expectations and rules must be set for its proliferation. International standards are mandatory to be subjected as it has mass human involvement. Can be treated as a lethal democratic weapon, which if not controlled can be hazardous for a country and in turn world.

ISCA-ISC-2012-20SocS-23

A Study about Wetlands of Jodhpur District of Rajasthan, India: Maps and Statistics

Ram Nimba[1] and Jakhar Poonam Singh[2]
[1]Dept. of Geography, J. N.V.U., Jodhpur, Rajasthan, INDIA
[1]Mahila P.G.College,K.N.N., Jodhpur, Rajasthan, INDIA
[2]Rajasthan Environment Education Association , Jodhpur, Rajasthan, INDIA

Abstract: Jodhpur is the centrally placed district of Rajasthan surrounded by Nagaur in the East, Jaisalmer in the west, Bikaner in the North and Barmer as well as Pali in the South. The geographical area of the district is 22850 sq. Km. It lies in between 26^0 00 to 27^0 37' North latitude and $72^0$55' to $73^0$52' East longitude. Some of the area of Great Indian Desert Thar also comes within the district. It is a major tourist's destination and forts, palaces, lakes, gardens and forests are worth seeing. Jodhpur is widely visited by tourists throughout the year. Kaylana Lake and Jaswant Sagar Dam are important water bodies of the district. The average rainfall is 30 cm. The maximum temperature touches 49^0 whereas the minimum temperature 1^0C. Total 1934 wetlands are mapped including 1673 small wetlands (< 2.25 ha) with 17032 ha area**.** The River / Streams with 8284 ha. contributed 48.64% to the total wetland area. The Salt pans with 4471 ha (26.25% area) is the second major wetland category, followed by Tanks/Ponds with 1798 ha area i.e. 10.56 %. Thus, the district is dominated by man-made wetlands.

Keywords- wetland, latitude, longitude, destination, geographical.

ISCA-ISC-2012-20SocS-24

Economic Development with Future Management

Jain Kushal
M.J.B.P.G. Girls College, Indore, MP, INDIA

Abstract: Green chemistry focuses on the reduction, recycling, and/or elimination of the use of toxic and hazardous chemicals in production processes by finding creative, alternative routes for making the desired products that minimize the impact on the environment. Green chemistry is a more eco-friendly green alternative to conventional chemistry practices. The green chemistry movement is part of a larger movement ultimately leading to a green economy- namely sustainable development, sustainable business and sustainable living practices. Green chemistry can contribute to achevieng sustainability in three key areas. First, renewabl energy technologies will be the central pillar of a sustainable high-technology civilization. Second, the reagents used by the chemical industry. Third polluting technologies must be replaced by benign alternatives. The aim of the paper is to analysis positive impact of green Chemistry in innovation, of green Economy and Future management. The sustainable and efficient use of energy, materials, and resources is vital to the protection and enhancement of human health and the environment, and the conservation of natural resources. These efforts are integral to accelerate the shift towards sustainable consumption and production to promote environmentally responsible social and economic development.

ISCA-ISC-2012-20SocS-25

Spiritual Intelligence of Prospective Teachers in Relation to their Gender and Caste

Rajput Manoj Kumar
C.M.J. University Shilong, (Meghalaya), INDIA

Abstract: The present research was conducted on prospective teachers to analyze their Spiritual Intelligence in relation to sex and caste. For the purpose a sample of 600 (300 male and 300 female) prospective teachers was selected from the B.Ed. Colleges affiliated to Dr. B.R.A. University, Agra by using semi-probability sampling techniques. Spiritual Intelligence Scale constructed by Roquiya Zainuddin and Anjum Ahmed was used to collect the data. Results revealed that the there is a significant difference in the mean of spiritual intelligence scores of the male and female prospective teachers. The prospective teachers belong to GEN category scored high as compared to the OBC & SC prospective teachers.

ISCA-ISC-2012-1AFS-44

Bioefficacy of Cypermethrin against Spodoptera *litura* (Fab.)

Pooja Singh[1], Chandra Kanta[2] and Kunjwal Neha[3]
Department of Entomology, College of Agriculture ,G. B. Pant University of Agriculture and Technology, Pantnagar-263145, UK, **INDIA**

Abstract: *Spodoptera litura* (Order:Lepidoptera, Family: Noctuidae) is a Noctuid moth which is considered as an agricultural pest. It has a very wide host range of over 120 plant species. Cypermethrin is a synthetic pyrethroid used as an insecticide in large-scale commercial agricultural applications as well as in consumer products for domestic purposes. It behaves as a fast-acting neurotoxin in insects. The bioefficacy of insecticide viz cypermethrin was determined against 7d old larvae of *S.litura* using leaf dip method. All the lab experiments were conducted at 27±1°C and 75± 5% relative humidity. The concentrations of insecticide was 0.02, 0.03, 0.04, 0.05, and 0.06% for cypermethrin 25EC. Castor (*Ricinus communis* Linn.) Leaves were dipped in each above concentrations and provided to larvae for feeding .The different concentrations of cypermethrin showed significant toxicity against S.*litura* larvae in comparison of control .The data regarding the toxicity of Cypermethrin against 7 days old larvae of S.*litura* fed in group of 10/treat/replications. LD_{50} was observed after 24 hrs of treatment was 0.10%, LD_{50} after 42hrs was 0.04% and LD_{50} was recorded after 72hr of treatment was 0.009%. Maximum mortality was observed in T1 with 0.02% concentration(most efficient) and minimum mortality was observed in T5 with 0.06% concentration (least efficient).There was no mortality observed in control treatment.

Keywords: *Spodoptera litura* , cypermethrin, LD_{50}

ISCA-ISC-2012-2AVFS-34

Incidence of Gastrointestinal Parasites of Goat in Mahakaushal region, Madhya Pradesh, India

Singh Alok Kumar, Das G., Roy B., Nath S., Ram Naresh and Sahil Kumar
Dept. of Veterinary Parasitology, College of Veterinary Science and Animal Husbandry, NDVSU, Jabalpur, INDIA

Abstract: Gastrointestinal (GI) parasitism in animals is a common and one of the major problems in India. It causes emaciation, anaemia, oedema, weakness, diarrhoea and death. The study was carried out in Mahakaushal region, Madhya Pradesh in order to determine the incidence of important helminthes infecting goat. A total of 64 slaughtered goat of local breeds were carefully examined during the study period from July 2011 to February 2012. Out of these 64, 56 (87.5%) were found positive for different GI Parasites, the recovered species were identified as *Haemonchus* was predominant sp. followed by *Oesophagostomum, Trichostrongylus, Strongyloides* and *Bunostomum.* The highest mean EPG was in the month of September (9525) but highest mean worm burden was observed during August (703.50). The overall mean worm burden (nematodes) observed was 233.56 and the mean EPG was 3338.89. In addition to the above nematodes, Amphistomes, *Moniezia, Avitellina, Stilesia*, cysticercus tenuicollis had also been recorded.

Keywords: Parasites, Slaughter, Incidence, Goat.

ISCA-ISC-2012-03BS-83

Different type of Signal Transduction Pathways under Abiotic Stresses in Plants

Chandra Kanta[1] and Singh Pooja[2]
Dept. of Biological Sci., College of Basic Sciences and Humanities, G.B. Pant Uni. of Agri. & Tech., Pantnagar-263145, INDIA

Abstract: Abiotic stress is severe environmental stress, which impairs crop production on irrigated land worldwide. All abiotic stresses reduce plant growth and yield. The product of stress –inducible genes which could be directly protecting against these stresses include the enzymes responsible for the synthesis of various osmoprotectants like late embryogenesis abundant (LEA) proteins, antifreeze proteins, chaperons and detoxification enzymes. Another group of gene products involved in gene expression and signal transduction pathways includes transcription factors, protein kinases and enzymes involved in phosphoinositide metabolism. Abiotic stresses and ABA biosynthesis suggested connection between cold, drought, salinity and ABA signal transduction pathways. Plant responses to abiotic stress can be determined by the severity of the stress and by the metabolic status of the plant. Calcium - dependent signaling that leads to LEA type genes and salt overly sensitive signaling that results in ion homeostasis. Overall, the susceptibility or tolerance to the stress in plants is a coordinated action of multiple stress responsive genes, which also cross-talk with other components of stress signal transduction pathways.
Keywords: Abiotic Stress, LEA Protein, Chaperons

ISCA-ISC-2012-03BS-84

Production of Lyco-Cookies (The Role of Lycopene in Protection against UV Radiations and Other Free Radicals

Vina Dewi Lestari Putra and Vaibhav Zamare
Sinhgad College of Science, Ambegaon, (BK), Pune, MS, INDIA

Abstract: The exposure of UV rays or other oxidative stresses influence the function and survival of many types of cells. Carotenoids are accessory light harvesting pigments and play an essential role in the protection of plants against excess light and photooxidative stress. Lycopene is dietary carotenoid of tomato and very effiecient singlet oxygen quencher in the group of carotenoids. Following extraction of lycopene is done by column chromatography. The collected compound was evaporated and the pure lycopene was added to the cookies batter with the same concentration as the daily requirements of lycopene in human for maximum protection. Addition of lyco-cookies as the suggested amount may contribute to a life long protection against UV radiation.

ISCA-ISC-2012-4CS-92

A Novel Method for Extraction of Green Fibers and Composite Preparation

Bhojak N., Modi Rashmi, Tak Neelima and Yadav Neha
Green Chemistry Research Centre, P.G. Department of Chemistry, Govt Dungar College (A-Grade), University of Bikaner, Bikaner 334 003, INDIA

Abstract: *Crotolaria buria* is a small to medium-sized shrub. It generally grows wild in open wastelands and considered to be a useless weed. However, dried plant could be used for fuel and medicinal uses of *Crotolaria buria* have been reported. The strength of the fibers of this plant is very high, hence used by villagers. Parts of the plant are also eaten by the camel in desert area. The present work describes the development of a novel method of isolation of fibre from *Crotolaria buria* and its physiochemical characterization. Simultaneous measurement of effective thermal conductivity and effective thermal diffusitivity of fibers of *Crotolaria buria* reinforced phenolformaldehyde composite have been studied by transient plane source techniques. Effect of different parameters viz pH, medium, concentration and time have been investigated for the isolation of fiber. It has been found that, the activation energy in glass transition region of the composite decreases with the increase in the fiber fraction in the crystallization region and this decreases the rate of crystallization. Activation energy of composites in crystallization region shows weak dependence on the heating rate while depends fully upon fiber fraction in the composite. Further use of micellar medium not only increases the rate of decomposition but also provides better quality fiber from *Crotolaria buria.*and provided better results for the preparation of Green Plastic.
Keyword: Green fibers, composites phenol formaldehyde.

ISCA-ISC-2012-10HS-69

Biochemical Status of Malnourished Preschool Children after Supplementation of Soychakali

Ghatge N.S.
Pravara Rural Education Society's, Home Science and BCA College, Loni. Taluka Rahata, Dist. Ahamadnager, INDIA

Abstracts: Supplementary feeding programmes are the emerging need in under nutrition for vulnerable segment in the population. Food which is used for additional requirement and supply adequate nutrient hence soyachakali was formulated and evaluated for its organoleptic qualities like taste, texture, flavour and over all acceptability.. Highly scored by the panel soyachakali was selected for feeding. The nutritional qualities likes major nutrients such as energy(465.0kcal), proteins (19.3 g) and fats (20.8 g) content found more in soychakali. The micro nutrients such as iron (4.9 mg), zinc (2.1 mg) and calcium (245.5 mg) were also observed higher range in soychakali It also noted, very less antinutrtional . It has shown better keeping qualities upto two months when stored in a high gauge package at room temperature. Soychakali has also shown very low production cost. Hence, it found very cheap and affordable to the below poverty line group of children. The soychakali was given @ 50 g/ child/day. Significant improvements .The biochemical parameters such as haemoglobin g/dl, serum protein g/dl, blood glucose level mg/dl; serum vitamin A µg/dl, serum iron µg/dl and serum zinc µg/dl were analyzed for the every month of interval during research work. highly significant effect on increasing blood glucose level, blood haemoglobin, serum protein, serum vitamin A, serum iron and serum zinc status of preschool children were seen after supplementation of soychakali for six months.

ISCA-ISC-2012-10HS-70

Effect of Low Cost Supplementary Food Products on Body weight and MUAC of Slightly Malnourished Subjects

Anand Sonia, Tiwari Neha and Awasthi Pratima
Dept. of Foods and Nutrition, College of Home Science, GB Pant Uni. of Agri. and Tech., Pantnagar-263145, INDIA

Abstract: Nutrition of infant and young children is critical for their survival, cognitive development and growth not only during the childhood but for their whole life span. The study was carried out to develop low cost supplementary breakfast product and to assess the efficacy of these products on the growth pattern of school children**.** Four low cost supplementary food products were developed which contains high amount of protein and energy to raise the nutritional status and improve the health status of the subjects upon use as supplement for food. For the first part of study i.e. development of the products, four low cost supplementary products Soya mixed chiwada, mixed dal pitha, Amaranth upma and Amaranth khichadi were developed. For the second part of study i.e. for the intervention programme 59 school children of LIG families were selected and divided into two groups- Experimental (30) and Control (29). The experimental group was given any two of the above healthy food products/day for a period of 90 days. The weight and MUAC measurement of both the group before and after 90 days was noted to test the effect of above supplementary food products in increasing the weight and MUAC of subjects. Results of the supplementation of the products in the diet of 30 subjects for 90 days showed increase in body weight and Mid Upper Arm Circumference (MUAC) measurement of experimental group as compare to control group. The control group showed no such improvement. All the food products were found acceptable to the normal and malnourished subjects.
Keywords: Protein, energy, supplementation, malnutrition, human study.

ISCA-ISC-2012-10HS-71

Formulation and Quality Evaluation of Weaning- Mix from Oat (*Avena sativa*) Grains

Tiwari Neha, Anand Sonia and Awasthi Pratima
Dept. of Foods and Nutrition, College of Home Science, GB Pant Uni. of Agri. & Tech., Pantnagar-263145, INDIA

Abstract: Protein- energy malnutrition is an important nutritional deficiency condition that often occurs during the critical transitional phase of weaning in infants, crippling their physical and mental growth. This condition can be prevented to a large extent by introducing weaning foods of quality and quantity at right time in the right proportion. Oat is one of the cereals with higher nutritive values used in a weaning food. To keep in view higher nutritive value and various

beneficial health effects of oat, the present study was designed to study the physical characteristics of oat grain and to compare the nutritional composition of unprocessed, malted and roasted oat flour. The in-vitro protein digestibility and amylase activity has also been done in malted and roasted oat flour. Analysis of sensory characteristics of formulated weaning mix from malted and roasted oat flour and evaluation of its nutritive value that is, proximate composition, calcium, iron, *in-vitro* protein digestibility and amylase activity has also been done under the present investigation. Oat variety UPO-94 was procured from the Department of Genetics and Plant Breeding, College of Agriculture, G.B.P.U.A. &T. Pantnagar. Proximate composition of malted and roasted weaning mixes was determined by A.O.A.C. (1995). Amylase activity was determined by the method given by Bernfelt (1995). The *in-vitro* protein digestibility of the samples was done by the method of Akeson and Stahman (1964). Higher ash (4.20 per cent), crude fat (8.66 per cent), in-vitro protein digestibility (76.66 per cent) and amylase activity (720 ìg/ml) was reported in the malted oat flour, while roasted oat flour was found to be significantly higher in crude protein (17.00 per cent), carbohydrate (66.81 per cent) and energy (403.01kcal). *In- vitro* protein digestibility of roasted oat flour was found to be 55.20 per cent while the amylase activity was 340 ìg/ml. Instant weaning mixes for infants were prepared using oat flour (UPO 94), wheat flour, green gram, and skim milk powder in the ratio of 30:30:25:15 respectively. Two processing methods used were malting and roasting. Higher moisture (5.00 per cent), ash (3.56 per cent), crude fat (9.00 per cent), energy (415 kcal/100 g), calcium (180 mg/100g), amylase activity (730 units) and *in- vitro* protein digestibility (78.40 per cent) was reported in malted weaning mix. Weaning gruel prepared from malted and roasted oat flour were evaluated for their sensory characteristics. Both the weaning gruels were acceptable by the panel members. But the roasted weaning gruel obtained highest mean sensory scores and more accepted by the panel members. Regarding viscosity the malted weaning gruel was less viscous (20 cps) and more nutrients dense as compared to roasted weaning gruel (120 cps) while the market formula has viscosity of 7400 cps.

ISCA-ISC-2012-10HS-72

Impact of Education on Personality of School Going Children

Onam Dayal and Sunita Mishra
Dept. Human Development and Family Studies, School for Home Science BBAU, Lucknow, INDIA

Abstract: The study was aimed at investigating the patterns of personality formation of children as affected by their education level. A Sample of 300 school going children from different income group families were selected purposively from the school of Lucknow city in U.P. They were tested individually for personality development with the help of CPQ personality scale of S.D kapoor and other aspects were studied with the help of a pre-structured interview schedule. The significant value of mean score depict that some of personality factors are affected by education and rest of them are not affected. And the significant value of t-test shows that a difference was found in personality among boys and girls. It is suggested that parental collaboration, is necessary to improve children personality.
Keywords: CPQ personality scale, Variables, *Personality, Education*.

ISCA-ISC-2012-10HS-73

Nutritional Assessment of Rural School- Going Children (7-9 years) of Hisar District, Haryana, India

Vandana Sati and Saroj Dahiya
Foods and Nutrition Department, I. C. College of Home Science, CCS HAU, Hisar- 125004 Haryana, INDIA

Abstract: The present study was conducted in Hisar district, Haryana to assess the nutritional status of 200 rural school going children (7-9 years). Nutritional status of children was assessed in terms of dietary assessment, anthropometric measurement and clinical assessment of signs and symptoms of various nutrient deficiency diseases. Dietary assessment was done by 24 hour dietary recall method for three consecutive days of 100 children. Anthropometric measurements were used to construct indices for malnutrition that were compared to reference values. The results of the study revealed that food and nutrient intake was inadequate and anthropometric measurements (mean height and weight) were significantly ($P<0.05$) lower than reference value. Regarding prevalence of malnutrition, it was found that 54.11 percent of the children were stunted and 55.5% were underweight. There is an urgent need to promote the importance of balanced diet and preparation of nutrient-rich recipes based on locally available food stuffs to improve their nutritional status. Awareness programs regarding affordable but nutritious foods should be introduced by the government through community participation, involvement of NGOs and other sectors. Results of the study can be of use for planning need-based supplementary nutrition programs by the policy-makers for the school children.

ISCA-ISC-2012-10HS-74

Personality and Self Esteem among School Going and Non-School Going Adolescents

Vidyawati and U.V.Kiran
SHSC, BBAU, Lucknow, UP, INDIA

Abstract: Personality development is the development of the organized pattern of behaviour and attitudes that makes a person distinctive. Personality development occurs by the on-going interaction of temperament, character, and environment. Self- esteem is the one important factor required by anybody to succeed in life. It is a well proven concept that if self- esteem developed during the adolescent period, it will last all through at the life. The present study is conducted with an objectiveto compare the self-esteem among school going and non-school going adolescents across the gender.To study the effect of personality on self-esteem of adolescents. The study was conducted on incidental sample, 160 adolescents (80 school going and 80 non-school going adolescents). Subjects were administered the Dimensional Personality Inventory devised by Singh and Singh (2002). To measure the Self-esteem of adolescents, Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used. The results of the study revealed that the highly significant positive correlation exists between personality traits and self-esteem among girls where as in the some group significant positive correlation exist between Assertiveness and Self-Esteem indicating increase in Self-Esteem increases assertiveness. But among boys a non significant negative correlation is observed. the results also indicate the non significant positive correlation exists between activity and Self-Esteem in school going boys and girls non school going , but negative correlation is seen among NSG boys. The research emphasises the importance of schooling for a better personality and self-esteem.
Keywords: Personality, self esteem, gender, adolescents.

ISCA-ISC-2012-12MSS-28

Replacing the Infinity

Sharma Ansh
St. Joseph's Co-Ed School, E-7 Arera Colony, Bhopal-462003, INDIA

Abstract: We have the infinity. Whatever we do not know, or whatever which we could not think, we consider that things to be infinity. For instance, here we have a few questions: i. What is the maximum number of sides a (regular) polygon has? And what is its each interior and exterior angle's measure? ii. What is the end point of any general series of numbers that is in a form of equation? iii. What is the result when any number is divided by zero?

The answers to which are being thought as infinity. But while conducting an experiment, the result what somewhat surprising. In this presentation we show that neither 'infinity' nor 'undefined' was the answer.

ISCA-ISC-2012-15PhyS-32

Effect of doping $FeCl_3$ on the structural and Optical properties of PVA

Jain A.[1,3], Mukherjee G.S.[2] and Banerjee M.[1]
[1]Nanoscience and Nanotechnology laboratory, School of Physics, DAVV, Vigyan Bhawan, Indore-452017, INDIA
[2]Defence Research and Development Organization, Metcalfe House, New Delhi-110054, INDIA
[3]Christian Eminent College, Indore, INDIA

Abstract: Poly (vinyl alcohol) (PVA) is one of the important polymers which is of great interest to the scientists as well as the technologists. It is bio-friendly, easily processible and its structure and properties can be tailored by doping it with various inorganic salts. In this paper, we report the studies done on the poly (vinyl alcohol) PVA films doped with various concentration of hydrated iron chloride. 10, 20, 30 and 40% of $FeCl_3$ doped PVA films were prepared by chemical route. The pristine as well as doped polymer films were characterized by XRD and UV-VIS spectroscopy. UV-Vis absorption spectra were recorded using Shimadzu 2450 double beam spectrophotometer. Pristine PVA film shows well-defined absorption edge indicates the semi crystalline nature of PVA... The bandgap of PVA determined from UV-

VIS spectrum was found to be 5.0 eV. The position of absorption edge of polymer as well as the bandgap is found to shift with the increasing concentration of the dopant The role of concentration of $FeCl_3$ on the position of absorption edge and bandgap is reported and discussed in light of their structures and bonding. The results are also discussed in light of XRD studies carried out on these films.

Keywords: Polymer, $FeCl_3$, UV-VIS spectroscopy, XRD.

ISCA-ISC-2012-15PhyS-33

Effect of Doping Pb on the Structural and Optical Properties of Nanostructured CdS films

Sharma A.[1,2] Chongad L.[1,3] and Banerjee M.[1]
[1]Nanoscience and Nanotechnology laboratory, School of Physics, DAVV, Vigyan Bhawan, Indore-452017, INDIA
[2]Shri Dadaji Institute of Technology and Science, Indore Road, Khandwa, INDIA
[3]Government Arts and Science College, Ratlam, INDIA

Abstract: CdS thin films are widely used in a large number of solid-state device applications such as photoconductors, electroluminescence devices, solar energy conversions etc. Many researchers have focused their attention on enhancing the optical properties of CdS thin films. In this paper, we report the microstructural and optical properties of Pb doped nanostructured CdS films prepared by chemical bath deposition (CBD) method. The experimental conditions like temperature of the bath, deposition time etc were optimized to obtain nanostructured films. These films were characterized by XRD, and UV-VIS spectroscopy. XRD patterns confirm well-formed nanocrystalline CdS with particles The Pb doped CdS films were deposited under identical conditions. XRD studies show well formed nanocrystalline particles with particle size ranging between 16-33nm. UV-VIS spectrophotometer was used to record absorbance spectra and the particle sizes calculated from these spectra are also found to be in confirmation with the findings from XRD. The band gap as determined by UV-VIS spectroscopy is found to decrease in the doped CdS films.

Keywords: Nanostructure, CdS, UV-VIS spectroscopy, XRD, Dopjng.

ISCA-ISC-2012-15PhyS-34

Structural and Optical Properties of $Ni_{1-x}Cu_xS$ Nanoparticles

Chongad L.[1,2] Sharma A.[1,3] and Banerjee M.[1]
[1]Nanoscience and Nanotechnology laboratory, School of Physics, DAVV, Vigyan Bhawan, Indore-452017, INDIA
[2]Government Arts and Science College, Ratlam, INDIA
[3]Shri Dadaji Institute of Technology and Science, Indore Road, Khandwa, INDIA

Abstract: Nanoparticles exhibit unique electrical, optical and magnetic properties not shown by their bulk counterparts. Band gap is an important optical property of materials. In this paper we report tuning of band gap of NiS nanoparticles by doping these with Cu. The $Ni_{1-x}Cu_xS$ nanoparticles were prepared following chemical route. These nanoparticles were characterized by XRD, and UV-VIS spectroscopy. The XRD records show well-formed nanocrystalline particles. The particle size of $Ni_{1-x}Cu_xS$ nanoparticles as determined using Scherrer formula is found to be between 15.31nm to 26.39nm UV-VIS spectroscopy was used to determine the bandgap of these nanoparticles. The band gaps are found to be ranging from 4.64eV to 5.02eV. The fluorescence spectra were also recorded and the results are discussed in this paper.

Keywords: Nanoparticles, Nickel Sulfide, UV-VIS spectroscopy, XRD.

ISCA-ISC-2012-17EduS-15

Different Approaches for Teaching Learning Disabled Children

Nigam Rani, Sudha Chhikara and Sangwan S.
Department of Human Development and Family Studies, CCS Haryana Agricultural University, Hisar-125004, Haryana

Abstract: Learning disability is a disorder which can be remedied using appropriate instructional strategies. The main characteristics of learning disabled children are deficit in information processing. Present investigation was undertaken to assess the learning disability among boys of 10-12 years age group with objective to provide suggestions including different approaches for learning disabled children. These approaches help these children to live a happy and healthy life. Hisar district from Haryana state was selected purposively. From Hisar district Block-I was selected randomly. Hisar city was also purposively selected for urban sample. From Block I five villages named Kaimari, Mangali, Harikot, Daya and Singran were selected randomly. A sample of 60 boys, 30 from rural and 30 from urban, schools were taken. A

check list was administered for screening purpose after that Indian Adaptation of Stanford – Binet Intelligence Scale by Kulshershtha (1971) was used. Maximum boys were found in below average category (83.33% in rural and 76.67% in urban) in language and mathematics (93.33% and 86.67%) components both in rural and urban areas but average category (80.00% and 73.33%) in creativity. No significant differences (t values 0.76, 0.54, 0. 59) were found between rural and urban boys for all the components of learning disability. Remediation of learning disabilities has some basic principles: - (1) providing opportunities and time for practice and (2) Generalizing the concept & skills that have been learned and also (3) Providing a balance programme. All these principles can be maintained by applying following approaches: - these are: Task analysis approach, Cognitive behaviour modification approach, Multisensory approaches & direct instruction system approach. It is clearly state that children with learning disability should be trained in order to enhance their performance in school.

Keywords: Learning disability, language, mathematics, creativity.

ISCA-ISC-2012-1AFS-45

Termite Management through Green Technologies – Reclusive Frontier and Indigenous Domains

Mahapatro G.K.
Indian Agricultural Research Institute, New Delhi, INDIA

Abstract: Termites are one of the most important production constraints in agriculture and *numero uno* urban-pest worldwide. Ironically, they are soil-builders, their ecosystem-service is beyond doubt in tropics, though often ignored. Maize crop-residues/stubbles left after harvesting (rain 2011), in between the wheat rows (winter 2012), tagged-counting for decomposition and soil built by termites from stubbles are measured in the trial proved this fact. In termite-prone areas, soil-drenching and seed-treatment with synthetics are often advocated. In pre- and post-construction, termite control is again exclusively by chemicals, *san* in developed countries where bait-technology and other non-chemical measures are in practice. In developing nations (*eg*. India – study site), mostly farmers, even researchers resort to crude method of applying chlorpyriphos in irrigation in Indian context. Green and clean technological interventions are to be made in termite management in the best plausible way. Few indigenous traditional knowledges (ITKs) are collected, compiled and collated. We could demonstrate experimentally the ITKs - impact of flooding (cracks in soil surface) reducing termite attack, use of a botanical preparation (neem and garlic), role of predatory ants. *Aloe vera* in termite management. The scientific scrutiny is for validating these ITKs in field. Wheat crop is being grown in three various patterns: rice-wheat, maize-wheat and bajra-wheat; both in conventional and zero-tillage conditions. Our observations offered us few valid points in technological interventions. We hypothesized that *push and pull theory*, can well be employed, to the maize crop residues and wheat crop rows. Maize crop residues (stubbles) and wheat seedling-rows were treated in different combinations, with commercially available formulations of entomopathogenic *Beauveria bassiana, Metarhizium anisopliae* (admixed with FYM as well as drenching), garlic based formulation (as repellant). Garlic – naturally is claimed to be bactericidal, fungicidal and repellent to termites. In this ITM (Integrated Termite Management) we used the push-pull-concept, seed treatment, botanicals and biopesticides. Earlier to it, seed-treatment trial was done in the growth chamber (in between paper method) for chlorpyriphos, fipronil, imidacloprid, garlic-based products. Result exhibited the efficacies of chlorpyriphos 20EC, fipronil 5SC & imidacloprid 17.8SL (@4.5, 3ml and 3.5 ml/kg wheat seed, respectively) but detrimental effect for double doses in chlorpyriphos and fipronil. The *push-pull-strategy* can easily be incorporated directly into IPM strategies involving generic insecticides and seed-treatments successfully..
Keywords: Termites, ITK, push-pull-strategy, seed treatment, maize, wheat.

ISCA-ISC-2012-1AFS-46

Termite Mounds and Their Elimination

Mahapatro G.K. and Sachin Kumar
Indian Agricultural Research Institute, New Delhi, INDIA

Abstract: Termites are xylophagous, eusocial insects, live in colonies, with a well-developed caste system comprising of the reproductives (kings, queens), soldiers and the workers. Out of two kinds of termites, wood dwellers are restricted during their life to wood in which they construct tunnels and the nests. The wood dwellers again are of two categories: damp-wood termites: and dry-wood termites. Ground dweller termites (except in one group Kalotermitidae) live in the soil or maintain some connection between their nest and soil. The ground dwellers can be divided into three categories: Subterranean termites living underground and reaching their food above ground under covered runways. The nest is made either underground and is diffuse or in wood. Mound-builder-termites construct earthen mounds above ground which may reach several feet height. Carton-nest builder-termites construct discrete, round, honey combed nests of wood carton. This nest may lie buried or half buried in the ground or may be attached to tree branches (arboreal mound), or may lie inside hollowed trunks and logs. In the Indian region, the earthen mounds are reported to be built by the following species of genus *Odontotermes*: *O. assmuthi*, *O. brunneus*, *O. feae* (occasionally only), *O. gurdaspurensis*, *O. microdentatus*, *O. obesus, O. redemanni* and *O. wallonensis* (Roonwal, 1970), and also from the genera *Macrotermes, Hypotermes, Trinervitermes* and *Nasutitermes* (arboreal mound). In our extensive survey and surveillance, we documented various types of mounds, discussed termite diversity, documented the typical mounds of *O. obesus*, also in stony soil; discussed new/fresh growth in mounds of *O. obesus*, We documented the carton-nest of *Microcerotermes bessoni*, mounds of *O. brunneus. O. microdentatus*, O. wallonensis; and small mound of genus *Nasutitermes*, etc. Deciding the active mounds to be exterminated, one should know which mound is active and needs control. After the rainfall season, the fresh mound growth can well be marked on the mounds. These are the active mounds. The generally accepted chemical method of termite control over the years has been liquid insecticides. However chemicals can be expensive and have

many harmful effects to environment. We tried 2-3 indigenous traditional knowledge (ITKs) for termitaria extermination – like smoking the mounds, planting *Aloe vera* and chemical control by tractamount sprayers. The varied degree of success in the termitaria elimination is discussed in this paper.

Key words: *Aloe vera*, ITK (Indigenous Traditional Knowledge), Termites, Termitaria.

ISCA-ISC-2012-1AFS-47

Development of Tablet Formulation of *Bacillus Thuringiensis Kurstaki*

Paul Bishwajeet, Paul Sangeeta and Mahapatro G.K.
Indian Agricultural Research Institute, New Delhi, INDIA

Abstract: Large number of microbial species belonging to all the major groups like viruses, fungi, and bacteria, the bacterial pathogens has been exploited the most and are recommended as potential biocontrol agent for the control of major insect pests. The microbes used in biopesticides are nontoxic and nonpathogenic to wildlife, humans, and other organisms. The best-known and most widely used *Bacillus thuringiensis* (Bt) insecticides are formulated from *Bacillus thuringiensis* var. *kurstaki* isolates that are pathogenic and toxic only to larvae of the butterflies and moths. *B. thuringiensis* Berliner occupies 90 per cent of the world bio-pesticides market and is pathogenic to more than 525 insects species belonging to various orders but mainly to Lepidopteran, Dipteran, Coleopteran and Hymenopteran. Commercial formulations based on Bt were introduced in 1960s. Bt based products are being used in insect pest management for more than four decades now. In India Bt products are either imported from developed countries or if formulated, they are prepared based on imported technology. Wettable powder formulations of Bt have been reported to cause allergies and irritations to higher animals. Since microbial insecticides are relatively slow in action farmers have a tendency to use higher doses than the recommended ones leading to development of resistance. Lot of biocontrol workers has reported development of Bt resistance among insects of different species. Over-use or misuse of a safe and effective biological insecticide decides the future of the product in the market. Properly used, the bacterium could provide a wonderful way to control insect pests and help farmers to gain high yields with minimal/no use of synthetic pesticides. Misused, however, and pests will grow resistant to it. The efficacy and fate of a pesticide is thus determined to a large extent by the way it is used. Keeping these facts in view an attempt was made to develop a dispersible tablet formulation of *B. thuringiensis kurstaki*. The tablets prepared were so calibrated that one tablet would provide necessary concentration of the Bt spores in a 15 litre spray tank. The tablets were evaluated for their physico-chemical properties as per the standards and bioassays were conducted under laboratory conditions against *Spodoptera litura* (Fab.). The results revealed that the tablets were equally effective when compared with commercial wettable powder formulations of *B. thuringiensis*. The tablets were self-suspending and self-dispersing. Their persistence was also evaluated under field conditions in cabbage crop against *S. litura*. The results obtained indicated that under field conditions also the performance of tablet formulation was better than the commercial wettable powder formulations in managing the rising population of *S. litura*. The main advantage of tablet formulation is that the end user would have minimum contact with the active ingredient rendering it safer.

Key words: *Bacillus thuringiensis*, tablet fromulation, *Spodoptera litura*.

ISCA-ISC-2012-1AFS-48

Use of Transgenic Plants and Biosafety Measures

Mishra U.K.[1], Mishra D.J.[2], Singh Rajvir[3] and Shahi Sudhir Kumar[4]
Janta college, Bakewar, Etawah, INDIA

Abstract: Driven by the need to grow more food from less land, human beings have been trying out all sorts of combination and permutations of desirable nature to effect crop improvement. After the rediscovery of Mendel's Laws of inheritance plant breeding became a science. Plant breeders exploited variations inherited as a result of mutation or hybridization. As we move forward, the dual challenge of feeding a rapidly growing population and an increasingly scarce and threatened agricultural resource base is being more-intensively encountered. By 2025, farmers in developing countries will need to produce sufficient food at affordable prices to meet the projected food demands for over 08 billion people. There is, therefore. an urgent need to enhance productivity in crop plants by infusing new genetic variability. It is in this endeavour, plant biotechnology offers exceptional opportunities to meet the growing needs of food and feed security by enhancing productivity, profitability and environmental sustainability of farming system. Widespread use of transgenic crops is suggested to have major risk of gene dispersal ecological effects, invasiveness or weediness of transgenic, creation of super weeds and super viruses, toxicity and allergenicity to human beings and animal expression of undesirable phenotypic traits and erosion of biological diversity. The potential benefits and possible perils of transgenic crops are now under in

intense public scrutiny and widely being debated. Accordingly, adoption of appropriate biosafety measures including development and implementation of biosafety regulations has been a high priority for countries applying biotechnology for agricultural research and development.

ISCA-ISC-2012-2AVFS-35

Kinadon Induced Glycogen Alteration in Fresh Water Snail *Viviparus Bengalensis*

Pagar J.T. and Erande S.L.
Dept. of Zoology, KSKW Arts Science and Commerce college CIDCO, Nashik-8, MS, INDIA

Abstract: Pesticide have unique position among crop protecting chemicals. The Kinadon an organophosphate pesticide has ample application on account of its efficiency against a wide variety of insect pest. However on its entry into aquatic bodies through runoff water, Possibilities of gross alterations in physio-chemical profile of water cannot be ruled out. Blind used of pesticide bound to affect the non target organism like *Viviparus bengalensis*. Toxicity of kinadon effect on metabolic processes. In present study the toxic potential of kinadon is assessed by acute static bioassay. The average LC50 values were determined for 24 hrs, 48 hrs, 72 hrs and 96 hrs. After finding Lc 50, snails treated with sublethal concentration of kinadon and glycogen was estimated in different organs .The decline in glycogen was found in foot, mantle, hepatopancrease and whole body tissues. The significant role of kinadon in various organ of the experimental animal is discussed and the results are correlated and corroborated with the findings of the earlier researchers.
Keywords: Bioassay, *Viviparus, bengalensis*, Dimicron.

ISCA-ISC-2012-2AVFS-36

Induced Abortion in a Case of Hydrallantois in Primipara Buffelo

Pal Ajendra Singh, Mourya S.K., Kumar Vipin, Sachan Vikas, Kumar Brijesh and Saxena Atul
Department of Obstetrics and Gynaecology, College of Veterinary Science and AH, DUVASU, Mathura, UP, INDIA

Abstract: A non descriptive primiparous buffalo of age group 4-5 years presented at TVCC, Veterinary College, DUVASU, Mathura with the complaint of developing abnormal distention over the past few days. It was moderately anorexic. The buffalo is rounded in caudal view and labored breathing was also noticed.The abdomen was tense and round.Rectal examination revealed that the uterus was fluid filled, tense and occupied the abdomen. Placentomes and fetal parts were palpable.Hydrallantois is an usually fetal gestational disorder characterized by rapid accumulation of watery clear fluid,usually in the last trimester. Hydrallantois condition diagnosed.Animal was given fluid therapy(12-18 liters) and dilation therapy consisting Cloprostenol Sodium 500µg, Betamethasone 40mg, Progynon 30mg, and 48mg Valethamate bromide.The owner was instructed to closely watch the animal.It was aborted with in 18 hour a dead female anasarca fetus.Intra uterine antibiotic therapy given for three days.Hydrallantois cases can be saved if diagnosed at earliest and prompt medical therapy.

ISCA-ISC-2012-2AVFS-37

Dystocia: Arthrogryposis Foetus in Cow

Pal Ajendra Singh, Kumar Rahul, Kumar Brijesh, Singh Vijay and Saxena Atul
Department of Obstetrics and Gynaecology, College of Veterinary Science and AH, DUVASU, Mathura, UP, INDIA

Abstract: A parous non-discript cow aged between 5-6 years was brought to TVCC, DUVASU, Mathura at full term with history of straining since last 2 days. According to owner, water bag has ruptured 5-6 hr ago. In the clinic, the animal was in recumbent condition with heart rate of 48/min, respiration rate 30/min., rectal temperature 101.5 ^{0}F. Pervaginal examination revealed fully dilated cervix with a dry birth passage .The fetus was in longitudinal anterior presentation dorso-sacral position with lateral deviation of head and neck and flexed rigid joints of forelimbs. The case was diagnosed as dystocia due to arthrogryposis fetus. It was decided to go for cesarean section. The animal was stabilized with intravenous fluid therapy consisting inj DNS with 5% dextrose 4 lit. and metronidazole 300 ml. Following this therapy the animal was operated for C.S. under local anesthesia (lignocaine 2%) as per standards. Following laprohysterotomy, the dead foetus was extracted out and was found abnormal. The foetus was having muscular dystrophy and generalized articular rigidity of head, neck and limb joints. All the articular joints had severe rigidity and unable to straighten them. Postoperative treatment recommended for seven days with administered antihistaminics, antiinflammatory, antibiotics, haemostiptics, ecbolics and sufficient amount of rehydration fluid, Ca and P as Post operative treatment for four days. Animal stood up after 5-6 hours of operation, walked little and take water. After 24 hrs. post operation, the animal has

shown signs of returning to normal physiology. On 5th day animal was discharged.

ISCA-ISC-2012-2AVFS-38

C arm Guided Surgical Management of Radius and Ulna Fracture in a Labrador Dog with K wire and Rush pin

Kumar Deepesh, Chaurasia Mritunjay Kumar, Panday R.P., Purohit Sanjay, Malik Vivek, Kasoudhan Ashish Kumar
Department of Veterinary Surgery and Radiology, U.P.Pandit Deen Dayal Upadhyay PashuChikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan, Mathura, UP, INDIA

Abstract: A six year old Labrador dog presented to department of veterinary surgery and radiology, DUVASU , Mathura with history of vehicle accident and loss of weight bearing on its right forelimb. X-ray examination revealed complete comminuted fracture of radius and ulna. Dog was anesthetized and aseptically prepared for orthopedic surgical procedure in routine manner. Radius fracture was reduced and Rush pin of 8cm x 2mm was put in radius in normograde fashion and Ulna fracture was reduced and K wire of 12cm x 2mm was placed in ulna in normograde fashion under C arm guidance. External immobilization with wooden splint was done for 21 days. Animal started partial weight bearing on 2nd day and complete weight bearing on 15th day. Radiographic examination on 21th day showed considerable healing of radius and ulna fracture. C arm guided technique took less surgical time, minimal tissue injury and is a relatively non invasive process.

Keyword: C arm, Labrador, radius ulna, fracture.

ISCA-ISC-2012-2AVFS-39

C-Arm Guided Intramedullary Pinning for Femoral Fracture in Dog

Kumar Deepesh, Ashish kumar Kasoudhan, Pandey R.P., Singh Bharat, Purohit Sanjay, Malik Vivek, Chaurasia Mritunjay Kumar
Department of Veterinary Surgery and Radiology, U.P. Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavdyalay Evam Go Anusandhan Sansthan, Mathura, UP, INDIA

Abstract: A two years old German shepherd dog of body weight 25 kg with diaphyseal comminuted femur fracture presented to department of veterinary surgery and Radiology TVCC, DUVASU, Mathura and subjected to intramedullary pinning. Animal was prepared aseptically and anaesthetised with routinely used anaesthetics and fractured parts of bone were reduced. Two Steinman pins of diameter 4.5 mm and length 15 cm introduced in fractured bone in normograde fashion combined with full cerclage wiring under the guidance of C-Arm. External immobilization was done with Thomas splint for 20 days. Postoperative dog started bearing weight completely after removal of splint. Radiographic studies showed healing with minimal periosteal callus was attained on 42nd day.

Keywords: C arm, German shepherd, Steinman pin, SS wire, DUVASU.

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In Vitro Antioxidant and Antimicrobial Activity of Methanolic root Extracts of *Hyptis suaveolens*

Javed Ahmad[1] , Iffat Khan[2], Ashfaq Ahmad[2] and Kaushar Imam[1]
[1]Department of biochemical Engineering and Food Technology, Harcourt butler technological Institute, Kanpur, INDIA
[2]Department of Biotechnology, Integral University, Lucknow, UP, INDIA

Abstract: The plant Hyptis is a potent medicinal herb and a well known medicinal plant in herbal world. Crude methanolic extract of Hyptis suaveolens were screened for their in vitro antimicrobial activity against pathogenic microorganisms; S.epidermidis; K.pneumoniae B.subtilis;E.aerogens; B.cereus.In-vitro antioxidant and antimicrobial activity determined using 2, 2-diphenyl-1-picrylhydrazyl (DPPH) and agar well diffusion method respectively. In addition,exract of Hyptis suaveolens prepared by soxlet apparatus and were partially purified by preparatory thin layer chromatography (TLC). Results indicated a potent antioxidant and antimicrobial activity of methanolic root extract of Hyptis suaveolens.

Keywords: *Hyptis suaveolens*; methanolic extract; antioxidant; antimicrobial ; DPPH; agar well diffusion assay.

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Copper Toxicity: A Comprehensive Study

Badiye Ashish[1], Kapoor Neeti [1] and Khajuria Himanshu[2]
[1]Institute of Forensic Science (Govt. of Maharashtra), RTM Nagpur University, Nagpur, MH, INDIA
[2]Amity Institute of Forensic Science, Amity University, Noida, UP, INDIA

Abstract: Copper (Cu) is an essential trace minerals that is vitally important for physical and mental health. But due to wide spread occurrence of copper in our food, hot water pipe, nutritional deficiencies tablet and birth control pills increases chances of copper toxicity. Copper is not poisonous in its metallic state but some of its salts are poisonous. Copper is a powerful inhibitor of enzymes. It is needed by the body for a number of functions, predominantly as a cofactor for a number of enzymes such as ceruloplasmin, cytochrome c oxidase, dopamine â-hydroxylase, superoxide dismutase and tyrosinase. It is present in several haematinics and its salts are also used therapeutically because of their astringent and antiseptic properties but sometimes copper salts are poisonous for human organ system. Copper Toxicity is increasingly becoming common these days. It is a condition in which a increase in the copper retention in the kidney occurs. Copper first start depositing in the liver and disrupts the liver's ability to detoxify elevated copper level in the body thus adversely affect nervous system, reproductive system, adrenal function, connective tissue, learning ability of new born baby, etc. When acidic foods are cooked in unlined copper cookware or in lined cookware where the lining has worn through, toxic amounts of copper can leech into the foods being cooked. This effect is exacerbated if the copper has corroded, creating reactive salts. The compounds of copper, often acting poisonously are blue vitriol (bluestone), the sulphate; and verdigris, in large amount, if taken at once, either of these will cause severe vomiting, pain in the abdomen, and purging; afterwards headache, and, in fatal cases, convulsions or paralysis before death. Slow poisoning will result from taking small amounts of copper daily, as in cooked or pickled articles, for a length of time. The current paper provides an overview of copper toxicity: acute & chronic, general symptoms, mode of administration, medico-legal & forensic aspects, possible detection methods, treatment, etc.
Keyword- copper poisoning, chronic poisoning, heavy metal toxicity, copper sulphate.

ISCA-ISC-2012-4CS-94

Study of Photogalvanic Effect in Photogalvanic cell containing mixed surfactant (NaLS+Tween-80), Methylene blue as a photosensitizer and xylose as reductant

Mohan Lal and Gangotri K.M.
Photochemistry Laboratory, Department of Chemistry, Jai Narain Vyas University, Jodhpur, Rajasthan, INDIA

Abstract: Photogalvanic effect was studied in a photo galvanic cell containing methylene blue-xylose-NaLS+Tween-80 system. The photo potential and photocurrent were observed 645.0 mV and 210.0 µA respectively. The conversion efficiency of the system was observed 0.5313 % and fill factor was determined as 0.3024. The cell performance was observed100.0 minutes in dark. The effects of different parameters on the electrical output of the cell were observed and current-voltage (i-V) characteristics of the cell were also studied.
Keywords: Photopotenial, Photocurrent, effect, methylene blue, xylose, Tween-80, Fill factor, conversion efficiency.

ISCA-ISC-2012-4CS-95

Health Hazards due to Lead Poisoning

Rahatgaonkar Anjali[1], Gupta Sapna[2], Nayak B.P.[3], Badiye Ashish[1]
[1]Institute of Forensic Science (Govt. of Maharashtra), RTM Nagpur University, Nagpur, MH, INDIA
[2]Sriram Institute for Industrial Research, New Delhi, INDIA
[3]Amity Institute of Forensic Sciences, Amity University, Noida, U.P., INDIA

Abstract: Lead is a widely mined metal commonly used in petrol, paints, batteries, utensils, plumbing, soldering, printing, insecticides, ceramics and alloy industry. The exposure can be diverse and multiple. Lead poisoning (also known as saturnism, plumbism, or painter's colic) is a medical condition caused by increased levels of the metal lead in the blood. Lead may cause irreversible neurological damage as well as renal disease, cardiovascular effects, and reproductive toxicity. Lead has no biological utility and is hard to eliminate from the body. Children are particularly vulnerable. Lead can influence any organ system. Levels above 10µg/dl are unacceptable level as of now. The toxicity of lead often depends on the blood levels. The lowest toxic range influences intelligence, hearing, and growth and pregnancy outcomes. Encephalopathy is the most dreaded and serious consequence of lead poisoning. Lead poisoning in the community has silently taken epidemic proportions. It is a preventable disease. Combined actions and efforts of the government, public awareness, and societal responsibility of industry and timely interaction of the medical community are desired. All streams of society should channelise efforts to meet the challenge.
Keywords: Lead Toxicity, Plumbism, Saturnism.

ISCA-ISC-2012-4CS-96

Electronic Structure, Non-linear Properties and Vibrational Analysis of Ortho, Meta and Para-Hydroxybenzaldehyde by Density Functional Theory

Hriday N. Mishra Srivastava Rajesh Kumar, Narayan Vijay, Chand Satish, Sachan Alok, Pathak Shailendra, Shukla Vikas, Prasad Onkar and Sinha Leena*
Physics Department, University of Lucknow, Lucknow, INDIA

Abstract: The present communication is aimed at comparing the molecular structural properties, vibrational and energetic data of ortho, meta and para Hydroxybenzaldehyde, in gas phase, due to their commercial importance. The ground state properties of the title molecules have been calculated employing DFT/ B3LYP level of theory using the 6-311++G(d,p) basis set. The mean polarizability of all the three isomers are found to be nearly same in the range 88.415 to 90.933/a.u., but the dipole moment for ortho and meta Hydroxybenzaldehyde are calculated to be 5.0201 and 4.9101 Debye whereas the dipole moment for para Hydroxybenzaldehyde has slightly lower value at 3.4655 Debye. The first static hyperpolarizability of 'p'- Hydroxybenzaldehyde is found to be 1.5 times higher to that of 'm'-Hydroxybenzaldehyde and 5 times higher than 'o'- Hydroxybenzaldehyde. MESP surfaces have also been drawn and compared. In order to obtain a complete description of molecular dynamics, vibrational wavenumber calculation along with the normal mode analysis, have been carried out at the DFT level. The calculated spectra of the molecules agree well with the experimental data.
Keywords: Polarizability, First static hyperpolarizability, Hydroxybenzaldehyde, IR spectra.

ISCA-ISC-2012-5CITS-17

Selection Based Efficient Algorithm for Finding Non Dominated Set in Multi Objective Optimization

Sharma Shailja[1], Singh Garima[1] and Krishna Singh Vir[2]
[1]Department of CS / IT, S.I.T, Mathura, INDIA
[2]Department of CS / IT, IIMT, Ghaziabad, INDIA

Abstract: Non Dominated Sets always plays vital role in solution strategies for multi objective optimization, as the appropriateness of the solution is dependent on the selection of the sets hence efficient search for the optimal solution is dependent on the Non Dominated Sets. Finding Non Dominated set from the set of solutions is very time consuming so to increase the overall performance of the solution strategy an efficient approach is highly in demand. In this paper we have proposed a Selection Based Algorithm which finds effective Non Dominated sets among the set of solutions by establishing dominance among solutions in very less time as compared to the previous approaches.
Keywords: Non dominated sorting, multi objective optimization, non dominated set, selection based approach, non dominance.

ISCA-ISC-2012-7EngS-Civ-11

Comparison of Design of Steel Roof Truss using IS 875 and SP 38

Soni Prabhat[1], Dubey S.K.[1] and Sangamnerkar Prakash[3]
[1]Department of Civil Engineering, Maulana Azad National Institute of Technology, Bhopal, MP, INDIA
[2]Design Cell M.P. Housing Board, Head Office Bhopal, Bhopal, MP, INDIA

Abstract: In this paper, the steel roof truss having 12 m span has been analyzed with design of tubular sections of truss members. The analysis presents comparison for weight of tubular member sections, with the help of which, comparative study has been done between design of truss as per revised provisions of wind load calculations given in IS 875 (Part 3):1987 and designs obtained as per calculations made in SP 38(S&T):1987; Handbook for typified designs for structures with steel roof trusses. Indian Standard Code IS: 875(Part 3)-1987 includes consideration for different conditions of class of structure, topography factor, enlarged provisions of permeability conditions, Terrain, height & structure size factor and various wind zones. These provisions of wind load calculations are different from the considerations used in SP 38(S&T):1987.Because of which, there are considerable variations in design of truss. Hence comparative analysis of design of steel roof truss is needed.
Keywords: Terrain; topography; permeability condition; typified designs.

ISCA-ISC-2012-8EVS-98

Pollution Status of Kaliasot River Water Bhopal, Madhya Pradesh: With Special Reference to Physico-Chemical and Bacteriological Parameters

Vishwakarma Rakesh[1], Sharma Shraddha[2], Dixit Savita[2] and Jain Praveen[3]
[1]Department of Applied Chemistry, Swami Vivekanand College of Science and Technology, Bhopal, MP, INDIA
[2]Department of Applied Chemistry, Maulana Azad National Institute of Technology, Bhopal, MP, INDIA
[3]Centre of IT and Basic Sciences, Madhya Pradesh, Bhoj (Open) University, Bhopal, MP, INDIA

Abstract: Rivers play an important role in human development and are important natural potential sources of irrigation water. The surface water samples of river Kaliasot collected on both sides were analyzed for physico- chemical and bacteriological quality. Though the point sources like domestic waste and sewage are the first order contamination sources in Kaliasot river. Human activity and cattle grazing also add to the river pollution. The industries are also falling in the same line by not following regulation of establishing the effluent treatment plants. Our study revealed that water quality of the Kaliasot river is graded as severely polluted category which not fit for human consumption and recreation but can be use for irrigation. Physico- chemical and bacteriological parameters of surface water like pH, EC, sulfate, phosphate, chloride, nitrate, total hardness, DO, BOD,COD, Fe, Cu, Mn, E.coli in the Kaliasot river system, was used to assess the quality of water for drinking and agricultural purposes. After studying over whole water quality of river some of conservation and management plans also proposed to save river.

ISCA-ISC-2012-8EVS-99

Review on Termite Control Using Botanicals and other

Verma S., Sharma S. and Malik A.
Indian Institute of Technology, Delhi, UP, INDIA

Abstract: Termites are the most serious pest among all cellulose degrading organisms. They severely damage agricultural crops such as wheat, maize, sugarcane, cotton, groundnut, pulses, and forest plantation trees viz. eucalyptus, silver oak, and all kinds of wooden structures in buildings. In India, termites have been reported to cause the yield loss of 15- 25% of maize and many other crops. The most commonly used method for controlling the termites is use of chemical pesticides which cause environmental and animal health hazards. There is an urgent need to lessen or replace the chemical pesticides by environmentally safe and low cost alternatives. Botanicals could be the best option in this regard. The present paper deals with findings on the role of leaves of jatropha (*Jatropha curcas*) and dhatura (*Datura stramonium*), and oils of orange and marigold on termite control. The leaf extracts were prepared in different solvents (hexane, ether and butanol) using soxhlet apparatus and rotary evaporator. The extracts and oils of selected botanicals were tested against two types of termites (*Microtermes obesi* and *Odontotermes obesus*). Encouraging results (with 57-100 % termite mortality in 48 hours) were obtained with different concentrations in no choice bioassay experiments. The data obtained and the information on role of botanical controlling termites will be presented in the paper and at the conference.
Keywords: Termite, *Jatropha curcas, Datura stramonium*, Extract, *Microtermes obesi*.

ISCA-ISC-2012-8EVS-100

Comparative Study on Phytoremediation of Synthetic and Industrial Effluent

Sharma H.K., Dogra P., Sharma N. and Sharma S.
M.M. University, Mullana, Ambala, INDIA

Abstract: The effectiveness of Eichhornea Crassipes in removing metal ions was investigated. Results obtained indicate that plant was very effective in removing Cu^{+2} and Ni^{+} ions. After one week the percentage removal efficiency of copper and Nickel in industrial effluent was 14.4% and 13.5% respectively, which increased to 73.5% for copper and 92.2% for Nickel. After five weeks the plant was able to remove the metal successfully without any physical sign of being affected by it. Results showed that relative growth and conductance, Total dissolved solids, dissolved oxygen and CO_2 values have decreased after phytoremediation. The value of total suspended solids in effluent, after first week was 1990mg/l and in last week it was reduced to 1940mg/l while pH of effluent was increased from 6.85- 7.01. Overall results indicate that Eichhornea Crassipes can be used for phytoremidiation of industrial effluent.
Keywords: pH, EC, TDS, TSS, DO etc.

ISCA-ISC-2012-8EVS-101

Evalutation of Physico-Chemical Parameters of Water from Bham River Khandwa District, Madhya Pradesh, India

Prajapati Anurag and Mishra Shakun
S.N. Govt. P.G. College, Khandwa, MP, INDIA

Abstract: The safety of drinking water is an ongoing concern within the global village (Oja et al., 2008). Only1 % part is available on land for drinking, agriculture, domestic, power generation, industrial consumption, transportation and waste disposals (Murthekar et al., 2011). Bham River is situated near Bhamgarh, 25km. away from Khandwa district. Five sampling sites were selected in our study so as to know the effect of external elements such as pollution and different biological activities etc. The present study has been carried out over a period of 2010 – 2011 However, the data reported here refer to the period march 2010 to Feb.2011 the methods given be Welch (1952) and APHA (1980) were used for the assessment of all physico-chemical features of the water.
Keywords: Physico-chemical, Bham river Khandwa M.P.

ISCA-ISC-2012-9FS-10

Role of Primary Decomposers in Postmortem Interval (PMI) Estimation

Badiye Ashish and Badiye Vaishali
Institute of Forensic Science (Govt. of Maharashtra), RTM Nagpur University, Nagpur, MH, INDIA

Abstract: Forensic entomology is the broad field where arthropod science and the judicial system interact. It is the use of the insects and their arthropod relatives that inhabitat decomposing dead corpses to aid legal investigation. Insect inhabitat and feed on dead corpses. Their duration of stay on the corpse and their life cycle may help in death investigation. The most common objective is an estimation of "Post Mortem Interval", based on the age of maggot collected from the corpse. Forensically important species are Flies (Order Diptera) – blowflies (family calliphoridae). Flesh flies (family sarcophagidae), musid flies (family musidae) and Beetles (Order Coleoptera) – carrion bettles (family siliphidae) and carpet flies (family dermestidae). These insects have their sequence of succession to the corpses and specific life cycle while residing on the body. Some insect species are easy to identify and categorize, while for others, it is difficult because of their small size and morphological similarity. Moreover it is further difficult to identify morphological variation due to environmental factors by available traditional methods. The identification of correct species of insect inhabited on the carrion is of utmost importance. A technical difficulty faced by a forensic entomologist is that it is often difficult or impossible to identify region specific species. To overcome these problems, DNA techniques have been used for the species identification. The advanced molecular techniques such as PCR (polymerase chain reaction), RFLP (restriction fragment length polymorphism), RAPD (random amplified polymorphic DNA) and AFLP (arbitrary fragment length polymorphism) have been of great help.
Keywords: forensic entomology, maggots, carrion feeders, dead body.

ISCA-ISC-2012-10HS-74

Personality and Self Esteem among School Going and Non-School Going Adolescents

Vidyawati and Kiran U.V.
SHSC, BBAU, Lucknow, UP, INDIA

Abstract: Personality development is the development of the organized pattern of behaviour and attitudes that makes a person distinctive. Personality development occurs by the ongoing interaction of temperament, character, and environment. Self- esteem is the one important factor required by anybody to succeed in life. It is a well proven concept that self-esteem developed during the adolescent period, will last all throughout the life. The present study is conducted with an objective to compare the self-esteem among school going and non-school going adolescents across the gender and to study the effect of personality on self-esteem of adolescents. The study was conducted on incidental sample of 160 adolescents (80 school going and 80 non-school going adolescents). Dimensional Personality Inventory devised by Singh and Singh (2002) was administered to measure the personality. To measure the self-esteem of adolescents, Rosenberg Self- Esteem Scale (Rosenberg, 1965) was used. The results of the study revealed that the highly significant positive correlation exists between activity and self-esteem among girls where as in the same group, significant positive correlation exist between Assertiveness and Self-Esteem indicating increase in Self-Esteem increases assertiveness. But among boys a non significant negative correlation is observed. The results also indicate a non significant positive correlation between activity and self-esteem in school going and non school going girls, but negative correlation is seen among non school going boys. The research emphasises the importance of schooling for a better personality and self-esteem.
Keywords: Personality, self esteem, gender, adolescents.

ISCA-ISC-2012-10HS-75

Designing of Indo-Western Garment with Danka Embroidery by using Persian Motifs

Sharma Manjali and Somvanshi Pooja
Department of Home Science (Clothing & Textiles), Banasthali University, Rajasthan, INDIA

Abstract: This problem was undertaken by investigator to add new and interesting idea which can break monotony and give a touch of novelty in construction of indo-western garment with Danka embroidery by Persian motifs for doing Danka embroidery on different article. I were modify Persian motif by which Danka Patti can easily adjust in the motif and 50 respondents were selected for rating of all prepared sample for the acceptance and preference of motifs, placement of motif, color combination, marketability and over all aesthetic appeal. It was concluded from the data that Danka embroidery with Persian motif is successful innovation with reference to design, placement of motif, color combination, marketability and over all aesthetic appeal were appreciated by majority of the respondents.

ISCA-ISC-2012-10HS-76

A New Design Creativity of Block Printing Through Chanderi Designs in Traditional Method

Bhatt Isha
Banasthali Institute of Design, Banasthali University, Newai, Tonk, Rajasthan, INDIA

Abstract: The traditional garment worn by Indian woven is called the saris or sari. While the exact origin of saris is not known, yet researches have shown existence of saris way back in 3000 BC in the Indus Valley civilization. The central Indian state of Madhya Pradesh is Renowned for its Chanderi saris. Chanderi is one of the beat-known handloom clusters in India, particularly famous for its saris, made with mix of silk and cotton. But if we look history, Chanderi has been adapting itself as per needs. Sari is the product of second half of twentieth century only. Madhya Pradesh has not only rich deposits of green woods, abundant wildlife and monumental heritage but too has a created a niche for itself though the art and crafts of the region. The credit of course goes to the people and their age old traditions that have been besieged upon them by their ancestors. Amidst the ebullient festivity prevails the contrast variety of handicrafts that add charisma and uniqueness to Madhya Pradesh. Chanderi is one of the beat-known handloom clusters in India, particularly famous for its saris, made with mix of silk and cotton. But if we look history, Chanderi has been adapting itself as per needs. Sari is the product of second half of twentieth century only. In the heart of India beyond forests and valleys, is famous weaver's town of chanderi in Guna district of Madhya Pradesh. Once chanderi cottons were comparable to Dacca muslins. When the British introduced mill-made fabrics to complete with Indian handlooms the weavers of Chanderi created the present form of the Chanderi saris. They used a silk warp with a fine cotton weft without compromising on the intricate gold borders and jewel like butties, and the weave continued to remain as delicate and exquisite as it was. Colour was introduced into chanderi weaving about 50 years ago. Till then only white saris were woven, which were then washed in saffron to give them their characteristic golden hue and fragrance. Flowers were also used for dyeing these saris into soft pastel colours. Now saris are available in a range of light and dark colours with and without the gold borders and butties. Plain colours are also woven to de used as a base for printing, embroidery and other embellishments.

ISCA-ISC-2012-12MSS-29

Common Fixed Point theorem for four Mappings in fuzzy Metric Space

Namdeo Kailash[1], Shrivastav Rajesh[2], Solanki Manoj[3] and Sharma Manoj[4]
[1]Deptt. of Mathematics, Govt. PG College, Pipariya, MP, INDIA
[2]Deptt. of Mathematics Govt. Science and Commerce College Benazir, Bhopal, MP, INDIA
[3]Deptt. of Mathematics, Sadhuvashwani College Bairagarh, Bhopal, MP, INDIA
[4]Deptt. of Mathematics, Sagar Institute of Research and Technology, Bhopal, MP, INDIA

Abstract: In the Present research paper, we prove common fixed point theorem for four mapping using new condition in fuzzy metric spaces.
Keywords: Mathematics subject classification: 47H10, 54H25

ISCA-ISC-2012-12MSS-30

A New Subclass of Close-to-Convex Functions

Prajapat J.K.[1], Mishra Ambuj[2] and Tandon P.K.[2]
[1]Department of Mathematics, Central University of Rajasthan, Kishangarh, Distt.-Ajmer, Rajasthan, INDIA
[2]Department of Mathematics, Institute of Applied sciences and Humanities, G.L.A. University, NH-2, Mathura, INDIA

Abstract: In this work, we introduce and investigate a subclass $\chi_t(\gamma)$ of analytic and close to convex functions in the open unit disc U = $\{z : z \in C \quad and \quad |z| < 1\}$. We show the relation between class and appropriate subordination. We obtain coefficient estimates, distortion theorems, covering theorems, Fekete-Szego inequality and radius of convexity for the function belonging to the class.

Keywords: close to convex, coefficient estimates, distortion theorems, covering theorems, Fekete-Szego inequality, radius of convexity.

ISCA-ISC-2012-12MSS-31

Gauss Elimination Technique for Linear and Nonlinear Programming Problem

Jain Sanjay
Department of Mathematical Sciences, Government Post Graduate College, Ajmer, INDIA

Abstract: My aim is to present modified and efficient Gauss elimination technique for Linear & Nonlinear Programming Problem. Gauss elimination technique is proposed for solving a Linear & Nonlinear Programming Problem. Gauss elimination technique is quite useful than the earlier existing method because the calculations involved are simple and takes least time. The numerical elimination technique has been illustrated by numerical examples of each type.

ISCA-ISC-2012-12MSS-32

Fixed Point Theorem in Fuzzy Metric Space

Airan Jitendera[1] and Modi Geeta[2]
[1]Department of Humanities, Govt.Women's Polytechnic College, Bhopal, MP, INDIA
[2]Department of Mathematics, M.V.M., Bhopal, MP, INDIA

Abstract: In this paper, we prove a common fixed point theorem by using a more general contraction condition. Also relax the continuity requirement of maps completely. Minimizing the commutativity requirement of the maps of the point of coincidence.

Keywords: Fuzzy metric space, fixed point, R-weakly commuting mappings.

ISCA-ISC-2012-14PCS-46

Applications of Gum Cordia: A Carbohydrate Adjunct and Polymer in Pharmaceutical Preparations

Raj Kumar Jain, Narendra Kumar Jain, Abhay Kumar Singhai
Department of Pharmaceutical Sciences, Dr. H. S. Gour Central University, Sagar-470002, MP, INDIA

Abstract: Nature has provided us a wide variety of materials to help improve and sustain the health of all living things either directly or indirectly. In recent years there have been important developments in different dosage forms for existing and newly designed drugs and natural products, and semi-synthetic as well as synthetic excipients often need to be used for a variety of purposes. Natural polysaccharides represent a group of polymers, having excellent biocompatibility, biodegradability, stability and adequate aqueous solubility. Due to these outstanding merits, they have been used extensively in design of drug delivery systems. These natural polysaccharides which act as gum are widely employed in the pharmacy as thickeners, suspending agents, emulsifying agents, binders and film formers. Gum cordia is one such polymer, which has potential applications predominantly in designing of nanoparticulate delivery systems. It is an anionic gum obtained from fruits of *Cordia obliqua* Willd (Fam: *Boraginaceae*). *C. obliqua*, commonly known as lassora in hindi, is the medium-size deciduous tree native to Asia and Indian subcontinent. The fruit gum is a cheap, economic and easily available option as tablet binder and emulsifier in the list of pharmaceutical excipients. Hence extensive work is needed to investigate the efficacy of *Cordia obliqua* fruit mucilage as pharmaceutical excipients in particular as tablet binder and emulsifier. The aim of present study is to summarise new use of modified gum cordia as pharmaceutical excipients for enteric resistant, sustained and controlled release agent, beads and nanoparticles for opthalmic as well as transdermal delivery.

Keywords: Gum cordia, Mucilage, Enteric Resistant, Controlled Release, Nanoparticles.

ISCA-ISC-2012-15PhyS-35

Phase Conjugation via Stimulated Brillouin Scattering in Semiconductor Quantum Plasmas

Vanshpal R., Dubey Swati and Ghosh S.
School of Studies in Physics, Vikram University, Ujjain, 456010, INDIA

Abstract: Using quantum hydrodynamic model (QHD) an analytical investigation is made for the determination of phase conjugation reflectivity of an electromagnetic wave via stimulated Brillouin scattering in a centrosymmetric, doped semiconductor medium. Effect of Bohm potential on the phase conjugate reflectivity is studied through the quantum corrections in classical hydrodynamic equations. Present paper deals with the qualitative behavior of threshold pump intensity for the onset of OPC-SBS (optical phase conjugation-stimulated Brillouin scattering) and phase conjugate reflectivity with respect to doping concentration with and without quantum corrections. The numerical estimates are made for n-type InSb crystal at 77K duly shined by pulsed 10.6 μm CO_2 laser. Phase conjugate reflectivity with and without quantum effect is found to increase with the pump intensity. Consequently OPC-SBS becomes a possible tool in phase conjugate optics even under not-too-high power laser excitation by using moderately doped n-type semiconductors. It is found that the Bohm potential in the electron dynamics enhances the phase conjugate reflectivity. Above the threshold pump field maximum phase conjugate reflectivity equal to 80% is obtained at pump intensities below optical damage threshold of the crystals. The main utility of the analysis lies in establishing the potential of quantum correction through Fermi temperature and Bohm Potential terms for the reduction in the threshold pump intensity and enhancement in OPC-SBS reflectivity of the said process have been realized.

Keywords: Optical Phase Conjugation, Stimulated Brillouin Scattering, Quantum effect

ISCA-ISC-2012-18CLMS-24

New Dimension in Equity Valuation

Motwani R.K.
Department of Management Studies, Government Engineering College, Ajmer, INDIA

Abstract: The studies on market efficiency clearly depict that it is very difficult to find out the undervalued securities. On the other hand, such undervalued securities cannot be left due to practical difficulties in their identification. There are many models available used to uncover the mispriced securities. One of the methods prominently used for the valuation of securities is price-earnings ratio. Investors have been dependent on the price-to-earnings (P/E) ratio as a tool to decide investment in a particular stock for several years. It has emerged as a simple way to get a sense of how market value of a company's stock compares to its earnings. However, there is a considerably significant problem with this ratio as neither the company's stock price is the true representative of a company's value in the real world nor the earnings of a company are reliable as the same can be easily manipulated. Thus, if an investor wants to really get a glimpse of a company's value as compared to others, he needs new dimension in value philosophy. The present paper describes the very less talked dimension in equity valuation i.e., Enterprise Value. Enterprise value is described as a value that, in theory, represents the entire cost of a company, if someone acquires it. It offers more accurate estimate of takeover cost than market capitalization because it includes a number of important factors such as preferred stock, debt, and cash reserves that are ignored otherwise. The paper also highlights how application of this new dimension in equity valuation helps tremendously in investment decisions, particularly during different phases of market, by taking up a case study of equities from a common industry.

Keywords: Equity Valuation, Price-earnings Ratio, Enterprise Value.

ISCA-ISC-2012-20SocS-26

Agriculture Production and Food Security

Gupta Rashmi
Economics Department, M.J.B.P.G. Govt. Girls College, Moti Tabela, Indore, MP, INDIA

Abstract: India has the largest number of hungry in the world. Food security is focussing on two food grains-rice,wheat.PDS system was based on that low food prices are essential for food security and development of other sectors. This food security missed an elementary issue that is our small and marginal farmers,ariculture workers. The largest hungry in India is in the rural areas, they are involved in the food production process, still they are poor and hungry. PDS (Public Distribution System) is focussing of protecting consumers, this indicates that government offering minimum support price that will be lower than the cost of cultivation. It is unfair to expect poor farmers in the country to bear the burden of keeping food prices low for the sake of consumers where cost of cultivation is increasing day by day. Government should realise for the poor condition of small and marginal farmers and suggested steps should be followed.

ISCA-ISC-2012-20SocS-27

Role of Technology in Election Campaign

Billore Saroj[1] and Billore Dilip[2]
[1]Mata Jijabai Govt. P.G. College, Moti Tabela, Indore, MP, INDIA
[2]Govt. College, Mundi, Dist. Khandwa, MP, INDIA

Abstract: India is a number one democratic country of the world based on parliamentary system which divided into Lok Sabha, Rajya Sabha, Vidhan Sabha, Vidhan Parishad, Janpad and Panchayat. For each & every steps election & nomination of member based. Majority of seats are filled by election. In which public voting play a major role. To attract the voters, political parties takes help of modern technology tools like radio, television, CDs etc. Now a days for the first time in India, 3D technology is used in Gujarat state election. Scientist says that image effect is more powerful than other technology which is likely to be proved in public meetings of election. In this paper all the technology tools are discussed in relation to election.

ISCA-ISC-2012-20SocS-28

The Role of Science and Technology in Sustainable India's Sevelopment - A Preview

Verma Bandana, Sharma Shailendra Kumar and Verma Neha
KKPG College, Etawah, INDIA

Abstract: The role of science and technology in sustainable human development has been receiving considerable international and national attention, particularly after the World Summit on Sustainable Development (WSSD). Science and technology have been central to poverty alleviation and economic development. However, the large chunk of the benefits of science and technology has not reached the majority of poor both in developing and developed countries. This hard truth has been assertively acknowledged by the UN Commission on Science and Technology for Development (UNCSTD). As a developing nation faced with the stiff task of ensuring speedy development while at the same time safeguarding environment concerns, India needs to explore and establish those forms and models of development that are sustainable. For sustainable development, networking between policy makers, scientists, technocrats, bureaucrats and development practitioners is of paramount importance at this juncture. In this context, according to UNCED Report, "Environmentally sound technologies protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes. Environmentally sound technologies in the context of pollution are 'process and product technologies' that generate low or no waste and contribute for the prevention of pollution. This implies that when we discuss transfer of technologies, the focus is not only on individual technologies, but on total system too, which includes know-how, procedures, goods and services, equipment as well as organizational and managerial procedures.

ISCA-ISC-2012-20SocS-29

Developing Hindi Language from the local to International Level

Mutwani Aruna
Govt. P.G. College, Dhar, MP, INDIA

Abstract: Hindi is the contact language of our contrary. Our society talks in Hindi manly. English and Spanish are the bigger language of contact or communication in this world. The reach of English is a bout 51 crores of people whereas the Spanish reaches about 42 crores. The figure of Hindi is about 49 crores. The figure suggests that Hindi is more the language of others than ours. Today Hindi is changing its form local to global. We can see a substancial infect of Hindi in the countries like Singapore, Hong Kang, Mauritius, Surinam, Figi, Gugana, Trinidad etc. Today, at the international level, Hindi has become the language of business as well, Report Merdok han changed the star plus into a Hindi channel. With the magical effect of liberalization and Hindi the popularity of advertisement in increased 10times. Bollywood has a troseleeted Hindi on its language. Hindi is the language of common man and its the common man that has made Hindi very special Hindi has always mined on the shoulders of the common and has achieved the importance at the international level by moving from the local to the global stature. No Matter who soerer considers it of a secondary status. Prof Rupert Sneil of England has rightly said, "Hindi is part of life. Hindi is online Hindi does not belong to any one group or caste, or colour, or creed or religion or a route of a country or a culture. It is of India. It is of Mauritius. If is of England. It is of entire world. Hindis yours. Hindi is mine."

Keyword: Contect laugeuage, advertis ement, global stracture, religion, entire world.

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