

5th International Science Congress



ISC-2015

8th - 9th December-2015

SOUVENIR

Diverse Resources: Solutions and Advancements



Venue

Tribhuvan University
Kirtipur, Kathmandu, Nepal

Organized by

International Science Congress Association

5th International Science Congress (ISC-2015)

8th - 9th December 2015



Tribhuvan University
Kirtipur Kathmandu, Nepal



Souvenir of 5th International Science Congress
Kathmandu, Nepal, 8th-9th Dec. (2015)

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5th International Science Congress

ISC-2015

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8th and 9th December-2015

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Diverse Resources: Solution and Advancement

Venue

Tribhuvan University, Kirtipur, Kathmandu, Nepal

Under the auspices of

Nepal Chemical Society

and

Central Department of Chemistry,

Tribhuvan University, Kathmandu Nepal

Organized by

International Science Congress Association

Krishnaashraya, 427, Palhar Nagar, RAPTC, VIP- Road, Indore-452005, MP, India

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Kathmandu, Nepal, 8th-9th Dec. (2015)

ISC-2015



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ISC- 2015 Inaugural Ceremony

Tuesday, 8th December 2015, Time 10:00 am

Inauguration By

Prof. Dr. Tirtha Raj Khaniya

Vice Chancellor, Tribhuvan University,
Kirtipur, Kathmandu, Nepal

Prof. Guna Nidhi Nyaupane

Rector, Tribhuvan University, Kirtipur,
Kathmandu, Nepal

Prof. WP Siripala

Senior Professor, Department of Physics, University of Kelaniya,
Kelaniya, Sri Lanka

ISC-2015 Valedictory Ceremony

Wednesday, 9th December 2015, Time 03:30 pm

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Kathmandu, Nepal

Prof. JKDS Jayanetti

Senior Professor, Department of Physics, University of Colombo,
Colombo, Sri Lanka



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Prof. Dr. Dipak Sharma

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6th International Science Congress (ISC-2016)

Focal Theme: Research Digitization: Strengthening Cultural, Commercial & Scientific Development
8th and 9th December 2016

Organized by

International Science Congress Association

Under the auspices of

Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Pune, Maharashtra, India

There are twenty sections namely: 1.Agriculture, Forestry and Horticulture, 2.Animal, Veterinary and Fishery, 3.Biological Sciences, 4.Chemical Sciences, 5.Computer and Information Technology, 6.Earth and Geology, 7.Engineering, Architect and Planning (Civil, Electrical, Electronics, Mechanical, Fire, Textile, CS etc), 8.Environmental Sciences, 9.Forensic, Medical, Dental and Nursing, 10.Family, Community and Consumer, 11.Material Sciences 12.Mathematical and Statistical Sciences 13.Pharmaceutical Sciences, 14.Physical Sciences, 15.Physical Education and Sports, 16.Educational Sciences, 17.Commerce, Law and Management, 18.Library Sciences 19. Language, Literature and Culture 20.Social and Humanity: Anthropology, Behavior, Sociology, Social Work, psychology, Economics, Political Science, Geography, Drawing, Music, Dance, Philosophy, History, Journalism, Media and NGO.

Abstracts will be published in Print Souvenir ISBN 978-93-84659-14-1 E-Souvenir ISBN 978-93-84659-15-8

After approval of experts, full papers will publish in international peer reviewed journal "Research Journal of Recent Sciences"

Awards

International Young Scientist Award – For Best Oral Presentation (Each Section)
International Young Scientist Award – For Best Poster Presentation (Each Section)
International Best Oral Presentation Award (Each Section)
International Best Poster Presentation Awards (Each Section)

Important Dates

Submission of Abstract (Print Souvenir with ISBN) upto : 10th November 2016
Submission of Abstract (E-Souvenir with ISBN) upto : 30th November 2016
Early Registration : 31st May 2016
Acceptance of Abstract upto : 5th December 2016
Last date of Submission of Full Paper : 30th November 2016
Late registration fees : From 1st June 2016

Registration Fee

Before June 1st, 2016			
	Indian	SAARC	Foreign
Delegates	Rs. 2050/-	\$ 35	\$ 80
Students/RS	Rs. 1250/-	\$ 30	\$ 50
Spouse/Others	Rs. 1050/-	\$ 25	\$ 50
From June 1st, 2016 to July 31st, 2016			
Delegates	Rs. 2250/-	\$ 40	\$ 100
Students/RS	Rs. 1550/-	\$ 35	\$ 75
Spouse/Others	Rs. 1050/-	\$ 25	\$ 50
From August 1st, 2016 to September 30th, 2016			
Delegates	Rs. 2550/-	\$ 45	\$ 125
Students/RS	Rs. 1850/-	\$ 40	\$ 100
Spouse/Others	Rs. 1050/-	\$ 25	\$ 50
From October 1st, 2016 to November 30th, 2016			
Delegates	Rs. 3050/-	\$ 50	\$ 150
Students/RS	Rs. 2050/-	\$ 45	\$ 125
Spouse/Others	Rs. 1050/-	\$ 25	\$ 50
From December 1st, 2016 to December 7th, 2016			
Delegates	Rs. 3250/-	\$ 60	\$ 200
Students/RS	Rs. 2250/-	\$ 50	\$ 150
Spouse/Others	Rs. 1050/-	\$ 30	\$ 50
From December 8th, 2016 and December 9th, 2016			
Delegates	Rs. 3550/-	\$ 60	\$ 200
Students/RS	Rs. 2550/-	\$ 50	\$ 150
Spouse/Others	Rs. 1550/-	\$ 30	\$ 50



Souvenir of 5th International Science Congress
Kathmandu, Nepal, 8th-9th Dec. (2015)

ISC-2015

3rd International Virtual Congress (IVC-2016)

Focal Theme: Global Research: Value, Impact and Outcome
&

Workshop on Environmental Studies

5th to 10th August 2016

Organized by

International Science Congress Association

www.isca.in, www.isca.net.co

There are twenty sections namely:

1.Agriculture, Forestry and Horticulture, 2.Animal, Veterinary and Fishery, 3.Biological Sciences, 4.Chemical Sciences, 5.Computer and Information Technology, 6.Earth and Geology, 7.Engineering, Architect and Planning (Civil, Electrical, Electronics, Mechanical, Fire, Textile, CS etc), 8.Environmental Sciences, 9.Forensic, Medical, Dental and Nursing, 10.Family, Community and Consumer, 11.Material Sciences 12.Mathematical and Statistical Sciences 13.Pharmaceutical Sciences, 14.Physical Sciences, 15.Physical Education and Sports, 16.Educational Sciences, 17.Commerce, Law and Management, 18.Library Sciences 19. Language, Literature and Culture 20.Social and Humanity: Anthropology, Behavior, Sociology, Social Work, psychology, Economics, Political Science, Geography, Drawing, Music, Dance, Philosophy, History, Journalism, Media and NGO.

Abstracts will be published in E-Souvenir ISBN 978-93-84648-78-7. After approval of two experts, we will publish full papers in special issue of an international peer reviewed journal "Research Journal of Recent Sciences" (ISSN 2277-2502).

Important Dates

Conference & workshop Date	:	5 th - 10 th August 2016
Submission of Abstract (E-Souvenir with ISBN) up to	:	4 th August 2016
Early Registration	:	31 st May 2016
Acceptance of Abstract upto	:	04 th August 2016
Last date of Submission of Full Paper	:	04 th August 2016
Late registration fees	:	From 1 st June 2016

Registration Fees for Conference and Workshop

	Indian	SAARC	Foreign
Upto May 31 st , 2016	Rs. 1050/-	\$40	\$60
From June 1 st , 2016 to June 30 th , 2016	Rs. 1550/-	\$45	\$80
From July 1 st , 2016 to July 31 st , 2016	Rs. 1750/-	\$50	\$100
From August 1 st , 2016 to August 4 th , 2016	Rs. 2050/-	\$55	\$120
From August 5 th , 2016 to August 10 th , 2016	Rs. 2250/-	\$60	\$150

Registration fees for ISCA Fellow Members India 1050/- , SAARC \$ 25, Foreign \$ 50.

Abstracts / Papers should be submitted by email: conferenceivc@isca.net.co , conferenceivc@gmail.com

With Warm Regards

Dr. Ashish Sharma

Conference Co-Ordinator

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ashishsharma34@gmail.com



2nd International Young Scientist Congress (IYSC-2016)

Focal Theme: Contemporary Youth: Technology, Promises and Threats
&

Workshop on Lifestyle Management

8th and 9th May 2016

Organized by

International Science Congress Association

under the auspices of

Mother Theresa Post Graduate and Research Institute of Health Science, Puducherry, India

There are twenty sections namely: Agriculture, Forestry and Horticulture, 2. Animal, Veterinary and Fishery, 3. Biological Sciences, 4. Chemical Sciences, 5. Computer and Information Technology, 6. Earth and Geology, 7. Engineering, Architect and Planning (Civil, Electrical, Electronics, Mechanical, Fire, Textile, CS etc), 8. Environmental Sciences, 9. Forensic, Medical, Dental and Nursing, 10. Family, Community and Consumer, 11. Material Sciences 12. Mathematical and Statistical Sciences 13. Pharmaceutical Sciences, 14. Physical Sciences, 15. Physical Education and Sports, 16. Educational Sciences, 17. Commerce, Law and Management, 18. Library Sciences 19. Language, Literature and Culture 20. Social and Humanity: Anthropology, Behavior, Sociology, Social Work, psychology, Economics, Political Science, Geography, Drawing, Music, Dance, Philosophy, History, Journalism, Media and NGO.

Abstracts will be published in E-Souvenir ISBN **978-93-84659-01-1**

After approval of two experts, we will publish full papers in special issue of an international peer reviewed journal
"Research Journal of Recent Sciences" (ISSN 2277-2502)

Award: International Young Scientist Award

Important Dates

Conference and Workshop Date	: 8 th & 9 th May 2016
Submission of Abstract (E-Souvenir with ISBN) upto	: 30 th April 2016
Early Registration	: 31 st January 2016
Acceptance of Abstract upto	: 30 th April 2016
Last date of Submission of Full Paper	: 30 th April 2016
Late registration fees	: From 1 st February 2016

Registration and Workshop Fee

Before 1 st February 2016		
	Indian/SAARC	Foreign
Delegates	Rs. 1050/-	\$ 20
Students	Rs. 1050/-	\$ 20
Spouse/Others	Rs. 750/-	\$ 20
From 1 st February 2016 to March 31 st , 2016		
Delegates	Rs. 1550/-	\$ 25
Students	Rs. 1550/-	\$ 25
Spouse/Others	Rs. 750/-	\$ 25
From April 1 st , 2016 to April 31 st , 2016		
Delegates	Rs. 2050/-	\$ 30
Students	Rs. 2050/-	\$ 30
Spouse/Others	Rs. 750/-	\$ 30
From May 1 st 2016 to May 7 th , 2016		
Delegates	Rs. 2250/-	\$ 35
Students	Rs. 2250/-	\$ 35
Spouse/Others	Rs. 1050/-	\$ 35
From May 8 th , 2016 and May 9 th , 2016		
Delegates	Rs. 2550/-	\$ 40
Students	Rs. 2550/-	\$ 40
Spouse/Others	Rs. 1050/-	\$ 40

Registration fees for ISCA Fellow Members: India /SAARC INR1050/- , Foreign \$ 20.



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Thesis	Doctorate	Rs. 2550/-	\$ 225
	Post - Doc	Rs. 3050/-	\$ 275
LabManual/Essay/CaseStudyAll		Rs. 2050/-	\$ 170
Book/Procedding/Souvenir	Up to 100 pages (A4)	Rs. 3050/-	\$ 225
	Up to 200 pages (A4)	Rs. 5050/-	\$ 325
	Up to 500 pages (A4)	Rs. 7550/-	\$ 425
	More than 500 pages (A4)	Rs. 10050/-	\$ 525

Note: The discount for ISCA Fellow Members is 30%. For detail visit www.isca.in

Please send your information at contact@isca.co.in , iscaepublications@gmail.com

Thank you in advance for your kind support

With Warm Regards

Prof. Ashish Sharma

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5th International Science Congress (ISC-2015)

8th - 9th December 2015

at

Tribhuvan University, Kathmandu, Nepal

www.isca.net.co

Programme Schedule

Date	08:00 am to 10:00 am	10:00 am to 11:00 am	11:00 am to 01:00 pm	01:00 pm to 02:00 pm	02:00 pm to 03:30 pm	03:30 pm to 05:00 pm	05:00 pm to 06:00 pm
8 th Dec. 2015	Registration & Breakfast	Inaugural Ceremony	Plenary Sessions	Lunch & Interaction	Special Lecture & Sectional Programme	Sectional Programme	High Tea
9 th Dec. 2015	Breakfast & Poster Presentation	Sectional Programme	Sectional Programme	Lunch & Interaction	Sectional Programme	Validictory Ceremony	High Tea

Date 8th December 2015

09:00 am to 10:00 am: *Sectional President, Sectional Secretary, Sectional Recorders are requested to assemble in Auditorium for smooth conduction of sectional program.*

Date 9th December 2015

08:00 am to 10:00 am: *Poster Presentation*

10:00 am: *Sectional Programme in continuation of first day.*

02:30 pm: *Group Photograph*

04:30 pm: *Certification Distribution*



Dr. Snehal Satish Shastri Memorial Lecture

ISCA-ISC-2015-Plenary Session-01

Emotions of Human: A Double Edged Sword

Yogaranees Sakhivel

Faculty of Education, University of Colombo, Colombo, SRI LANKA
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Mankind has been blessed with the ability to act upon his feelings that are a vital part of our daily life. All feelings are called emotions which control every aspect of our life. Some of the basic emotions we experience are apathy, grief, fear, lust, anger, pride, courageousness, and acceptance. They help us experience the world as well as express ourselves and communicate with others. Emotions are like powerful programs that define our abilities.

How we think, feel and act depends on our emotions. In other words, emotions can affect on our thinking and behaviour (e.g. teacher grading practices), work (e.g., teachers' burnout and job satisfaction), and relationships (e.g., teacher-student interaction). Defining emotion is difficult because it is not easy to tell when a person is in an emotional state. However, based on the psychological reactions the person shows when he is in an emotional state, emotion can be defined as feeling, or affect, that involves a mixture of physiological arousal (a fast heartbeat, for example), conscious experience (thinking about being in love with someone, for example), and overt behaviour (a smile or grimace, for example).

When we think about emotions, a few dramatic feelings, such as rage, fear, glorious, and joy, usually spring to mind. Just as with motivation, there are different kinds and intensities of emotions. Psychologists have classified our many emotions. Robert Plutchik (1980) for example, believes emotions have four dimensions: (1) they are positive or negative; (2) they are primary or mixed; (3) many are polar opposites; and (4) they vary in intensity. Ecstasy and enthusiasm are positive emotions; grief and anger are negative emotions. Think about your ecstasy when you get an unexpected A on a test, or your enthusiasm about the football game this weekend – these are positive emotions. In contrast, think out negative emotions, such as your grief when someone close to you dies or your anger when someone verbally attacks you. Positive emotions enhance our self-esteem; negative emotions lower our self-esteem. Positive emotions improve our relationships with others; negative emotions depress the quality of those relationships.

Though emotions are like colour spectrum ranging from primary emotions (happiness, disgust, surprise, sadness, anger and fear) to the mixture of primary emotions (disappointment jealousy), this article exclusively focuses on the most powerful emotions - anger and empathy. Anger has a strong impact not only on our social relationships, but also on the person experiencing the emotion. People often get angry when they feel they are not being treated fairly or when their expectations are violated. Views on release pent-up anger may vary. Psychoanalysts promote catharsis where anger or aggressive energy is released by directly or vicariously engaging in anger or aggression; the catharsis hypothesis states that behaving angrily or watching others behave angrily reduces subsequent anger. Social learning theory argues strongly against this view. This theory states that by acting angrily, people often are rewarded for their anger, and that by watching others display anger, people learn how to be angry themselves. Which view is right?

Many Western and Eastern researchers have found that people who tend to suppress their aggressive energy are found to be associated with physical health problems like inability to get sleep or stay asleep, headache and pains in head, indigestion or stomach upset, feeling very tired, decrease in appetite, fever, nausea, back pain, and heart rate faster than usual. A review of research literature shows that suppressed anger may be a symptom of good manner, but seems to increase one's blood pressure just as much as expressed anger. Such emotions tend to raise susceptibility to and progression of cancer as well as Coronary Heart Disease (CHD). So, anger turns out as a double-edged sword. The bottom line is that appropriate expression in terms of frequency, intensity, and duration (rather than suppression) can help us to become healthy.

Emotional Intelligence

The ability to express and control our emotions is essential, but so is our ability to understand, interpret, and respond to the emotions of others. Imagine a world where you could not understand when a friend was feeling sad or when a co-



worker was angry. Psychologists refer to this ability as emotional intelligence, and some experts even suggest that it can be more important than IQ. Emotional intelligence is the capacity for recognizing our own feelings and the feelings of others, for motivating others, and for managing emotions well in ourselves and in our relationships. In 1995 the concept of emotional intelligence is popularized after publication of psychologist Daniel Goleman's book *Emotional Intelligence: Why it Can Matter More Than IQ*. According to him, emotional intelligence has five key areas:

Self-awareness: Self-awareness involves knowing your own feelings. This includes having an accurate assessment of what you're capable of, when you need help, and what your emotional triggers are.

Self-regulation: This involves being able to keep your emotions in check when they become disruptive. Self-management involves being able to control outbursts, calmly discussing disagreements, and avoiding activities that undermine you like extended self-pity or panic.

Self Motivation: Everyone is motivated to action by rewards like money or status. Goleman's model, however, refers to motivation for the sake of personal joy, curiosity, or the satisfaction of being productive.

Social awareness: While the three previous categories refer to a person's internal emotions, this one deals with the emotions of others. Empathy is the skill and practice of reading the emotions of others and responding appropriately.

Social skills: This category involves the application of empathy as well as negotiating the needs of others with your own. This can include finding common ground with others, managing others in a work environment, and being persuasive

Emotional Intelligence can be a key to success in your life – especially in your career. The ability to manage people and relationships is very important in all leaders, so developing and using your EI can be a good way to show others the leader inside of you.

Empathy

“Put oneself into somebody else's shoes” is the phrase people generally use to depict the psychological construct empathy. Empathy is, at its simplest, awareness of the feelings and emotions of other people. It is a key element of Emotional Intelligence, the link between self and others, because it is how we as individuals understand what others are experiencing as if we were feeling it ourselves. Empathy goes far beyond sympathy, which might be considered ‘feeling for’ someone. Empathy, instead, is ‘feeling with’ that person, through the use of imagination. For example, if you see a homeless person living under a bridge you may feel sorry for him and give him some money as you pass by. That is pity or sympathy, not empathy. If, on the other hand, you make an effort to look at the world through his eyes, to consider what life is really like for him, and perhaps have a conversation that transforms him from a faceless stranger into a unique individual, then you are empathizing.

Empathy seems to have an evolutionary history. This is commonly observed in primates as well. Empathy has been associated with two different pathways in the brain. Some aspects of empathy can be traced to mirror neurons, cells in the brain that fire when we observe someone else perform an action in much the same way that they would fire if we performed that action ourselves. Research has also uncovered evidence of a genetic basis to empathy. However, studies suggest that people can enhance (or restrict) their natural empathic abilities. Having empathy doesn't necessarily mean we'll want to help someone in need, though it's often a vital first step toward compassionate action.

Are females more empathic than males?

The ability to perceive another person's feelings and adapt one's own behavior is a cornerstone of all human social interactions. We all have some ability to understand our peers' emotional states by observing their actions, expressions, and words, but a change in our hormone levels can alter that ability. The studies conducted in this regard showed the association of sex hormones with empathy. Male sex hormone testosterone and female sex hormone oxytocin play a major role in reading other people's emotions. In one study women were given small dose of the male sex hormone testosterone. It was found that they were less able to empathise with others. A new study says too much testosterone reduces the ability to read other people's emotions. Researchers at Utrecht and Cambridge Universities administered the male sex hormone testosterone to 16 women, and measured their ability to “mind read” – infer what a person is thinking or feeling from photographs of facial expressions. They observed that the women's ability to mind read was diminished.



Another study shows that mind-reading can be improved with a dose of oxytocin—a brain chemical often called the ‘love hormone’ because of its role in trust, friendship and bonding. It has long been established as playing a significant role in childbirth and maternal bonding. One’s ability to read emotional cues in someone’s eyes boosts along with oxytocin levels. This was proved by the research conducted by Gregor Domes. He tested 30 males’ mind-reading ability – how well they could infer the mental state of another person – after either a dose of oxytocin or a placebo. Mind-reading was tested using the Reading the Mind in the Eyes Test, where subjects looked at 36 pictures of a person’s eyes and tried to guess what emotion the eyes reflected. All subjects came in twice, a week apart. Half the subjects took oxytocin the first week and placebo a week later, and the other half began with placebo. Dosing was double-blind. Domes found that subjects correctly identified the mood conveyed in the eyes more often after taking a dose of oxytocin as compared with placebo, regardless of which they took first.

The findings also hinted at the significance of testosterone exposure in the womb. In men and women, the relative length of the index and fourth finger is different - in men, the index finger tends to be shorter than the ring finger, while in women, it is more likely that the fingers are similarly long, or the index finger longer. These differences are thought to be generated by differing levels of testosterone exposure before birth. However, the women who did worst at the “mind-reading” test after a dose of the male sex hormone were those whose finger lengths were the most “man-like” in the first place. Despite these findings contribute to our knowledge of how small hormonal differences can have far reaching effects on the mind, these findings needed to be treated with caution.

In summary, emotions are an unavoidable part of human life, making sense of our feelings. Therefore, emotions should not be eliminated. Even negative emotions when handle constructively can benefit one’s life. Our emotions are perhaps the greatest potential source of uniting all members of the human species. Clearly, our various religious, cultural and political beliefs have not united us. In fact, they have tragically and even fatally divided us. Emotions, on the other hand, are universal. The emotions of empathy, compassion, cooperation, and forgiveness, for instance, all have the potential to unite us as a species. It seems fair to say that, generally speaking: *Beliefs divide us. Emotions unite us.*

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Being Medical Detective- The Challenges and Prospects, Myths and Realities

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“It is an old maxim of mine that when you have excluded the impossible, whatever remains, however improbable, must be truth”.

Quote from **Sherlock Holmes** from “The Adventure of the Beryl Coronet” by Sir Arthur Conan Doyle (1892).

Bizarre are the minds of human beings. As the society is progressing the crimes also do. We have recently witnessed cases like Arushi Talwar, Sunanda Pushkar and Sheena Bora which have made headlines owing to the nature and complicity of crime. To live in a civilised and peaceful society; all type of crimes needs be curtailed. Law enforcing agencies has a distinctive role to play in this whole gamut. When we talk about investigating crimes involving human body, role of forensics (doctor as well as scientists) comes into forefront. The doctor here is also supposed to act as a medical detective in addition to saving the life of injured. Ironically our basic police investigation system runs in an unscientific manner which adversely affects the outcome of the case. With extreme intervention of media (both print and visual) in day-to-day life so many cases become controversial. Nonetheless it has further increased the importance of having quality scientific interventions for better outcome of justice delivery system.

What is shown on dramatized series of Crime scene investigation over television in fact is far away from the reality? There is a dire need to understand these limitations too. However for improving the system more and more scientific innovations are needed to crack the crime, solve the mystery and ultimately punish the guilty. Few relevant quotes are being reiterated here as:

“The corpse is a silent witness who never lies.”- Anonymous.

“Dead body is extremely eloquent and honestly informative, if one exercises patience in listening to it”.

“Let evidence reveal the truth”.

“Truth is more thrilling than imagination”.

The expertise is needed to pick up, those small clues and afterwards meticulous logical and scientific interpretation. Application of medical knowledge for the purpose of legal investigation and administration of justice is called forensic medicine.

Forensic science is a complementary branch which deals with various laboratory analytical part. A person can be absolutely identified on the basis of his fingerprints. In fact discovery of fingerprints is the most important contribution to field of forensics from India in the last century. DNA fingerprinting is the latest scientific technique in this era which has drastically improved the scientific investigation pattern. Forensic anthropology, Forensic odontology, Forensic psychiatry, Forensic psychology, Forensic nursing are associated upcoming branches from medical sciences. Ballistics is the branch which deals with firearms and ammunition investigation. Forensic toxicology, biology, serology, biotechnology, chemistry, speaker identification and forensic engineering are ancillary branches from stream of science which help in solving the crime during various stages of investigation.

There is great dearth of specialists in these upcoming branches of science in India. Simultaneously there is massive scope of research in these areas. The field of forensics is full of thrills and challenges and definitely has a great future. No doubt the task is much challenging when we analyse whole system of investigation whether police, legal, medicolegal or judiciary. Mostly forensic personnel whether doctor or scientist work in tandem with police and act as prosecution witness nonetheless he has to act in an impartial manner and not influenced by it as ‘Broudel’ said in 18th century.

“If the law has made you a witness, remain a man of science.

You have no victim to avenge, no guilty or innocent person to ruin or save.

You must bear the testimony within limits of science”.

Analogous with focal theme, the talk will delve deeper into various aspects of forensic sciences covering diverse streams of medical sciences thereby help in sustainable development of society.



1. Agriculture, Forestry and Horticulture

ISCA-ISC-2015-1AFH-01-Oral

Weeds can Work as Bio-Herbicides in Wheat Crop, a new Approach of eco-Friendly Weed Management

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Abstract: Application of herbicides for weed management in different crop causes many setback i.e. spoil the environment, injure the human health, ground water etc. Allelopathy is an emerging field gaining popularity worldwide. Allelopathy is atmosphere friendly techniques of weed control. To depress chemical weed control, field experiment were conducted at new development farm, The University of Agriculture Peshawar during 2009-10. Ethanol or trichloromethane plant extracts of Ammi visnaga and Convolvulus arvensis were applied to field experiment at the rate of 1000 and 500 ppm, when wheat crop at 4-5 leaf stage. Trichloromethane extract of Convolvulus arvensis at 1000 ppm and Ammi visnaga weed at 500 ppm significantly condensed the wild inhabitants up to 33.67 weeds m⁻² each than 101 m⁻² in natural control but also improved grain yield of wheat crop. The Trichloromethane extract of Convolvulus arvensis applied at 500 ppm gave highest wheat yield (1.2 tons ha⁻¹), while Ammi visnaga weed extract in the same solvent and applied at 1000 ppm gave wheat yield of 1.1 tons ha⁻¹. These bio herbicide are environmental friendly, decrease air pollution (show no toxicity in wheat crop if recommended dose are little highly applied) and non hazard to micro organism. So series of experiment s must be conducted to confirm these results.

Keywords: Weeds, Work, Bio-Herbicides, Wheat Crop, Approach, eco-Friendly, Weed Management.

ISCA-ISC-2015-1AFH-02-Oral

Quality assessment of white sandal (*Santalum album* L.) from Bankura district in West Bengal, India

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Abstract: White sandal (*Santalum album* L.) is a precious timber plant which has been serving the world's population since human civilization. Though it is used by each and every religious in the world in immense ways but could not draw adequate attention for its modern agro-technique in all the countries in the globe. Indeed, it belongs to the sustainable farming system, but no doubt the ultimate return of its produce proves unparallel to any other timber plant. The valuation depends on the quality of oil contents of the sandalwood. Normally, heartwood formation starts after 12-15 years of plant age. It is also dependable upon the soil characteristics and other climatic factors. The quality of seedlings cannot be ignored. The seed propagated and sucker propagated seedlings or plantlets are the most suitable than that of *in-vitro* propagated propagules or plantlets produced by means of vegetative propagation for adaptation in any soil type. In that case care should be taken so that no excess water can retain in the garden during rainy season. Some other factors viz. host plant association, mycorrhizal association etc. can play important role for the survivability of the sandalwood plants. Keeping all these views in mind, a venture was undertaken to quantify the produce and to assess the oil quality of the heart wood. The role of host plant association in different gardens of the forest division and oil contents (á- and â - santalol) was measured. The aims and objects of the study were to observe the influence of edaphic factors of the locations in favour of the growth and development of *Santalum album* L. having various host plant association and to analyze the oil parameters of the sandalwood produced in this area.

Keywords: Precious, immense ways, heartwood, association, quantify, quality, oil parameters.

ISCA-ISC-2015-1AFH-03-Oral

Growing Sandalwood with numerous Host plants Association: A Case Study

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Abstract: White sandal (*Santalum album* L.) grows well in the districts of Bankura, Burdwan, Purulia and Midnapore



(W) in West Bengal. As the plant is precious timber for its numerous chemical nature, it is being stolen by mischief people. The marginal farmers cannot take venture for mass cultivation of this plant due to reasons like pilferage, sustainable farming system, selection of proper host plant, proper agro-technology etc. Today, however, sandalwood is making a major comeback through investment farms, share farms and commercial production. Indian Sandalwood (*Santalum album* L.) traditionally is the most sought after of all the sandalwood species because of its high oil content. The oil is also used as a base for high value perfumes and in medicine. Sandalwood has high religious significance in Hindu culture and heritage. Sandalwood is now becoming a rare timber. Short supply has been created through the non-sustainable logging of natural occurring timber through its native areas - Asia and Oceania to the point where Australia now exports plants to India. The prized properties of the sandalwood tree are concentrated in the heart-wood. Heartwood can be defined as "the inner most and oldest wood, no longer functional for water transport and food storage, often characterized by coloured deposits of resin, phenol and other compounds which are frequently associated with enhanced durability." The idea of selectively breeding to increase heartwood production has been used in India on *Santalum album* for decades and is now being used on the Australian species. There is another problem for seed germination. Of course, there are so many ways to obtain successful germination rate using various plant hormone chemicals but germination of seed can be enhanced if the seed sows at the periphery of the suitable host plant about 30 cm nearby. A lot of host plants have been selected which have direct positive role for seed germination. As the wealth and disposable income of Asia can indicate the opportunity for sandalwood export why it is being delayed to take up the venture from this continent! The main aims and objects of this experiment are to select most suitable host plant's association of the *Santalum album* for its proper adaptation, growth and development.

Keywords: Precious, significance, phenol, opportunity, host plant association.

ISCA-ISC-2015-1AFH-04-Oral

Studies on Seasonal Effect of the Crop Health and Their Simple Correlation Matrix of the Genotypes of *Psophocarpus tetragonolobus* L. DC.

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Abstract: Winged bean (*Psophocarpus tetragonolobus* L. DC.) it is seasonal crop in tropical Plains, some species can be grown round the year. For locational trial experimentation 10 genotypes were procured from the National Bureau of Plant Genetic Resources of New Delhi in the year 2010. It cannot adapt in heavy summer months in the field. It can be grown into deficient soil because of its ability to nodule formation (NBPGR, 1984). Keeping all these views in mind, the plants were grown before rainy season and allowed them to survive during the rainy months in the field condition. Various metrical characters viz. (i) plant height (cm), (ii) branches per plant (no.), (iii) days to initiation of flower bud (d), (iv) appearance of first green pod (d), (v) fruits per plant (at 50% flowering stage) (no.), (vi) pod per plant (pre-harvesting period) (no.), (vii) weight of 100 grains (g), (viii) seed weight per plant (g) and (ix) yield per plant were observed from the seed grown plant population. But in case of the natural regeneration from rhizomes, the metrical characters were possible to record which are (i) plant height (cm), (ii) branch per plant (no.), (iii) leaves per plant (no.), (iv) leaves length (cm) and (v) leaf breadth (cm). Other yield components are yet to be recorded because the plant population is in standing condition which will produce flowers and fruits after prevailing the critical day length period. However, we are now in a position to make a comparative statement of the basic metrical traits having complete metrical data from 6th population grown by seed and also natural regeneration from rhizomes. These data are recorded properly for further computations. Plucking of pod was done 6-7 times according to the productivity of each genotype. The crop population was withered away after 6/7 plucking of pods of each genotype. Analysis of variances like components of variances, genotypic coefficient of variation, phenotypic coefficient of variation, the heritability of each genotype were calculated following the model of Singh and Chaudhury (1995). A simple correlation of regression analysis was also exhibited in this context following Panse and Sukhatme (1995).

The aims and objects of this experimentation were to study the productivity, adaptability and natural regeneration through rhizomes of each genotype.

Keywords: A-line and R-line, adaptability, locational trial, genotypic and phenotypic characteristics.



ISCA-ISC-2015-1AFH-06-Oral

Membrane lipid stability in Wheat: Its relation to other Morpho-physiological traits under Heat stress conditions

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Abstract: Continual heat stress affects approximately 7 million ha of wheat in developing countries, while terminal heat stress is a problem in 40% of temperate environments, which cover 36 million ha and over 50 countries importing more than 20 million tons of wheat per year experience heat stress throughout the wheat cycle. High temperature stress is one of the important production constraints of wheat especially during grain-fill period in Northern India. Heat induced damage of plasma membrane was assayed by membrane thermo-stability (MTS), which measure electrolyte leakage from leaf tissues after exposure to high temperature in wheat genotypes. Cell membrane stability test was conducted at anthesis stage of plant growth when ambient temperature was sufficiently high enough for hardening to high temperatures stress. Analysis of variance indicated that the genotypes had considerable difference for all the traits indicating high scope of variation for selection of this trait for improvement. The varieties WH 1124 indicated a good combination of grain yield potential and resistance potential to heat stress, while WH 730 showed a desirable correlation of CMS and other physiological traits. Correlations between various traits indicated that heat response index was the effective parameter of heat stress tolerance as this trait was linked to majority of the other traits having relevance under heat stress. Trait followed by TTC because the genotype having high HRI also had high grain yield and better in mitochondrial viability and membrane stability under heat stress.

Keywords: Membrane, lipid, stability, relation, morpho-physiological traits, heat stress conditions.

ISCA-ISC-2015-1AFH-07-Oral

Role of Cow urine in Beekeeping and Crop Protection in Uttarakhand, India

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Abstract: Indiscriminate use of chemicals led to problems like pest outbreak, resistance to insecticides, elimination of natural enemies, risk to human health besides causing environmental pollution. Considering the economic importance of the pests and to reduce the poisonous effects of pesticides to pollinators and natural enemies, studies were carried out on the efficacy of cow urine for management of honey bee diseases, insect pests and plant diseases as an alternative to synthetic pesticides. A rapid recovery was observed in disease incidence and mite infestation in honey bee colonies of *Apis mellifera* during the experiments conducted at different locations of Uttarakhand, India. This novel approach of spraying cow urine for honey bee disease management has adopted by several beekeepers of Uttarakhand. Similarly, cow urine was also found very promising against mustard aphid, *Lipaphis erysimi* and wheat aphids, *Microsiphum miscanthi* and *Rhopalosiphum padi* and showed higher attractancy of natural enemies and pollinators (in mustard crop) with increase in grain yield. On the other hand, a miraculous effect of cow urine was observed *in vitro* conditions against stem rot of mustard caused by *Sclerotinia sclerotiorum* with cent- per cent inhibition in mycelial growth. Cow urine was also found effective against disease incidence of white rust and alternaria blight in mustard under field conditions.

Keywords: Aphid, *Apis mellifera*, Cow urine, Honey bee, *Sclerotinia*, Uttarakhand

ISCA-ISC-2015-1AFH-11-Oral

A Comparison of Bayesian and Frequentist Approaches of Analysis of Balanced and Unbalanced Multi-Environmental Trial Data

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Abstract: Multi-environmental trials (METs) are essential for effective breeding lines selection and cultivar recommendation. Genotype-by-environment interaction (GEI) is widely used in crop variety trials for desirable genotypes and stable yield. This paper outlines Bayesian approach to estimate variance components, heritability and genetic advance in comparing with traditional approach. Our methodology is based on a real dataset on sorghum (*sorghum bicolor*) trials



for balanced factors and simulated data for unbalanced factors involved in data generation, for covering broad application scenarios to diverse and representative the similarities and differences. In this study, half-normal, uniform and half-t priors distribution were used. The three priors' sets provide Bayesian posterior information on genetic variability and predicted means with their statistical features. Half-normal prior distribution was found the best for the balanced dataset, while uniform prior distribution for the unbalanced dataset. Bayesian approach gave higher accuracy compared to frequentist approach and with more diverse statistical information. For the real data applications on crop variety trials, the WinBUGS codes are available for Bayesian analysis to similar situations to ensure accurate results and easy implementation.

Keywords: Bayesian approach, sorghum, variance components, heritability, genetic gain, unbalanced data.

ISCA-ISC-2015-1AFH-12-Oral

Issues of Equity, Poverty and Sustainability in Community Forestry of Nepal

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Abstract: This paper tries to explain the prevailing situation of equity and poverty alleviation aspects of community forestry and its sustainability. Despite the efforts of the Government and other agencies equity in community forestry is not fully achieved. Still there is contradiction between scholars about whether this program is equitable or not. It is believed that inequity in community forestry is gradually decreasing. Two schools of thoughts have been emerging with regards to community forestry and poverty alleviation. Some have mentioned that poor are deprived of getting benefit from community forestry as it has limited the access to the poor because the decision-making forums are mostly dominated by elites and others argue that it has been playing positive role on poverty alleviation. Sustainability of the program itself is in question in Nepal. Social exclusion and inequity, unscientific forest management and low level of awareness of users about forest conservation are becoming the major challenges for the sustainability of this program. So for the sustainability of the program equity and positive role of it on poverty alleviation is the most.

Keywords: Benefit, community forest, equity, sustainability, Nepal.

ISCA-ISC-2015-1AFH-14-Oral

Response of Muskmelon germplasm against *Meloidogyne incognita* and its Management through *Aspergillus* spp

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Abstract: Present investigation was planned to access the damage potential of *Meloidogyne incognita* to muskmelon. Screening of different muskmelon germplasm was done against *M. incognita*, both plant growth and nematode reproduction parameters were observed. Among different germplasm White candy was resistant, YIN YU-2 was moderately resistant, YIN YU-3 AND Visa-F1 moderately susceptible while Tarifa was susceptible to *M. incognita*. Potential of *Aspergillus* spp. (*A. niger*, *A. flavus*) was checked against *M. incognita* both *in vitro* and *in vivo* conditions. From *Aspergillus* spp., *A. niger* at 1×10^7 concentration was most effective in juveniles mortality and hatching inhibition under *in vitro* conditions. Under green house conditions, effect of alone and combined application of *A. niger* and *A. flavus* at 1×10^7 concentration was evaluated on plant growth and nematode reproductive parameters. In combined application increase in shoot length, shoot weight, root length whereas reduction in nematode reproduction was observed. Results revealed that combined application of *A. niger* and *A. flavus* have more potential in controlling nematode population and helpful for sustainable crop protection.

Keywords: Muskmelon, *M. incognita*, *Aspergillus*

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ISCA-ISC-2015-1AFH-15-Oral

Altitudinal variation of the bitter principle of *Swertia chirayita* and its Standardization

(A case study of Tamu Forest and Milkhe forest in Western Himalayas at Bhujung U.C.O of Annapurna Conservation Area, Nepal)

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Abstract: There is an increasing awareness and general acceptability of the use of herbal drugs in today's medical practice. Medicinal plants and their products provide an effective source of treatment for various health ailments. Through the questionnaire survey and field inventory the dominance and abundance of species in the study area is investigated. *Swertia chirayita* is founded to be most dominant and abundant species in that region while *Morchella esculenta* and *Taxus baccata* is the least one. *Swertia chirayita* is obtained at an altitude of (1750-3250m) and three strata are distinguished on the basis of altitude. *Swertia chirayita* is founded as the widely used plants for household purpose and most demanded species by the drug industry. For their appropriate utilization correct identification, authentication and quality control standardization of plant based drugs are essential, so as to ensure safety, efficacy and reproducibility in their therapeutic effect. Therefore, for the present study of *Swertia chirayita* a well-known herbal drug has been selected for its bitter principle with respect to altitudinal range and for its phytochemical standardization using pharmacopoeia guidelines. The bitterness values at strata 1 (1750-2250), Strata 2 (2251 – 2750) and Strata 3 (2751 – 3250) is 1.33 %, 1.43% and 1.52% which shows slightly increasing trend. The average bitterness principle of the plant samples is $1.42 \pm 0.06\%$. The parameters studied for standardization are the ash values; total ash $5.05 \pm 0.08\%$, acid insoluble ash $0.72 \pm 0.06\%$, and water soluble ash $0.84 \pm 0.05\%$ and also extract values; Methanol extracts $16.06 \pm 0.41\%$ and water extract is $17.11 \pm 2.33\%$. Besides this thin layer chromatography of successive extract of powder drug had also been done and the presence of bitter compounds is conformed. Overall this research shows the availability, distribution, quality and purity of *chirayita* drugs in that region. As many parameters in this study provide one of the first data in standardization of *Chirayita* specifically in western Himalayas of Nepal. This study will help in setting down pharmacopoeial standards for future reference in determining the quality and purity of *Swertia chirayita* Linn.

Keywords: *Swertia chirayita* Linn. Strata, Standardization, Thin layer chromatography.

ISCA-ISC-2015-1AFH-16-Oral

Comparative Efficacy of four Anaesthetic agents in the Grass Carp, *Ctenopharyngodon Idella* Fry for Handling and Transportation

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Abstract: Use of anaesthetic is well established within the aquaculture sector for fish during handling, transport, confinement, vaccination, grading. Several concentrations of MS-222, AQUI-S[®], benzoak[®] vet and of clove oil were tested on the grass carp fry ($0.72 \pm 0.22g$, $4.4 \pm 0.51cm$). Behavioural observations revealed that the lowest concentration that induced surgical anaesthesia in d"3min and recovery in d"5min was $125 mg L^{-1}$ of MS-222, $50 mg L^{-1}$ of AQUI-S[®], $75 mg L^{-1}$ of benzoak[®] vet and $50 \mu l L^{-1}$ of clove oil for the grass cap fry. Behavioural observations demonstrated that the effective sedative doses for the transportation purpose were 20 and 25 $mg L^{-1}$ of MS-222, 7.5 $mg L^{-1}$ of AQUI-S[®], 15 $mg L^{-1}$ benzoak[®] vet, 7.5 and 10 $\mu l L^{-1}$ of clove oil for grass carp fry. The anaesthetics MS-222, benzoak[®] vet, AQUI-S[®] and clove oil were found to suitable in aquaculture purposes for handling and transportation on grass carp fry. However, the economic, availability and authorization to use should be considered as it differ by country. Commercial use of clove oil in the transportation of carp fish seed is feasible in Nepal as it is economic, effective, safe and eco-friendly anaesthetics. The present investigation introduced a new safe technique for the handling and transportation of carp fish seed. The fish growing farmers and fish seed traders of aquaculture industry will be benefitted from these improved techniques.

Keywords: MS-222, AQUI-S[®], benzoak[®] vet, clove oil.



ISCA-ISC-2015-1AFH-18-Oral

Drivers of wildfire in Sal-dominated Tropical forests in Nepal

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Abstract: Wildfire occurrence and its intensity are phenomena, driven by a multitude of factors at different spatial and temporal scales. In the context of increased occurrence and intensity of wildfires in Nepal over the last few decades, it has become essential to understand the drivers of such fires for effective and sustainable forest management. This study investigated the variables that are spatially related to the fire occurrence pattern and mapped the spatial distribution of fire occurrence density of the forest fire in Nawalparasi district of Nepal. The MODIS active fire data were used as fire locations during the period of 15 years (2000-2014) and analyzed. The spatial point pattern analysis was used to quantify the spatial pattern of wildfire occurrences. Results show that the spatial pattern of the forest fire in the study area is closely correlated with the climatic, anthropogenic, fuel load and topographic main variables. The fire occurrence density is found to be as 0.048 fires per km² per year. The spatial distributions of the overall fire occurrence density were strongly clustered along linear components of human infrastructure. Our results demonstrated that the predicted change in overall fire occurrence density is positively related to the degree of temperature and precipitation change. The Lower Tropical Sal and Mixed Broad Leaved Forest and Siwalik physiographic zones were highly vulnerable. Understanding of these wildfire drivers and its influence in the spatial and temporal patterns of wildfire occurrence has implications for wildfire management, wildfire suppression strategies and ecological goals.

Keywords: Wildfires, occurrence, MODIS, spatial, temporal, spatial point pattern analysis.

ISCA-ISC-2015-1AFH-19-Oral

Stomata Length and Density as an indicator of Ploidy level in sweet Pepper (*Capsicum annuum* L.)

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Abstract: Ploidy level determination in plant is normally done by either chromosome number count in the cell or flow cytometry analysis methods which are tedious and complicated. Hence, the suitability of the stomatal length and density as a criterion in the distinction between haploid (2n=12) and diploid (2n=24) plants of Sweet Pepper (*Capsicum annuum* L.) was tested in anther culture derived plants from seven cultivars; Derby, Special, Bossanova, Boggie and Minipaprikawith 170 plants. Plants were grown in screen house and at least ten fully developed leaves from a plant were measured for its length, width and stomata impression were prepared. Stomata number and length were recorded in 1000x microscope. Result showed that mean stomata length and number were 26.4±2.4µm and 7.4±1.80µm in haploid 35.2±2.5µm and 5.8±0.8µm in diploid that was 33.3 percent (%) and -30% higher in diploid as compared to haploid. Likewise, mean leaf length and width in haploid was 7.2±1.2 cm and 3.98±0.97 cm and in diploid 9.66±1.7 cm and 6.3±1.0cm that was 34.2% and 65.8% respectively higher in diploid as compared to haploid. Hence, haploid and diploid were significantly different in these parameter and measurement of stomata length is a rapid technique for identifying ploidy level in Sweet pepper.

Keywords: Cultivar, diploid, haploid, ploidy level, standard deviation, stomatal length, sweet pepper.

ISCA-ISC-2015-1AFH-20-Oral

Dissipation of four different Insecticides in/on Chickpea (*Cicerarietinum* L.)

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Abstract: Chickpea (*Cicerarietinum* L.) is commonly known as Bengal gram; locally 'Chana' and belongs to the family *leguminosae*. It is the third most important pulse crop of India in terms of both area and production. India has the largest share in world's chickpea area (9.21 mha) and production (8.22 mt) respectively. In Haryana 2013, total area under gram cultivation was 47000 ha, total production was 53000 tonnes and average productive was 1128 kg/ha. Chickpea is an important source of carbohydrates (60 to 65%), protein (31%) and fiber. Nearly sixty insect pest species feed on chickpea



worldwide. *Helicoverpa armigera* is the most serious pest of chickpea and other crop plants all over the world. Worldwide, losses caused by *Helicoverpa* spp. in crops including cotton, legumes, vegetables and cereal exceeds \$2 billion and cost of insecticides used to control these pests is over \$1 billion. The experiment was carried out during chickpea harvesting period 2014 on the Research Farm of CCS Haryana Agricultural University, Hisar. Under this experiment, four insecticides of different groups viz., deltamethrin 1.8 EC@537 ml/ha, quinalphos 25 EC@1500 ml/ha, novaluron 10 EC@375 ml/ha and thiodicarb 75WP@200 G/ha, were sprayed three times at 15 days interval respectively, for the management of *H. armigera*, *Spodoptera exigua*, *Autographanigrisigna* and *Aphis craccivora*, respectively. First spray of insecticides was decided by observing the economic threshold level (ETL) of *H. armigera* on chickpea. Samples were collected at the time of harvest for residue analysis in/on chickpea seeds. Representative 25 gram of coarse chickpea sample was extracted with 75 ml of acetonitrile by shaking on mechanical shaker for 1.5 hours. Extract was subjected to filter through cotton plug. Added 12 gram sodium chloride to the filtrate and shook the flask for 2 to 3 minutes, until it separated into 2 layers. Collected the organic phase and concentrated upto 5 ml on rotary vacuum evaporator. Clean-up was performed by column chromatography using florisil, anhydrous sodium sulphate and eluate the column with hexane: acetone (9:1 v/v). concentrated the eluate on rotary vacuum evaporator followed by gas manifold evaporated to near dryness and made final volume to 2 ml. analysis was performed on gas chromatograph (GC-ECD) system equipped with capillary column. Harvest time residue in chickpea was found to be 0.011, 0.146, 1.168 and 0.297 mg/kg for deltamethrin, quinalphos, thiodicarb and novaluron, respectively. The results showed that deltamethrin had least persistence with highest dissipation whereas thiodicarb had highest persistence but least dissipation in/on chickpea among the applied four insecticides.

Keywords: Chickpea, deltamethrin, dissipation, novaluron, thiodicarb and quinalphos

ISCA-ISC-2015-1AFH-23-Oral

Bi-Variate correlation studies of Mesta (*Hibiscus Subdariffa* L.) in Seasonal Variation

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Abstract: Pollution is the most significant problem in this modern scientific era. In the context of agricultural domain the utilization of eco friendly fibre, fibre yielding crops has replaced the present need of human livelihood. Mesta (*Hibiscus subdariffa* Linn.) is known as the most important fibre yielding crop next to jute. Keeping all these views in mind and to solve the burning problem of the hour we have under taken a research programme on high yielding national recommended best ten cultivars of mesta viz. (i) RIN-003, (ii) RIN-301, (iii) RIN -322, (iv) RIN-92, (v) RIJ - 19, (vi) RIJ - 69, (vii) RIJ – 82, (viii) REX -55, (ix) REX – 57 and (x) REX – 49 in our location. Seeds were collected from Central Research Institute for Jute and Allied Fibres (CRIJAF), Saheb Kuthi, Nilgunje, Barrackpore, Kolkata in the month of March, 2011 for the programme. The seeds were grown in the research field of the Crop Research Farm (CRF), Department of Botany of this University following Randomized Block Design (RBD) in 4 replications in the month of March 2011 and there after May 2012. Uniform agronomical measures were provided for uniform growth and development of the crop. Observing morphological peculiarities, various metrical characters were observe and recorded all the data for further calculation out of all only 5 metrical characters viz, Plant height, Branch plant⁻¹ (no), Leaves plant⁻¹ (no), Basal girth (cm) and Leaf area (cm) were considered for the correlation study following Panse and Sukhatme model. Considering bi-variate data Plant height vs branch/Plant⁻¹, Plant height vs Leaf Plant⁻¹, Plant height vs basal girth and Plant height vs Leaf area (cm) were calculated for exhibiting qualitative and quantitative aspect for this context. The aims and objects of this study were to explore the correlation of phenotypic characters and to study the comparison of genotypic potentiality in this Location.

Keyword: Eco friendly, next to jute, location, correlation study, genotypic potentiality.

ISCA-ISC-2015-1AFH-24-Oral

Study on the Effect of Different Pre-Treatment on Reduction of Oxalic Acid on Spinach Powder

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Abstract: This research focus to see the effect of different pre-treatment on reduction of oxalic acid content of Spinach



(*Spinacia oleracea*) having the oxalate content as 0.937% on dry basis. Spinach was first dried at temperature of 60°C, 70°C and 80°C which showed no significant difference ($p>0.05$) in terms of oxalic acid concentration; so 60°C was taken. Dried samples were rehydrated for 2 hours before processing. Different treatments such as hot water blanching (1 min, 2 min and 5 min) which reduce the oxalate content by 0.63%, 4.69% and 14.72%, NaCl treatment (1%, 2% and 5%) which reduce the oxalate content by 10.45%, 15.68%, and 23.79% and EDTA blanching (0.1, 0.2, 0.5, 1, 2 and 3) mMol which reduces the oxalate content by 37.03%, 38.42%, 48.55%, 61.04%, 66.94%, 66.92% respectively. EDTA blanching at 2mMol concentration that results in highest oxalic acid reduction up to 66.94% and was significantly superior ($p<0.05$); was subjected to chemical analysis. Three samples of spinach soup i.e. raw spinach, dried spinach powder and EDTA blanched spinach powder were taken for sensory evaluation; raw spinach soup was found to be statistically superior ($p<0.05$) in terms of color but showed no significant difference ($p>0.05$) with EDTA blanched spinach powder soup.

Keywords: Spinach powder, oxalic acid, EDTA and oxalate.

ISCA-ISC-2015-1AFH-01-Poster

Biochemical components of Winged Bean [*Psophocarpus tetragonolobus* L. DC.]

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Abstract: Biochemical components in winged bean (*Psophocarpus tetragonolobus* L. DC.) is unparallel in compare to other leguminaceous crops. Different plant parts of ten accessions of winged bean were analysed in the laboratory to measure biochemical components as much as it was possible. Different standard methods were followed for the analysis of each biochemical experiment. All these biochemical results have been exhibited in this context. The aims and objects of this experimentation were to measure the biochemical components present in different parts of winged bean.

Keywords: Biochemical components, standard methods.

ISCA-ISC-2015-1AFH-03-Poster

Impact of Growth Substance Brassinolide on Physiological, Biochemical and Yield of Rice (*Oryza sativa* L.) Genotypes

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Abstract: The present investigation was carried out at the Instructional Farm, Department of Plant Physiology IGKV, Raipur (C.G.) during *kharif* season. The experiment was laid out in *Factorial* Randomized Block Design in two replication with twelve early, mid and late duration genotypes namely R-1037-649-1-1, Danteshwari, R-979-1528-2-1, Vasumati, Indira SugandhitDhan, R-1182-167-2-157-1, R-548-89-6, R-1072-360-1, Safri-17, Dubraj, R-1249-1196-2-1 and R-1060-1674-1-1 respectively. It was done with explicit to find out the impact of foliar application of brassinolide on physiological, biochemical and yield potential of these genotypes at two levels i.e. T₁- Control and T₂-Brassinolide. The effect of brassinolide was studied at panicle initiation (PI), flowering, grain filling and maturity stage of crop. The results revealed that early, mid and late duration genotypes Vasumati, R-1072-360-1 and Safri-17 exhibited maximum flag leaf area at flowering stage. The genotypes Vasumati, R-1072-360-1, Indira SugandhitDhan, R-1249-1196-2-1 and Safri-17 recorded maximum leaf area index at all the growth stages. The biochemical parameter for carbohydrate content was recorded maximum in R-979-1528-2-1, Indira SugandhitDhan and Safri-17 whereas chlorophyll content was not differed significantly varied in all genotypes and treatments. In yield attributing characters genotypes Danteshwari, R-1182-167-2-157-1 and R-1249-1196-2-1 produced higher grain yield. In light of the results obtained, it can be conclude Brassinolide emerged as magic chemicals that could agricultural production at an unprecedented rate by increasing a rate of growth and development which helped in removing or circumventing many of the barriers imposed by genetics and the environment on rice genotypes.

Keywords: Brassinolide, plant growth regulator, growth analysis, rice genotypes, yield.

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ISCA-ISC-2015-1AFH-04-Poster

Impact of Pre-Anthesis Stem Reserve Mobilization in Rainfed Rice Genotypes, Tolerant and Susceptible to Drought Stress

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Abstract: An experiment was carried out at the Research cum Instructional Farm, IGKV, Raipur (C.G.) during *kharif* season. The impact of source limitation on assimilate partitioning and yield attributes to optimize the production potential and physiological basis of higher yield contributing traits in the ten genotypes. Flag leaf area was maximum in Dagad Desi, PSBRC-9, Poornima x Azucina. The highest reduction in flag leaf area was recorded in MTU 1010 and Ananda. The stability in flag leaf area contribute to photosynthetic efficiency and consequently resulting more stable yield under irrigated condition. Grain yield was found higher in Dagad Desi and Mahamaya under both the (irrigated and rainfed) condition, respectively. It was mainly due to the proline association with the morphological and phenological parameters as well as physiological behaviour, which ultimately raised growth rate. It can be suggested that the leaves (source) could determine the degree of plant performance and control the level of filled grain in rice. It is very interesting to conclude the reduction in leaf area of mother tillers indicated the importance of upper positional leaves to raise the present yield ceiling.

Keywords: Source-sink, defoliation, assimilate partitioning, source limitation, drought.

ISCA-ISC-2015-1AFH-06-Poster

Improved soil Nitrogen and yield by establishment of *Bradyrhizobium* for Soybean by Inoculation of a preceding Wheat crop

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Abstract: Objective of this study was to determine inoculating effect to spring wheat (*Triticumaestivum*L.) and soybean (*Glycine max* L.) with *Bradyrhizobium japonicum* under wheat-soybean cropping in a Vertisol under recommended fertility levels and different inoculation practices with the hypothesis that it would lead to increase in population of *B. japonicum* in soil and improved nitrogen status in soil and yield of subsequent soybean crop. Looking to objectives field experiments were conducted on wheat (GW 366) soybean (JS 97 -52) were during rabi and kharif season 2013-14 in a Vertisol cropping using having available N 95.0, P 7.0 and K 115.0 mg kg⁻¹ soil, Department of Soil Science and Agril. Chemistry of research field under J.N. Krishi Vishwa Vidyalaya, Jabalpur. The experiment was laid out in CRB Design with following eight treatments and four replications. Experiments were conducted four replications with eight treatments i. g. T₁ UFUI (rabi) + UFUI (kharif), T₂ UFUI (rabi) + UFI (kharif), T₃ UFI (rabi) + UFUI (kharif), T₄ UFI (rabi) + UFI (kharif), T₅ RDF-UI (rabi) + RDF-UI (kharif), T₆ RDF-UI (rabi) + RDF-I (kharif), T₇ RDF-I (rabi) + RDF-UI (kharif) and T₈ RDF-I (rabi) + RDF-I (kharif). Seed inoculation was done with soybean rhizobia strain R-30 and N, P and K were applied @ wheat-120:60:40 and Soybean-20:80:20 kg ha⁻¹, as recommended dose to the fertilized plots. Maximum soil organic carbon (5.0 g kg⁻¹ soil) available and total nitrogen (128 and 433 mg kg⁻¹ soil respectively) and grain yield (2906 kg ha⁻¹) were found with RDF along with inoculation of *B. rhizobium* in wheat during rabi and soybean during kharif followed by RDF along with inoculation of soybean crop only. Minimum soil organic carbon (4.2 g kg⁻¹ soil) available and total nitrogen (72 and 392 mg kg⁻¹ soil respectively) and grain yield (1693 kg ha⁻¹). *Rhizobium* is an important symbiont for legumes which improve nodule formation in soybean and enriched nitrogen status in soil. So it is concluded that conjunctive application of RDF along with seed inoculation to wheat followed by soybean through *B. rhizobium* is more beneficial.

Keywords: *Bradyrhizobium*, grain yield, Unfertilized and uninoculated (UFUI) and soil nitrogen.

ISCA-ISC-2015-1AFH-08-Poster

Genetic Variability Study in F₂ Population of Bread Wheat (*Triticum aestivum* L. em. Thell)

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Abstract: The aim of present study was to estimate the genetic variability for grain yield and their other contributing



traits in F₂ population of the cross WH1105 x Syn27 during Rabi season 2013-14. Results show that phenotypic coefficient of variation (PCV) was higher than the genotypic coefficient of variation (GCV) for all the eleven traits. GCV was highest in grain yield (41.88) followed by biological yield (38.36) and ear weight (27.08). GCV and PCV were lowest for plant height followed by ear length. High heritability was observed for biological yield, grain yield per plant and no. of grains per ear. Highest genetic advance was recorded for plant height, no. of grains per ear and biological yield. No. of spikelets per ear and grain yield showed moderate genetic advance. Genetic advance in per cent of mean is highest in ear weight. Present investigation suggests that selection in F₂ population of WH1105 x WH711 will be effective in selecting superior plants for yield traits in evolving high yielding genotype in wheat.

Keywords: Genetic advance, heritability, phenotypic coefficient of variation and genotypic coefficient of variation.

ISCA-ISC-2015-1AFH-09-Poster

Effect of GA₃ on Seed Germination of *Delonix regia*

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Abstract: A study was carried out at the nursery of Biotechnology- cum-Tissue Culture Centre, OUAT, Bhubaneswar, India to evaluate the effect of different concentration of GA₃ (i.e. Control, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800 ppm) respectively on seed germination in *Delonix regia* was determined. Seeds treated with GA₃ at 790 ppm gives maximum germination (76.67%), mean daily germination (4.79), peak value (5.50) and germination value (24.92). Therefore it may be concluded that seeds treated with GA₃ at 790 ppm can be recommended for obtaining better seed germination of *Delonix regia*.

Keywords: *Delonix regia*, germination, peak value

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2. Animal, Veterinary and Fishery

ISCA-ISC-2015-2AVF-Guest Speaker

Canonical Discriminate Analysis – A Tool to differentiate Cattle Populations based on Biometric traits

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Abstract: Canonical discriminate analysis (CDA) is a multivariate statistical technique and used to achieve uniformity within different types and develop them into different definite breeds in terms of morphological and production characteristics. In the present study an attempt has been made to differentiate three cattle populations of Rajasthan state. A total of 735 indigenous cows of Kankrej (407), Sanchori (152) and Nari (175) were used to discriminate three cattle populations based on different 12 biometric traits using canonical discriminant analysis. Analysis of variance of showed that Sanchori cows had largerst size, Kankrej was intermediate and Nari was smallest. The stepwise discriminate analysis showed that distance between hip bones, heart girth, horn length, face width, ear length, face width, horn dia, height at withers, tail length without switch, tail length and body length were the most discriminating traits between these three cattle populations. The Mahalanobis distances between these cattle populations indicated that they are three distinct populations. The dendogram based on the average linkage method showed that there are two clusters; cluster one includes Nari and Sanchori cows and cluster two Kankrej cows those are clearly separated from cluster one. The individual assignment to different cattle populations by the cross-validation classification approach showed that 100% of the Kankrej cows, 98.08% of Sanchori cows and 98.98% of Nari cows were correctly assigned into their source populations. The present study revealed that the free canonical approach is proved useful and informative in differentiating between three cattle populations and suggested that Sanchori and Nari may be established/ registers as a distinct breed.

Keywords: Canonical discriminate, multivariate, cattle, biometric traits, breeds

ISCA-ISC-2015-2AVF-03-Oral

Fertility Rates and Sperm penetration in Female ostriches (*Struthio camelus*) after Artificial insemination by using Three Methods of Semen collection

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Abstract: This study was conducted to investigate the effect of semen collection method on fertility and hatchability rates and sperm penetration holes of ostrich. A total of 9 males and 27 females, 3 – 7 years old were randomly assigned to three treatment groups with 3 males and 9 females for each treatment group. Three semen-collecting methods were tested: manual massage method; dummy method; and teaser female method. In all collecting method fertility and hatchability rates and sperm penetration holes were assayed for three consecutive months. Results revealed that the use of teaser female or dummy methods for collecting the semen from male ostrich resulted in significant increase (pd" 0.05) with respect fertility (%), hatchability from fertilize eggs (%), hatchability from set eggs (%), and sperm penetration holes and significant decrease (pd" 0.05) concerning embryonic mortality (%) in compare with manual massage method during all three months of experiment and as regards the total mean of these five traits. Development of the animal friendly methods (teaser female and dummy methods) for collecting semen from ostriches has advanced considerably in recent years. Normal ejaculates can be collected regularly but the males need to be trained and important human-bird interaction stimulating birds to perform sexual behavior need to recognized and taken advantage of in training. Semen collected by the teaser or dummy method is of good quality and quantity and is suitable for storage and gave very good results with relation to fertility and hatchability rates and sperm penetration holes. The ostrich industry appears to be in a good position for development of the artificial insemination technology although adoption of the artificial insemination technology in ostrich breeding will mean substantial changes to the current industry structure.

Keywords: Collection method, fertility and hatchability rates, ostrich.



ISCA-ISC-2015-2AVF-04-Oral

Anthelmintic potential of Honey Bee venom and its Characterization by the Mass Spectroscopy

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Abstract: The crude bee venom was collected from Indian honey bee, *Apisindica* with the help of venom extractor. An electric shock of weak strength was applied in venom extractor. Resultantly honey bee irritated and left a drop of bee toxin on glass plate attached to venom extractor. Dropped venom scrapped out and stored at -18° C. The collected bee venom were lyophilized that gave rise powdery form of it, known as crude bee venom. The different concentration of crude bee venom was tested against parasitic helminthes of model organism *in vitro* and *in vivo*. By the experiment it is revealed that the fraction of honey bee venom has a potential and anthelmintic activity. The pharmacologically active compounds in bee venom was detected and characterized by the application of HPLC and mass spectroscopy. Usually melittin, apamine and phosphorylase A₂ have been the known chemical constituents of bee venom on which most of the studies have focused in recent years. The present investigation yielded fractions of 7KDa (heaviest molecular weight, hitherto unknown) showing potential anthelmintic characteristics are peculiar. Therefore, the anthelmintic potential of honey bee toxin for human health improvement could result from conservation of this natural product.

Keywords: Anthelmintic, *Apisindica*, Honey bee toxin, HPLC, Mass spectroscopy, natural product.

ISCA-ISC-2015-2AVF-08-Oral

Training needs assessment of Dairy farmers for Dairy entrepreneurship development in Bihar, India

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Abstract: The present study was conducted in purposively selected 400 respondents from eight administrative blocks (two from each district) of four districts viz. Patna, Vaishali, Begusarai and Katihar of Bihar state. In this investigation the training need of respondents were assessed to design the appropriate training module for dairy entrepreneurship development. Hence the training need assessment was done by taking the perception of respondents in different areas of livestock management and enterprise management. After analysis of different sub-areas it was found that about 42 percent of dairy farmer felt, training in animal breeding is most important and 40 percent perceived it as 'needed'. While analysing the training need in feeding areas, it was found that 34 percent felt it as most needed followed by 39.75 percent as needed. Further, 43 percent and 50 percent of respondents revealed the training need as needed in the areas of farm management and health care, respectively. So far, training need assessment in the area of enterprise management was concerned, it was found that about 50 percent of the respondent ranked sub-area like financial management as most important, while accounting and book keeping and project implementation also emerged as important area of training as perceived by more than 70 percent of the responded as needed to most needed. Hence different component of breeding, feeding and health care and enterprise identification as per market demand availability of resources and financial management of enterprise should be important component while formulating training in the area of dairy entrepreneurship development so that the training should be effective and purposeful and can be achieved desired competency for getting the set goal.

Keywords: Bihar, dairy farmers, entrepreneurship, training need assessment.

ISCA-ISC-2015-2AVF-09-Oral

Management of Human-Dog-Wildlife Conflict at Sauraha, Nepal

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Abstract: A study was conducted at Sauraha, Nepal in June, 2014 to provide solution to existing scenario among human, dogs and wild animals. Sauraha, a small village in buffer zone of Chitwan National Park is a popular destination for



international tourists. The increasing population of stray dogs at the place appeared to be a new challenge in government's goal to increase tiger population. The problems associated with dog bites and Rabies, Canine Distemper in National Park tigers, barking, scattering of garbage and defecations were ignored until the killing of deer by groups of dogs inside fenced National Park started to be frequent. So, the national park officials undertook the poisoning to kill all the stray dogs in March, 2014 which later became a global animal welfare issue. The human settlements also felt a high level of insecurity from wild animals in the absence of dogs. But the place was found to re-maintain approximately the original population of dogs after a couple of months. A routinely neutering and vaccination of stray dogs was suggested as an appropriate measure to maintain a desirable healthy population of dogs which would effectively address human health, animal health, environment health, wildlife conservation and animal welfare.

Keywords: Sauraha, human, stray dogs, tiger, neuter, vaccination.

ISCA-ISC-2015-2AVF-10-Oral

Wound healing activity of Methanolic extract of three Medicinal plants

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Abstract: *Hamiltonia suaveolens*, *Sphaeranthus indicus* and *Ziziphus jujuba* Mill are one of the most important traditional medicinal plants. The primary indigenous use of these plants appears to be of the leaves, flowers and root as a topical treatment for wound healing. The Methanol extract of leaves, flower and root of these plants were used to evaluate the wound-healing activity in rats, using excision and dead space wound models. Animals were randomly divided into six groups of six for each model. Test group animals in each model were treated with the Methanol extract of *H. suaveolens*, *S. indicus* and *Z. jujuba* topically in the form of ointment and the control group animals were maintained with no application. Healing was assessed by the rate of wound contraction, time until complete epithelialization, granulation tissue weight and hydroxyproline content. On day 16, the extract-treated animals exhibited 100% reduction in the wound area when compared with controls which exhibited 63%. The granulation tissue weight and hydroxyproline content in the dead space wounds were also increased significantly in *Z. jujuba* treated animals compared with controls ($P < 0.001$). Enhanced wound contraction, decreased epithelialization time and increased hydroxyproline content suggest that *S. indicus* and *Z. jujuba* root extract may have therapeutic benefits in wound healing.

Keywords: Excision and dead space wound model, Hydroxyproline, *Hamiltonia suaveolens*, *Sphaeranthus indicus* and *Ziziphus jujube*.

ISCA-ISC-2015-2AVF-13-Oral

Study on Macronutrient Contents in Freshwater Mussels, *lamellidens* spp. from Cauvery River at Harangi, Karnataka, India

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Abstract: Seasonal variations of macronutrients in freshwater mussels *Lamellidens* spp. were investigated for a period of 12 months from April 2011 to March 2012 from river Harangi tributary of Cauvery River, in the Western Ghat region of Karnataka, India. Literature survey revealed that there is no any information available about the mussels from Harangi tributary of Cauvery. Three genera *Lamellidens corrianus*, *Lamellidens generosus* and *Lamellidens jenkinsianus* were identified based on literature available and used for macronutrient analysis. Proteins, lipids and carbohydrate contents have shown variations in all the seasons. Proteins and lipids were accumulated in the mussels during the pre and post monsoon seasons and decreased during monsoon and winter season. Carbohydrate content was decreased during pre and post monsoon season, while increased during the monsoon and winter seasons.

Keywords: Cauvery River, freshwater mussels, Harangi, *Lamellidens corrianus*, *Lamellidens generosus*, *Lamellidens jenkinsianus*, macronutrients, Western Ghat.

ISCA-ISC-2015-2AVF-14-Oral

Food and feeding of *Amblypharyngodon mola* (Hamilton 1822) and *Neotropius atherinoides* (Bloch, 1974) in relation to Gill rakers and Alimentary tract

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Abstract: The *A. mola* and *N. atherinoides* are two most abundant small indigenous fish species (SIFS) from wetland ecosystem of Assam. The food and feeding habits of these SIFS were studied through analysis of their gut contents in the



year 2013-14. The diet composition showed that *A. mola* is predominantly planktivorous in food habit. The overall dietary compositions of *N. atherinoides* indicated omnivorous feeding habit having the presence of phytoplankton, zooplankton, insects and insects parts. On the other hand, the structure of alimentary tract of these SIFS respectively revealed the absence of distinct stomach in *A. mola* whereas *N. atherinoides* showed presence of well defined stomach. In depth analysis of gill rakers of both the fishes unfolded very contrasting features showing short, stumpy gill rakers with membranous fold of *A. mola* against needle like and adjacently placed gill rakers of *N. atherinoides*. The structure of gill rakers of *A. mola* inadequately support its phyto planktivory, however having a membranous fold between rakers in this fish may be an adaptive advantage for the purpose. The gill rakers of *N. atherinoides* depicted planktivory with a well defined stomach which may also be a facultative modification for habitat specific zoo planktivory.

Keywords: Alimentary tract, Gut content, Gill raker, Phytoplankton and Zooplankton and SIFS.

ISCA-ISC-2015-2AVF-15-Oral

Antibacterial activity of Methanolic extract and Semi Alkaloidal Fraction of flower of *Sphaeranthus indicus* Linn

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Abstract: Many herbal remedies have been employed in various medical systems for the treatment and management of different diseases. The weed herb *Sphaeranthus indicus* Linn has been used in different system of traditional medication for the treatment of diseases and ailments of human beings. The antibacterial potential of its flower collected from local area against ten bacterial type cultures was precisely studied with respect to methanolic extract and semi alkaloidal fraction. The preliminary screening of *in vitro* antibacterial activity was performed by agar well diffusion assay of methanolic extract and semi alkaloidal fraction, the results of which The highest zone of inhibition was measured against *K. pneumoniae* (18.60 mm), whereas, least in *E. coli* (13.83mm) at 1000µg/ml of MeOHx. *K. pneumoniae* was sensitive at the highest MIC (8 mg/ml) while lowest in *E. coli* MIC (4 mg/ml) to the SAF.

Keywords: *Sphaeranthus indicus*, antibacterial activity.

ISCA-ISC-2015-2AVF-16-Oral

Piscicidal activity of Methanolic extract of root of *Ziziphus jujuba* Mill

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Abstract: Toxicology remains the science, which promises real opportunities to unravel some of the fascinating problems of biology by identifying chemicals and physical tools with which to probe living processes. Present study is planned to evaluate piscicidal activity of successive MeOHx of the root of *Z.jujuba*. Five concentrations of the extract viz 20 mgL⁻¹, 40 mgL⁻¹, 60 mgL⁻¹, 80 mgL⁻¹ and 100 mgL⁻¹ were prepared and delivered into experimental jars. It may conclude that the successive MeOHx is lack of piscicidal activity and free from relatively aquatic vertebrate toxicity.

Keywords: Piscicidal activity, *Ziziphus jujuba* Mill, *Gambusia affini*.

ISCA-ISC-2015-2AVF-17-Oral

Changes in Respiratory Metabolism Exposed by Mercury Chloride in Freshwater Fish *Clarias Batrachus*

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Abstract: In the recent work we provide the knowledge and adverse effects of man-made activities about industrialization and excess use of chemicals in agricultural sectors in the world. Industrial effluent containing heavy metals dissolve and reach to water body, cause damage to tissue and finally death of aquatic animals. Respiratory system is one of the important system for each and every living organism. Same sized fishes *Clarias batrachus* were selected from pond for respiratory investigation. They were available in the muddy fields of water having barbules. They from their natural habitat and brought to acclimatize for two days in the laboratory conditions. The animals were subjected to lethal concentration (1.2ppm) of mercury chloride and total oxygen consumption per unit body weight was studied by Winkler's



method. In the present observation total oxygen consumption showed that gradual decreased trend up to 96 hours after exposure to mercury chloride.

Keywords: Mercury chloride, *Clarias batrachus*, oxygen consumption.

ISCA-ISC-2015-2AVF-18-Oral

Occurrence of Endemic species of reptiles from Khed Tahasil, Pune Distinct, MS, India

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Abstract: The Khed Tahasil is a part of Western Ghats, which is hot spot as per unisef. Present study carried out for record of recent status of endemic species of reptiles from Khed Tahasil from pune district of Maharashtra. Reptiles are first true vertebrates on the earth, western ghat of India is a part of ancient gondwana land. Reptile faunal comparison as per IUCN status and the investigation of species of reptiles 48 species observed or examined from which two endangered species like *Argyrogena ventromaculata*, *Trimeresurus gramineus* found only in Wada and Pait regions with unique Habitats but at high risk of extinction in the wild and restricted distribution.

Keywords: Khed Tahasil, endemic, reptiles, unique Habitats.

ISCA-ISC-2015-2AVF-19-Oral

Estimation of Pesticides from Agriculture farm are from Khed taluka, Pune, MS, India

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Abstract: Khed Taluka is a part of western ghat region which is very ecosensitive region as per recent studies. From the study area threatened ecosystem is a major issue. Various industries are established their plants also the deforestation can take place by farmers for paddy field and potato farms. From this region the major crops are rice, potato, peanut, groundnut, and jowar. For production of these major crops the various types of pesticides are used like endosulfon, DDT, BHC and parathion. We estimate the pesticides from ecosensitive regions of Khed Taluka.

Keywords: Western ghat, ecosystem, Crops, pesticides.

ISCA-ISC-2015-2AVF-20-Oral

Occurrence of Endemic blue Mormon from Khed Tahasil, Pune, Maharashtra, India

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Abstract: The Khed Tahasil is a part of Western Ghats, which is hot spot as per unisef. Present study carried out for record of recent status of endemic species blue Mormon from Khed Tahasil from pune district of Maharashtra. From study area the survey carried out during 2013-14 from different regions of the tahasil. The occurrence of endemic species of butterfly mostly blue Mormon in northern and southern parts. Mortality during monsoon and winter season from Khed Tahasil.

Keywords: Western Ghats, endemic, Blue Mormon.

ISCA-ISC-2015-2AVF-21-Oral

Distribution and abundance of *Trimeresurus gramineus* (family: viperidae) along Western Ghats region of Khed Tahasil, Pune District (MS), India

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Abstract: Tropical evergreen forests of Indian subcontinent, especially of western ghat, are known hot spots of biodiversity where many new species await to study. The distribution and abundance of pit vipers in western ghat investigated from



Khed Tahasil from pune district of India from 2007 to 2015. The *Trimeresurus gramineus* is endemic species shows typical habitat. The study area of tahasil with ever green and semi ever green forest; study was mainly conduct at and around the Bhimashankar wild life sanctuary. The data was collected on the basis of transect method.

Keywords: Western Ghats, pit vipers, endemic.

ISCA-ISC-2015-2AVF-22-Oral

Species diversity of Snakes from Bhima river Basin Northern Western Ghat of Pune District, Maharashtra, India

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Abstract: Their are various growing evidences of snake diversity of India. The western ghats of India with renowned for snakes. In Khed Tahasil the Bhima River is main source of water around it the species diversity of snake distributed. The Western Ghats Comprises a vast range of reptiles especially snakes and unexplored from conservation point of view. Earlier inventory snakes study conducted in 2013-2014. We conducted detailed field study and recorded: species-7, families-30. From investigation there is an urgent need strategies to conserve these rare and threatened snakes from bhima river Basin India.

Keywords: Western Ghats, Bhima River, snakes diversity.

ISCA-ISC-2015-2AVF-01-Poster

Demography of Panchnada area with special reference to its biodiversity

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Abstract: Panchnada area have a great scientific interest with the aspect of future reserches of Fresh water turtles in northern India. The all turtles are divided into two broad categories namely; Hard shell turtles (Emydid turtles) and Soft shell turtles (Trionychid turtles). The hard shell turtles representing 16 species have thick and hard carapace and plastron, while 6 species of soft shell turtles are covered with soft fleshy carapace and plastron. Few studies conducted on Indian fresh water turtles have mainly dealt with taxonomy and their broad distributional ranges. Biology, ecology and population dynamics of fresh water turtles are considered as one of the pressing problem to device management strategies.

Keywords: Fresh water turtle, population dynamics, hard shell turtles, soft shell turtles, Panchnada.

ISCA-ISC-2015-2AVF-02-Poster

Effect of Dipel on development of *Diacrisia oblique* (Lepidoptera: Arctiidae)

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Abstract: *Diacrisia obliqua* walker (Lepidoptera: Arctiidae) is a phytophagous insect causing great loss to different crops. To control these pest different concentrations of Dipel were administered by Leaf Dip Method and Topical Method. It was observed that Dipel reduces the percentage of pupation in larva. It prolongs the larval and pupal period. It causes a clear reduction in emergence of adult insect. It was also found that Dipel is more effective under LDM.

Keywords: *Diacrisia*, phytophagous, Dipel, Leaf Dip Method, topical method

ISCA-ISC-2015-2AVF-03-Poster

Impact of Pyrethroid on Tissue Metabolites of Freshwater Snail, *Bellamya Bengalensis*

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Abstract: Modern agricultural practices result in indiscriminate use of various agrochemicals, which usually enter into the aquatic environment. The use of agrochemicals in the field had the potential to change the aquatic medium, affecting the tolerance limit of aquatic fauna and flora, as well as creating danger to the ecosystem. Pesticides are widely used to combat agricultural pest and their application has greatly contributed to stopping up to the agricultural production. But none of these pesticides employed are specific and due to their indiscriminate and wide spread use, several non-target



organisms like snails, fishes, crabs etc. of the ecosystem are adversely affected. The prosobranch molluscs are much economic importance, as they act as an intermediate hosts for a number of trematode parasites, which causes severe diseases to man and his domestic animals. The metabolic needs are dependent on nutritional and reproductive state and some phylogenetic factors. For maximizing the power of reproduction, individuals naturally devoted its more energy to the reproduction. In the present study effect of sub lethal concentration of pyrethroid pesticide on Whole body, Ovary and Albumen gland of a freshwater prosobranch snail, *Bellamya bengalensis* was evaluated. The biochemical analysis for 1, 7 and 15 days exposed snail was made in the present work. The amount of biochemical components was greatly influenced by pyrethroid in 15 days in all tissues in post reproductive period in whole body while pre reproductive period in ovary and post reproductive in albumen gland.

Keywords: Pyrethroid, *Bellamya bengalensis*, glycogen, whole body, ovary, albumen gland.

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3. Biological Sciences

ISCA-ISC-2015-3BS-Guest Speaker

Chemical composition, Antimicrobial and Antioxidant activity of essential oil of *Tagetes erecta* L. shoot

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Abstract: The essential oil of the shoot part (without flower) of Marigold (*Tagetes erecta*) family Asteraceae from Kanpur region (Uttar Pradesh) India was analysed by GC and GC-MS. The analysis led to the identification of 6 major constituents forming 60% of the total essential oil composition. The oil was explored for their antioxidant and antimicrobial activity. The antioxidant activity in DPPH (31.2 %inhibition), B-carotene and Frap assay show very good activity against both. BHT and ascorbic acid were used as standards. In vitro antimicrobial activity of essential oil was evaluated against 5 bacterial strains pure culture of gram positive and gram negative using disc diffusion methods.

Keywords: Essential oil composition, antimicrobial activity, antioxidant activity.

ISCA-ISC-2015-3BS-01-Oral

Stomatal variation among Aquatic Pteridophytes in various Environmental conditions

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Abstract: Structure of stomata of four aquatic ferns is different due to different ecological conditions. In *Ceratopteris*, a semi-aquatic fern possess polycytic stomata and mesoperigenous in origin. Two guard cells are oriented parallel to the vein and density is more near the vein. *Marsilea* is a rooted floating and terrestrial fern. Consequently, transpiration and photosynthesis is an essential process for their survival. The stomata in the genus is observed on both the surfaces in terrestrial habitat but only a few stomata on adaxial surface is observed in floating habitat. Stomata of this fern are in level with the leaf epidermis and orientation is parallel with the veins. Three to four epidermal cells also play a vital role in opening the stomata at day time. As the distribution of stomata is associated with the habitat, origin of stomata is also different in different species. In *Marsilea quadrifolia* the stomata are distinctly smaller, polycytic and mesoperigenous. On the other hand, in *M. minuta* stomata are comparatively larger, anemocytic and perigenous. *Azolla*, a free floating aquatic fern has stomata on both the surfaces of green leaf and the ring shaped single guard cell is the product of the ontogenic dissolution of the common wall between the two original guard cells. In *Salvinia*, another free floating fern, both of the two types of leaves are totally devoid of stomata. The hairs on the adaxial surface are water repellent and different in structure in different species. However, the aerial leaves of different species are abaxially provided with a unique kind of yellow hairs, quite stiff in appearance. These hairs are associated with sub-epidermal air chambers located in the mesophyll tissue. Strikingly, these hairs exhibit a unique opening and closing mechanism. When a hair remains straight with its two parts aligned nearly in a straight line, the terminal pore of basal cell becomes firmly closed. On the contrary, when the distal part droops down the pore becomes fully open.

Keywords: Stomatal, variation, aquatic, pteridophytes, environmental, conditions.

ISCA-ISC-2015-3BS-02-Oral

Vermiculture: A Tool of Organic Farming and Employment generation

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Abstract: The role of biofertilizers has been focused in several experiments by various workers since several decades (Edwards, 1977; Lee, 1985; Renolds, 1977, Tah, 1999; Tah and Banerjee, 2006). Rural farmers are trying to produce maximum crop yield from the specific unit area by the application of different high-cost unmeasured chemical fertilizers in the field ignoring organic as well as bio-fertilizers due to their lack of sufficient knowledge. What indeed, chemical fertilizer can not perform and fulfill expected target without basic organic compound available in the soil. On the other hand, different chemical insecticides and fungicides are being applied as foliar spray to check and prevent insects and



fungal attack of the crop plants. Naturally, soil is becoming polluted and sterile day by day by the deposition of those undesired chemical fertilizers and highly poisonous heavy metallic insecticides and fungicides which are fallen at least 60% during the application onto the leaf. Farmers do not know the awful harms of these heavy metallic chemical compound by which several internal human organ may damage and thereby attack by various unknown disease even cancer after consumption of these crop product. Of course, it is a sustainable factor. Moreover, in this way of agronomic practices the mother soil becomes sterile and polluted gradually. As a result, farmers have been suffering from a deep frustration for not getting a minimum yield index to balance loss and profit. This may be offered to the farmers and the poor sectors of the people by providing them various modern suitable scientific technologies to promote their average socio-economic condition utilizing local available raw materials and human resource to a great extent for the noble task of rural farmers. The main objectives of this presentation are to provide easy and profitable technology for the vermicultural as well as bio-fertilizer development by the rural farmers to meet-up their minimum requirement to enrich the soil fertility and to achieve sufficient desired quality food production for the society.

Keywords: Vermicompost, biofertilizers, appropriate technology, sustainable factor, desired quality.

ISCA-ISC-2015-3BS-03-Oral

Artificial food for honey bees to boost commercial beekeeping in India

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Abstract: Beekeeping not only provides useful products which provide cash income to poor villagers but also play an important role in pollinating fruit and agricultural crops. Honey bee colonies have to struggle for their existence during dearth periods. The beekeeping management essentially includes the objectives of enhancing or improving upon various factors necessary for honey bee colony growth and development, all round the year, in general and during dearth period, in particular. The provision of feeding artificial diet to honey bees is well known in many foreign countries but it is not a common practice among beekeepers in India. A number of different feed substitutes have been tried with varying degrees of success by many researchers and beekeepers, looking at many factors like attractiveness to bees, palatability, nutritional value, digestibility (Chhuneja *et al.*, 1993; Sharma and Gupta, 2006, Kumar *et al.*, 2014). Colonies must be fed with artificially formulated diets to maintain bee population. In the present study, efforts were made to develop highly palatable, nutritionally balanced and economically viable pollen supplement or substitute for *Apis mellifera*. Diet 3 composed of soy flour-1part, brewer's yeast-1part, soy protein hydrolysate-1part, sugar-1part, glucose-1part, proved to be best for honey bees in terms of biochemical composition, net consumption, positive influence on colony parameters like sealed and unsealed brood, egg laying, honey stores, number of bee covered frames, bee strength and input cost involved.

Keywords: *Apis mellifera*, dearth period, beekeeping, Gwalior, Panchkula, artificial diet

ISCA-ISC-2015-3BS-04-Oral

Factors effecting Pollen Gathering activity in *Apis mellifera* colonies

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Abstract: Honey bees require large amount of pollen as a source of protein, vitamins and fat as well as it stimulate hypopharyngeal glands of nurse bees. Amount of brood rearing is largely determined by pollen availability, which is not abundant throughout the year. Pollen shortage is disastrous to bee colony, so it becomes compulsory to provide pollen supplement. Natural pollen can be collected by beekeepers by using pollen traps at hive entrances, when pollen income is sufficient, that can be preserved in many ways. A study was conducted to reveal various factors which increased pollen collection in *Apis mellifera* colonies. Observable increase in amount of pollen collection was recorded, when colonies were fed with sugar syrup while pollen from a particular crop was available. Increase in pollen collection was directly proportional to amount of open brood in hives. Pollen stores increased significantly when combs with open brood were added to bee hives. Pollen gathering activity increased statistically when pollen stores were removed and extra raised empty combs were given to experimental colonies. Further increase in pollen income was recorded when frames with open brood were placed near hive entrances. Pollen gathering depended upon inner requirements of colony as well as environmental factors. The conclusion of study was that colonies with more open brood placed near hive gate, having less amount of pollen stores and provided with sugar syrup at time of pollen availability collected considerably more amount of pollen as compared to normal (control) bee colonies.

Keywords: *Apis mellifera*, foraging activity, pollen, colony requirements.



ISCA-ISC-2015-3BS-05-Oral

Protective effects of Virgin Coconut Oil against cardiac tissue injury in a murine model of myocardial infarction

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Abstract: Cardiovascular disease (CVD) is the leading cause of mortality in the world. Myocardial infarction (MI) is one outcome of CVD, and it has become a growing global problem since smoking, diabetes, obesity, dyslipidemia and hypertension are prevalent. The global burden of CVD entails daily expenses on prevention, treatment and rehabilitation. Virgin coconut Cocos nucifera oil (VCO) is easily extracted from the kernel or meat of the mature coconut is inexpensive and readily available in the tropical countries like the Philippines. Modern research has demonstrated a number of potential health benefits of VCO. This is a pilot study on the potential cardioprotective effects of oral supplementation with VCO against isoproterenol (ISO)-induced MI in an animal model. Forty (40) adult male Sprague-Dawley rats were randomized to five groups (n=8), namely: Sham control (plain normal saline solution [PNSS] only); negative control (PNSS and isoproterenol 85 mg/kg/dose [ISO]); and three (3) experimental groups: VCO1, VCO5 and VCO10 (1, 5 and 10 mL/kg body weight, respectively). Oral pretreatment with VCO was done for 45 days via gastric gavage. Negative control and experimental groups were given single doses of ISO subcutaneously on the 46th and 47th days (24 h apart) to induce MI. Immediately following the second dose of ISO, the hearts were excised under inhalational ether anesthesia. Histologic examination of the left ventricular wall was performed under light microscopy. The extent of myocardial damage, edema and inflammation was graded using a standard numerical scheme. There was no mortality in any of the subjects during and post-induction of MI. Results showed normal cardiac tissue in the sham control and extensive myocardial injury (grade 3) in negative control ($p < 0.001$), confirming the histologic diagnosis of MI. The VCO-treated groups showed less severe MI: VCO1 with moderate (grade 2) injury ($p = 0.035$); VCO5 and VCO10 with minimal (grade 1) injury ($p < 0.001$), suggesting dose-dependent attenuation of the myocardial damage. No statistical difference between VCO5 and VCO10 were observed ($p = 0.635$). Medium chain- and short-chain fatty acids in VCO, particularly lauric acid, may have attenuated myocardial injury in the experimental groups, probably by antioxidant and anti-inflammatory mechanisms. These findings suggest that oral supplementation of VCO for 45 days may have potential cardioprotective effects by attenuating cardiac tissue injury in this murine model of MI. Antioxidant and anti-inflammatory assays are recommended in order to determine the exact mechanism of cardioprotection.

Keywords: Protective, Virgin, Coconut Oil, cardiac tissue, injury, murine model, myocardial infarction.

ISCA-ISC-2015-3BS-08-Oral

pH Concentration of Digestive Tract of Chanda Ranga

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Abstract: The work on fishes of India began in 1882 with the description of the fishes of river Ganges and its branches by Hamilton. The early studies like those of Day, Bevan and Hora, were only as passing references on certain aspects of physiology. The structure and function of alimentary canal and associated gland have drawn the attention of many scientific workers since 19th century. The importance of the study of the physiology of fishes is more recent and is confined to present century. Although pretty good ground has been covered on the digestive organs, still much scope is available especially the physiological side. A review of literature reveals the large edible fishes attracted more attention of workers. Small fishes, although of economic importance, have been unnoticed. It also shows that the work on physiology of digestion in India is scanty and still leaves enough scope.

Keywords: Teleost fish, digestive tract, digestive gland, pH concentration, chanda ranga.

ISCA-ISC-2015-3BS-10-Oral

Thiodan stress on Brain Neurosecretory cells of the Earthworm Eudichogaster kinneari: A Histological profile

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Abstract: Adult Eudichogaster kinneari was exposed to a safe concentration (0.003 ppm) of Thiodan for twenty days to evaluate the effects on neurosecretory cells of cerebral and subpharyngeal ganglion of brain. Brain was severely affected



nucleoplasm, in neurosecretory material and in neuropile. Irregular shape of neurosecretory cells were seen, viz- uneven stain, disorderly thickened and broken cell membrane was seen at many places in neurosecretory cells. Accumulation of neurosecretory material around the nucleus and devoid of neurosecretory material from cell perikaryia was noticed. Ultimate atrophy of whole histological architecture of neuro secretory cells in both ganglion of brain was seen. Significant reduction in diameter of cell area, nuclear area, cell length and axon length of neurosecretory cells ($p < 0.001$) were observed significantly.

Keywords: Brain, thiodan, histomorphology, neurosecretory cells, neurosecretory material, supra pharyngeal ganglion, subpharyngeal ganglion.

ISCA-ISC-2015-3BS-11-Oral

Adverse Effects Due To Electromagnetic Fields (EMFs) and the Remedial Measures

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Abstract: In the present era new technologies are making our lives easier but at the same time also making life shorter. The healthy human body resonates around 10 hertz and frequencies above that create biological stress, tissue damage and serious health problems. Our own body possesses electromagnetic fields to function properly. This natural EMFs help to regulate biochemical processes of body system. But effective artificial EMFs change the frequency of our own body's electromagnetic fields through a process called entrainment (or sympathetic resonance). Entrainment is the tendency of an object to vibrate at the same frequency as something outside of it. Powerful artificial EMFs overwhelm our body's own electrical fields, changing their frequency and distorting the balance of the body's electromagnetic fields and its communication system. This causes physical, mental and emotional problems. Most of all electronic equipments emit electromagnetic fields (EMFs) on many different frequencies. These EMFs can be extremely harmful to our health. Thus, an attempt has been made to study the harmful effects of such electro-magnetic radiations and to find remedial measures to minimize the radiation effects.

Keywords: EMFs, radiation, computer, mobiles, health, plants.

ISCA-ISC-2015-3BS-12-Oral

Fish poisonous plants used by Oraon Tribes of North-east Chhattisgarh, India

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Abstract: A survey for documentation of Fish poisonous plants used by the Oraon Tribes in north-east Chhattisgarh has been conducted during August 2014 to July 2015. Ethnobotanical information was gathered through individual interviews and observations among the Oraon tribals. Chhattisgarh state is mainly inhabited by different tribal communities, life style of tribal people depends upon the land, agriculture, hunting, fishing, collection of food product, bamboo work or labour of any kind is their profession for livelihood. Fishing is an alternative occupation of the Oraon tribals and other folk of the area. They use their indigenous knowledge about plants for catching fish easily. The present paper deals with 45 species used by the tribals of Chhattisgarh for fish poisoning. The use of 10 of these species –*Barleria prionitis*, *Elephantopus scaber*, *Gloriosa superba*, *Haldina cordifolia*, *Nyctanthes-arbour-tristis*, *Lepidagathis cristata*, *Hygrophila spinosa*, *Plumbago zeylanica*, *Ventilago denticulate*, *Sphaeranthus indicus* as fish poison has not been reported so far in literature. The study suggested that, documenting the medicinal plants and associated indigenous knowledge can be used for conservation and sustainable use of Fish poisonous plants in the area and for validation of these plants for further study.

Keywords: Fish poisonous plants, Oraon tribe, Chhattisgarh, India

ISCA-ISC-2015-3BS-13-Oral

Attack on Elephant by Tiger, a choice of food or Struggle for Survival, Ecological study in Corbett Tiger Reserve, Ramnagar, Uttrakhand, India

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Abstract: Corbett Landscape and Corbett Tiger Reserve is a beautiful place of roar and trumpets. Tiger is a very intelligent animal and are able to survive in any situation. In dry summer season the fulfillments of vital need become tight and tough for all. Especially prey species aggregates near water bodies. On the other hand tiger is territorial animal. Dry



season depicts extra efforts to catch the prey by tiger. Different dynamics of Predator-prey relationship is recorded in this season. Total 8 cases of elephant's mortality with tiger attack sign were ceased. Total 120 scats were analyzed. Scat analysis resulted less daily requirement of tiger. Ecological requirements are 4-5 kg per day. But scat analysis resulted very less in rest of proper daily consumption. Mostly attacks on elephant recorded in the month of June or in dry season. Such type of tough situation the tiger movement become in human-dominated landscape for easy prey (Livestock predation). The chances of conflicts are more and more in these periods. Increasing rate of conflict is always die heart for tiger as well as human beings.

Keywords: Attack, elephant, tiger, food, struggle, survival, ecological, Corbett Tiger Reserve.

ISCA-ISC-2015-3BS-14-Oral

Embryonic Development of Bhakur *Catla Catla* Hamilton 1822 (Cyprinidae)

Tambahangfe J., Subba B.R. and Jha Susil

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Abstract: The present study was carried out to investigate the embryonic development of Bhakur, *Catla catla*. The incubation period of Bhakur was found to be 13 hrs of post fertilization at $30 \pm 1^\circ\text{C}$ of water temperature. The present work generated some important information on the early life history and developmental stages of Bhakur in Nepal. This study will help the fishery biologist in understanding the developmental biology of the fish, which might be of great use to take appropriate steps for the sustainable development of the culture, management, and production of indigenous breeds required for fish culture in Nepal climatic condition.

Keywords: Embryonic, development, bhakur, *Catla Catla*, Hamilton.

ISCA-ISC-2015-3BS-15-Oral

Phytochemical and Biochemical Composition of wild honey Collected in Eastern Zone Areas in Tigray Ethiopia

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Abstract: Natural honey is one of the most widely sought products due to its unique properties, which are attributed to the influence of the different groups of substances it contains. Honey is used for nutritional, medicinal and industrial purposes and it is an important commodity in the international market; serving as foreign exchange earner for many countries. In Tigray, honey production (beekeeping) has the potential to develop as a prime agro-horticultural and forest-based industry which can be a major foreign exchange earner if international standards are met. The precise chemical composition and physical properties of natural honeys differ according to the plant species on which the bees forage. Differences in climatic conditions and vegetation's are also important factors that can affect the various properties of honey. Adigrat consists of humid, semi-arid and arid climates with varying agricultural activities and blossoms from different types of vegetation, which can influence the natural composition and properties of honey. Thus, analysis of the biochemical composition of 6honey samples obtained from different locations in the eastern zone of Tigray was carried out to ascertain their qualities. Moisture and ash contents of the samples had average values of 16.00 ± 2.19 g/100 g and 0.47 ± 0.09 g/100 g, respectively. The protein contents ranged between 0.35 and 1.08g/100 g with a mean of 0.67 ± 0.25 g/100 g while fat content lied between 0.10 and 0.50 g/100 g with a mean of 0.29 ± 0.11 g/100 g. Total carbohydrate contents and Energy values showed average values of 82.30 ± 2.03 g/100 g and $1,401.33 \pm 33.71$ KJ/100 g, respectively. Fructose contents gave an average of 38.94 ± 0.90 g/100 g, while glucose contents had a mean value of 31.65 ± 2.79 g/100 g. The sucrose contents of the honey samples had a mean value of 1.84 ± 0.79 g/100 g. Total polyphenols and vitamin C contents showed mean values of 65.31 ± 19.50 mg Gallic Acid Equivalent (GAE)/100 g and 21.15 ± 3.99 mg/100 g, respectively. The results of this study indicate that the samples compare favorably with samples in many parts of the world and also fall within the limits of international standards.

Keywords: Phytochemical, biochemical, wild honey, collected, Eastern, Zone Areas, Tigray.



ISCA-ISC-2015-3BS-16-Oral

Pleurotusostreatus: Strain improvement for Selective Bio-delignification

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Abstract: Lignin is the most abundant and recalcitrant polymer on earth. Lignin biodegradation has obvious ecological significance with promising biotechnological applications. Lignolytic enzymes were used for bio-pulping and bio-bleaching, clean up toxic waste sites, bioremediation of PAHS, xenobiotics and textile industrial effluents, bio accumulation etc. The unique ability of white rot Basidiomycetes to degrade lignin content of unbleached kraft pulp (UKP) has become a matter of high interest with the aim of developing eco-friendly biotechnological alternatives to reduce the toxicity of chemicals during bleaching and pulping in paper and rayon industries. *Pleurotusostreatus* is proved to be useful in bio-delignification studies with high lignolytic and low cellulolytic enzyme activity. However, the rate of bio-delignification is lower than the chemical based treatment. So there is a need to further search new strains which can effectively replace chlorine based chemical bleaching. Therefore, our effort is to increase the efficiency in biobleaching by using cellulase less /minus lignolytic fungi. In addition to the chemical agents, two physical mutagenic agents (U.V rays and X-rays) were tried to obtain mutants with reduced cellulolytic and increased lignolytic activity. Further, intra-strain protoplast fusion between higher laccase producing mutants proved effective in achieving superior laccase producing fusants.

Keywords: White Rot Fungi, Bio-delignification, strain improvement, lignolytic enzymes, protoplast fusion.

ISCA-ISC-2015-3BS-17-Oral

Parasitic Impediments of Ostriches (*Struthio camelus* Linnaeus 1758) Farming at Gangoliya VDC-1, Rupandehi

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Abstract: Parasitic impediments of Ostrich farming in Gangoliya-1 Rupandehi was investigated by random faecal sampling and inspecting management practices in the farm. A total of 92 fresh pooled samples from four subdivided farms of Ostrich Nepal Pvt. Ltd. (The only one Ostrich farm of Nepal) were collected in a wide mouth sterile vial with 2.5% potassium dichromate. Collected samples were subjected to sedimentation and floatation processes followed by Lugol's Iodine mount and Saline mount. Management systems of the farm were inspected through Questionnaire survey and Observational study. Out of 92 faecal samples examined 80 samples were positive contributing 86.96% as prevalence rate of endoparasites. Ostriches belonging to those four subdivided farms were found to harbour a variety of Protozoan parasites such as *Entamoeba* (57.6%), *Eimeria* (7.6%), *Balantidium* (5.43%), *Isospora* (3.26%) and *Histomonas* (1.09%) and Helminths parasites such as unidentified Cestode (4.35%), Nematodes such as *Ascaridia* (43.48%), *Serratospiculum* like (36.96%), *Libyostrongylus* (14.13%) and *Codiostomum* (6.52%). Most interestingly three species of ectoparasites were isolated during faecal examination. These include *Goniocotes* (1.09%), *Gabucinia* (2.17%) and *Dermoglyphus* (1.09%). The results reveal a commercial production of Ostriches by 100% with the farm engaged in production of other livestock species (Emus). Similarly, all the sub-divided farms were provided with premix based compounded foods which include Grass (Lucerne or clover) (50%), Wheat (12%), Maize (18%), Soyameal (17%), Vitamins and minerals (1%) and Others (2%). High prevalence of endoparasites could be due to lack of antihelminthic medication and faulty management practices. Since these parasitic infections may lead to poor performance and efficacy in laying and weight gain in Ostriches, effective deworming program and management strategy should be conducted in order to upgrade the health status of Ostriches and hence to maximize the benefits from them.

Keywords: endoparasites, ostrich, ectoparasites, antihelminthes, Gongolia VDC.

ISCA-ISC-2015-3BS-18-Oral

Prevalence of Gastrointestinal Parasites in Himalayan tahr and Barking Deer of Rara National Park, Nepal

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Abstract: The aim of this study was to determine prevalence of gastrointestinal parasites in Himalayan Tahr and Barking Deer of Rara National Park. A total of 51 samples including 17 samples from Himalayan Tahr and 34 samples from Barking Deer, were collected in the month of May/June 2011 and 2012 and examined by means of coprological techniques.



33 (97.06 %) samples from Barking Deer were found positive while all the 17 samples (100%) were found positive from Himalayan Tahr. This study showed 70.59 % cestode infection and 100 % nematode infection among helminthes while 88.24 % coccidian infection in Himalayan Tahr while in Barking Deer, among total of 34 samples. 25 (73.53%) samples were found to be positive for coccidia and 16 (47.06 %) samples for cestodes and 26 (76.47 %) for nematodes in Barking Deer but trematodes were not observed in both ruminants. The prevalence of protozoan parasite found in Himalayan Tahr was *Eimeria* (88.24%) and among cestode, only *Moniezia* (70.59%) were found whereas *Eimeria* (73.53%) and *Moniezia* (47.06%) were observed in Barking Deer too. Statistically, there was no significant difference in prevalence of *Eimeria* sp. and *Moniezia* sp. between Himalayan Tahr and Barking Deer ($\chi^2=1.449$, $p>0.05$ and $\chi^2=2.534$, $p>0.05$). In Himalayan Tahr, Prevalence of *Oxyuris* was found to be highest (88.24%) among various nematode parasites followed by *Stongyloides* 64.71%, *Ascaris* 52.94 %, *Trichostrongylus* 11.76%, *Dictyocaulus* 11.76%, *Muellerius* 11.76% and *Haemonchus* 5.88%. While in Barking Deer, 26 (76.47%) samples were found to be positive for nematode parasites. Among the nematode eggs examined, *Oxyuris* revealed highest prevalence (70.59%) followed by *Ascaris* 17.65%, *Trichuris* 8.82%, *Dictyocaulus* 8.82% and *Haemonchus* 2.94%. Multiple infections in Himalayan Tahr were found to be higher (76.47%) than in Barking Deer (23.53%). It was observed that most of them were infected with *Oxyuris*, *Eimeria* and *Moniezia*. 23.53% showed combination of 3 species in Himalayan Tahr but in Barking Deer it was found to be slightly less (20.59%). Single infection was observed in 23.53% faecal samples where double infection in 29.41% in Barking Deer. But none of the samples were found to be infected with single and double infection in Himalayan Tahr.

Keywords: Intestinal parasites, Himalayan Thar, Barking deer, Rara National Park,

ISCA-ISC-2015-3BS-19-Oral

Alteration in Behaviour of Working Women

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Abstract: Working women play dual role and do excessive work. They have stress of up gradation and completion of work. Many health problems arise due to stress, eating disturbances and sleeping up downs. Due to stress, adrenaline and cortisol hormone release in large quantity and enhance or activate the heart rate, BP, and respiratory rate too. Due to stress cognitive, emotional and physical symptoms were seen in present study. Chronic worry, rigid thinking, negativity, lack of flexibility, aches and pains, diarrhea or constipation, rapid heartbeat, nausea, habits of alcohol, cigars, are few of the results of stress of working women. These may directly or indirectly affect family members too.

Keywords: Working women, stress, work, symptoms, hormone.

ISCA-ISC-2015-3BS-20-Oral

Identification of Plant Growth Promoting Rhizobacteria by third Generation Sequencing

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Abstract: Soil is a complex microhabitat and the progress in testing contemporary ecological hypotheses in soil has been limited by the difficulty in accurately measuring species richness and evenness and information about the species really involved in microbial activities are lacking. Soil microorganisms are involved in a wide variety of metabolic and physiological activities that influence the microhabitat. Rhizosphere microbial communities can influence the ecological processes of nutrient transformations. Plant growth promoting rhizobacteria (PGPR) are typical beneficial organisms that are capable of influencing these changes in rhizosphere functioning. Biotechnology has opened up new possibilities concerning the application of beneficial microorganisms for the promotion of plant growth and the biological control of soil borne pathogens. Microbial diversity of soil is affected by both the plant and soil types and serves as an important index of agricultural productivity. Culture methods have been used for exploring rhizospheric microbes, but these methods are conventional that have limitations for evaluation because most rhizosphere bacteria are viable but non-culturable. The present study was focused to characterize and identify the potential microflora of the rhizosphere soil using MALDI-TOF and 16s rRNA sequencing. Soil samples were collected from the agricultural fields near Siruvani hills collected from 3 sites at 20 – 25cm depth. Isolation of bacteria and actinomycetes was performed by using Nutrient agar and Starch casein agar respectively. Serial dilution and spread plate technique was performed to isolate the microorganisms from the soil samples. Various biochemical characteristics like Starch hydrolysis, Casein hydrolysis, Catalase test, Oxidase test, Phosphate solubilization were carried out according to standard protocols. The Identification of species is done by



MALDI TOF technique using the MALDI Biotyper 2.0 software (Bruker Daltonics) and comparing the experimental spectra with the spectra of the MALDI Biotyper 2.0 library. Simultaneously, DNA was isolated from each organism and the PCR amplification for 16srRNA region was performed and sequencing done. Multiple sequence alignment and BLAST analysis were performed to identify the species similarity of the organisms to that of the database. Results indicated that *Bacillus* sp. and *Pseudomonas* sp. were greater in number with identification of some novel strains. Results are discussed and presented.

Keywords: rhizobacteria, third generation sequencing, 16s rRNA sequencing, MALDI-TOF

ISCA-ISC-2015-3BS-22-Oral

BScript: A new Interface Software for quick Development

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Abstract: In this Information age, the importance of software as an integral part of research and teaching is rising enormously. However, traditional tools of software creation are it for executing simple algorithms or more complex standalone software, are often too unwieldy or time consuming for non specialists. Creating software for research and other purposes also often carry a large cost for involving specialist software designers. Modifying software also requires source code management or recompilation or recoding. Here, we have created a software interface which is low on system resources, exceedingly simple and fast to develop, and incorporates various advanced functions. It includes almost all of the basic functions, including loop algorithms, mathematical functions, canvas draw functions, windows dialog box support, file operations, networking support and even three dimensional rendering. The importance and utility is manifold. Complex mathematical algorithms can be coded and executed, interactive quizzes, networking with researchers, basic to intermediate 3D rendering according to equations, or by strict definition all are possible. A particular highlight of this software is the ability to efficiently read directly from directories. Another specialty is the non-obfuscated plaintext code, which saves time and makes editing the code much easier. Detailed reports on problems if the program fails to run are also provided for quick correction. Setting up of secondary scripting language is also possible, which can add elements of obfuscated propriety code if required. Various examples illustrate how the software can be used by researchers, students and in essence, everybody with a minimal base in programming concepts. The examples include a biology quiz with a separate folder for user settable questions, a simple slideshow, a video player with an animal videos and user interactive dialog, among others. The system requirements are low, and the program is in itself is only around 3.5MB in size. Help file is also provided with an example of code to make the user enabled to start coding with minimal set up time. It does not require dependencies like NET Framework and Java and can be run out-of-the-box with only a compatible basic display driver.

Keywords: software, non-specialist, loop algorithms, mathematical functions, draw functions, file operations, networking with researchers, plaintext code, secondary scripting, researchers and student use, no dependencies.

ISCA-ISC-2015-3BS-23-Oral

Excito Repellency Properties of Essential Oils on *Aedes Aegypt* (L)

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Abstract: Protection from mosquito bites could be achieved by avoiding physical contact with mosquito using insect repellents. Pyrethroids are the predominant insecticide over the counter (OTC) products and professional use products for repel household pests including mosquitoes. Two different behavioral responses viz, irritancy and repellent are responsible for repelling mosquito. The excite repellency phenomenon occurred in the vector population following the application of definite insecticides. The aim of this study was to analyze the behavioral response (irritancy) of sucrose fed mosquitoes either mated or unmated exposed to treated essential oil paper by using an excite repellency chamber in the absence of live host stimuli against *Aedes aegypti* under controlled laboratory conditions. Results showed that *A. aegypti* exhibits varying levels of response on treated paper (contact) with selected essential oils viz, Wintergreen, bergamot, Geranium and Nutmeg oil at different concentrations(1,5,10and 20%) Level of behavioral response varies depending upon dose response at different concentrations. Mortality rate, survival rate, recovery rate and entry index of each oil were evaluated at different concentrations. The potential of these tested oils to exhibit irritancy response to *A. aegypti* is discussed.

Keywords: excito- repellency, essential oils, *Aedes aegypti*.



ISCA-ISC-2015-3BS-25-Oral

Optimization Condition for Extraction of total Phenolic Content from *Solanum lycopersicum* by Response surface Methodology

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Abstract: Phenolics are essential part of human diet. Tomatoes are rich in carotenoids and phenolics. The major compounds found to be present in tomatoes are tomatine, lycopene, carotenoids, phenolics, vitamins and anthocyanins. The phenolic compounds are gaining importance with major medicinal properties. Quantifying the phenolic from whole fruit with its maximum content will help us to carry out further research in efficient way. Phenolic compounds play a major role in quenching the free radicals and helps to restore the cells from damage their by preventing many diseases. Different extraction procedures were used for the study that includes Hot water Extraction, Pressurized hot water extraction, Cold extraction, Solvent extraction, Acid extraction and Maceration. All the extracts were analysed for its total phenolic content by Folin - Ciocalteu method. The Central Composite Design (CCD) was adopted to study the three different independent parameters namely the Time (10-30 mins), Temperature (35°C to 80°C) and Solvent ratio (5-15 mL) on the dependent variable (Total Phenolic content). The solid ratio was kept constant as 0.1gm throughout the study period. The results indicated that the maximum content of total phenolic content was obtained from the aqueous Hot water extract of *Solanum lycopersicum* dried sample. Correlation co-efficients (R^2) of the models were as 0.91 respectively. The presence of hydroxycinnamic acid, p-coumaric acid was confirmed by HPLC analysis. This study will further lead to the formulation of new drug with high antioxidant property that will help to prevent various diseases like cancer, cardiac problems, neuro disorders and many more.

Keywords: Solvent, response surface methodology, total phenolic content, tomato, HPLC.

ISCA-ISC-2015-3BS-26-Oral

Study of Flavonoid pathway genes to produce Medicinally important secondary Metabolites in stem cell lines of *Camellia assamica* (Masters)

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Abstract: Stem cells are undifferentiated cells, having unique self-renewal characteristics, which develop as precursors for differentiation. In plants, the focus of stem cell research has been on the pluripotent stem cells of root and shoots meristems for the discovery of medicinally important natural compounds. Tea is having bioactive compounds (flavonoids) with therapeutic potential. Aiming to synthesize those secondary metabolites using stem cell technology in *Camellia assamica*, an undifferentiated stem cell line was established from the meristematic zones of shoot and root tips in modified MS medium with 2mg/l NAA (1-Naphthaleneacetic acid). Dedifferentiated cell lines were also established from leaves and roots in the same media as control. Scanning electron microscopy and cytological studies showed higher cell and nuclear activity in stem cell lines. High expression of key flavonoid biosynthetic pathway genes was revealed through RT-PCR. Leucoanthocyanidin 4-reductase (LAR) and Anthocyanidin reductase (ANR), responsible for synthesis of catechins and epigallocatechins having medicinal value, showed high expression in both the cell lines. The flavonoid compounds were detected and quantified through HPLC analysis. The study reveals that pluripotent as well as totipotent cell lines of tea have potentials for scalable flavonoid production on elicitation.

Keywords: Tea, stem cell line, flavonoids, gene expression, HPLC

ISCA-ISC-2015-3BS-27-Oral

Sustainable Production of Biofuels from Nitzchiaceae Girna River Dist. Jalgaon Maharashtra, India

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Abstract: The sustainable investigation results to obtain high quality biodiesel from microalgae, family Nitzchiaceae through transesterification. Continued use of petroleum sourced fuels is now widely recognized as unsustainable because



of depleting supplies and the contribution of these fuels to the accumulation of carbon dioxide in the environment. Renewable, carbon neutral, transport fuels are necessary for environmental and economic sustainability. Microalgae play an important role in this regard, as they have promising characteristics as potential raw material for the production of biofuels, able to absorb large amounts of CO₂. Chlorophyll organisms convert these simple substances in the atmosphere, absorbing sunlight into chemical energy stored, that is, compounds with high energy; biomass can also be used to obtain biocompounds human nutritional supplement and food animal, however, have been found an important number of difficulties to economically viable production like high cost of production of dry biomass and oil extraction.

Keywords: Microalgae, Girna River, Biofuels, Nitzchiaceae, transesterification, absorb CO₂.

ISCA-ISC-2015-3BS-28-Oral

Traditional use of Medicinal Plants Practiced by the Oraon Tribe of Jashpur District (C.G.), India

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Abstract: Jashpur is the eastern most district of the state Chhattisgarh, India. Jashpur is inhabited by a large number of tribes such as Oraon / Kurunkh, Nagesia, Kanwar, Birhor, Biaga, Paharia korwa and Munda, amongst which Oraon is the major tribe. Ethnobotanical survey was conducted among the Oraon tribe of Jashpur during 2011 to 2015. In the present study survey is being made to explore the use of medicinal plants for piles, bone fracture, diarrhoea, respiratory problems, polio, body swelling, backache, delivery problems, fever, paralysis, rangbaj (skin discoloration) for shock due to lightning, veterinary fracture, when children become unconscious due to fear or shock., oral diseases, blood purification, liver disorders and wounds by the aboriginals of the district.

Keywords: Ethnobotanicals, Jashpur, Medicinal plants, Oraon tribe, Traditional.

ISCA-ISC-2015-3BS-29-Oral

Study of Seasonal Variation of Aeromycoflora of Railway Station, Janjgir-Naila, Janjgir (C.G.), India

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Abstract: The study of microorganisms such as bacteria, virus, pollen grains, fungal spores, insects and molds, which are found in the air and passively transported by air, is called as aerobiology. The present investigation was undertaken to study of seasonal variation of aeromycoflora of railway station, Janjgir-Naila, Janjgir (C.G.), India. The investigation was carried out from March 2014 to February 2015, by using the gravity petri plate method for the isolation of aeromycoflora with sterile PDA medium at monthly intervals. In this investigation period total 543 fungal colonies represented by 16 fungal types. Out of 543 fungal colonies, maximum numbers of fungal colonies (308) were isolated during winter season, moderate (148) during rainy and minimum (87) during summer season. *Cladosporium cladosporioides* was most dominant aeromycoflora followed by *Aspergillus niger* and *Penicillium* species. *Aspergillus*, *Alternaria*, *Cladosporium*, *Curvularia*, *Penicillium*, *Rhizopus* sp. are the pathogenic and allergic in nature.

Keywords: Aeromycoflora, fungal spore, seasonal variation, railway station.

ISCA-ISC-2015-3BS-30-Oral

Antifungal activity of some Leaf extracts against Seed-borne Pathogenic Fungi

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Abstract: Plant extracts are being used to control the disease since last several years. Extracts of the various plant parts like leaf, stem, root, fruit and seeds are found to be effective against seed borne pathogenic fungi. The in vitro studies have been performed by using cup plate method to examine the antifungal activity of some leaf extracts. Leaf extracts of 6 plants were screened against 5 seed borne pathogenic fungi viz. *Alternaria alternate*, *Aspergillus flavus*, *Aspergillus niger*, *Fusarium oxysporium*, *Rhizopus stolonifer*, out of 6 leaf extracts, 4 leaf extracts showed antifungal activity. The leaf extract of *Azadirachta indica* showed maximum activity while minimum activity was observed with *Capsium annum* against the fungi under investigation. These plant extracts can possibly be exploited in the management of prevent biodeterioration of seed in an ecofriendly way.

Keywords: Plant, alternaria, fungi, pathogenic



ISCA-ISC-2015-3BS-31-Oral

Diversity and Density of fish Population of Bilawali Pond of Indore, MP, India

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Abstract: Indore is a largest city in Madhya Pradesh in Central India. Bilawali Pond is situated in the southwest direction of Indore at Khandwa road near Sant Shri Asaram Babu Ashram. It is situated 6km away from Indore in Madhya Pradesh. The Catchment area of is 69 hac. The present study was conducted for a period of one year 2014-15. The dominant group of fishes identified of *Cyprinidae*, *Siluridae*, *Ophiocephalidae*, *Gobiidae*, *Centropomidae*, *Cichlidae* families. Among fishes maximum density of species belonging to *Cyprinidae* followed by *Siluridae*, *Bagridae*, *Saccobranchidae* and *Clariidae* was observed.

Keyword: Catchment area, dominant group, period.

ISCA-ISC-2015-3BS-01-Poster

GPS based study of distribution and abundance of *Calotropis gigantea* in Bordi

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Abstract: A GPS based study of *Calotropis gigantea* was done from March 2014 to February 2015 in Bordi village of Maharashtra. The representative of different land use in the village was classified based on their vegetation structure, location and human use. Other habitat characteristic such as landscape characters, developmental activities was taken into consideration. Plants were recorded using GPS machine. From the data obtain the distribution and density of the *Calotropis gigantea* plant on different types of habitat was calculated. A map was drawn using internet.

Keywords: GPS, bordi, *calotropis*, *gigantea*.

ISCA-ISC-2015-3BS-02-Poster

Effects of a Toxigenic Cyanobacterial Extract on the Germination and Morphological Development of *Brassica Rapa* and *Lactuca Sativa* Species

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Abstract: The aim of this study was to investigate the effects on germination and the morphological development of *Brassica rapa* (Mustard spinach) and *Lactuca sativa* (Lettuce) species after exposure to toxigenic cyanobacterial crude extracts. Seeds were exposed to the *Microcystis* crude extracts for 48 hours, where germination was significantly reduced from 100% at 0ml to 0% at 7mls and 5mls respectively, as the concentration of the crude extract increased. The study showed after growth of the seeds in the *Microcystis* crude extracts for six days, there was a pronounced inhibitory effect on the development of the roots and shoots and that the *Microcystis* crude extracts inhibited germination and affected the morphological development in a concentration-dependent manner.

Keywords: Cyanobacteria, crude extracts, germination and morphological development.

ISCA-ISC-2015-3BS-03-Poster

Evaluation of phytochemical contents of *Ipomoea cairica* (L) Sweet

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Abstract: The present study aims at phytochemical screening of methanolic extracts of leaves of *Ipomoea cairica* Family Convolvulaceae. Phytochemical screening was performed on leaves extracts of *Ipomoea cairica* obtained from Gorakhpur, India. The powdered dried leaves were initially subjected to determination of physical constants. They were extracted with methanol in Soxhlet apparatus. The total yield of plant extract in the Soxhlet extraction ranged 19.35%. Extracts were subjected to various chemical tests. The results demonstrated the presence of alkaloids, sterols, flavonoids, reducing sugars, tannins, saponins, terpenoids, anthraquinones, glycosides and phenols. These results were compared with literature values. Indications from the results depicted usefulness of the plant parts in the treatment of some common diseases.

Keywords: *Ipomoea cairica*, bioactive compounds, convolvulaceae, methanol, phytochemicals.



ISCA-ISC-2015-3BS-04-Poster

Morphotaxonomy of Chlorococcales from Lentic water body in Dhule district of Maharashtra, India

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Abstract: The present investigation was carried out by selecting lentic water body of Devbhane dam in Dhule district, of Maharashtra. Geographically The Devbhane dam is situated at Devbhane of Dist. Dhule. It lies at 21^o, 21' North latitude and 74^o, 48' East longitude. Dhule are rich in lentic water systems supporting a rich algal flora. While studying the morphotaxonomy of algae attempt have been undertaken to analyze and bring out the algal floristic of this region. The present contribution is to study the morphotaxonomy of Chlorococcales. Author collected 24 taxa and has been described in present communication. Line drawings were made by Camera Lucida. Taxa were identified with the help of standard monograph and recent literature. All taxa are being reported for the first time from this area. The present work enriches our knowledge of algal flora of this state.

Keywords: Morphotaxonomy, chlorococcales, lenticwater, Dhule, Maharashtra.

ISCA-ISC-2015-3BS-05-Poster

Species Diversity of Genus *Chara* Linn. from North Maharashtra Region, India

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Abstract: Indian Subcontinent supporting a prolific variety of algal taxa. Charophytes commonly known as stonewort are a remarkable and isolated having no clear affinity to any other groups of algae. The present paper deals with species diversity of genus *Chara* Linn. from North Maharashtra regions comprising of three districts viz Jalgaon, Dhule, and Nandurbar, comes under foot hills of Satpuda ranges. Totally 11 species of *Chara* have been reported from study area. These species have been reported first time from this area. This is preliminary survey shows richness of Charophytes from the yet unexplored part of North Maharashtra. The present work improves our knowledge of Species diversity of *Chara*. This data can be informative in the development of algal monitoring program in future.

Keywords: Algae, charophytes, species, diversity.

ISCA-ISC-2015-3BS-08-Poster

A new report of *Kalicephalus* sp. intestinal Nematode parasite of *Amphiesma stolatum* (Reptilia: Colubridae) from Nepal

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Abstract: A nematode parasite *Kalicephalus* sp. is common intestinal nematode parasites of reptiles. *Amphiesma stolatum*, a non-venomous snake population is decreasing from Kirtipur area, Nepal. During the month of June 2013, a total of two weak *Amphiesma stolatum* encountered in Kirtipur area were examined for intestinal parasites. One of them found infected with nematode parasites, taxonomically identified as *Kalicephalus* sp. The parasite reported in the present study records the first report of parasite from snakes from Nepal.

Keywords: Nematode, Parasite, *Kalicephalus* sp., Intestine, *Amphiesma stolatum*, Kirtipur.

ISCA-ISC-2015-3BS-10-Poster

Mycoflora of animal fodder from Dhule district of Maharashtra

Borse K.N.

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Abstract: Fodder is any agricultural foodstuff used specially to feed domesticated live stock. Animal fodder contains many fungi which produce metabolites in storage, which are poisonous to animals. The higher moisture content of fodder is suitable for development of moulds. During the survey of animal fodder mycoflora from Dhule district of Maharashtra twelve different fodders from family Fabaceae, Poaceae and Liliaceae were selected. Fifteen species of fungi were isolated from these fodders by culturing them on PDA plates. Among these *Alternaria*, *Aspergillus*, *Colletotrichum*, *Curvularia*, *Fusarium*, *Mucor* and *Rhizopus* are common on all animal fodders.

Keywords: Mycoflora, animal fodder, mycotoxins, Fabaceae, poaceae.



ISCA-ISC-2015-3BS-11-Poster

Ecological Studies of Certain Macrophytes with Special Reference to Biological Productivity in and around Lake Picchola, Udaipur, Rajasthan, India

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Abstract: Present work highlights the biomass production, phytosociology of macrophytic vegetation pertaining to Lake Picchola, Udaipur (Raj.), India. A sincere attempt has been made to correlate the production of macrophytic vegetation to physicochemical characteristics of water of the lake Picchola. The lake is towards the state of eutrophy. The study area which is located in the shallow water zone of the lake and nearby wetland provide an ample scope of studying macrophytes as a large number of macrophytes grow in different season of the year in the ditches in the vicinity of the beautiful lake Picchola. The submerged hydrophyte *Potamogeton pectinatus* indicated hard water nature of the lake picchola, Udaipur (Raj.), India.

Keywords: Macrophytes, biomass, production, wetland, physico - chemical characteristics, lake water.

ISCA-ISC-2015-3BS-12-Poster

Diversity of the genera *Gloeotrichia* Agardh and *Rivularia* (ROTH.) Agardh from Jalgaon District of North Maharashtra, India

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Abstract: During the study of algae of lakes situated in Jalgaon district the author came across several members of blue green algae. Amongst them species of *Gloeotrichia* and *Rivularia* are interesting and rarely occurred. The present investigation deals with the systematic accounts of 06 taxa of genus *Gloeotrichia* and 02 taxa of genus *Rivularia*. The genus *Gloeotrichia* represented by 3 species with 3 varieties. They have been described for the first time from Jalgaon district. The information provided can be used for the preparation of algal databases and detailed account of algal flora of Jalgaon district of Maharashtra, India

Keywords: *Gloeotrichia*, *rivularia*, diversity, lake, Jalgaon.

ISCA-ISC-2015-3BS-13-Poster

Assessment of water quality of the Habitats of freshwater Turtle species in central valley of Manipur, India

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Abstract: Manipur is a north eastern Indian state that borders Myanmar to its east. Situated between latitudes 23.80°N to 25.68°N and longitudes 93.03°E to 94.78°E, it covers a total geographical area of 22,327 km². Ten percent of the area is occupied by central valley and rest by surrounding hills. Northeast India is situated at the confluence of Himalayan and Indo-Myanmar hotspot. It supports highest diversity of turtles in the country. Turtles represent one of the most threatened groups of vertebrates. Freshwater turtle in Manipur inhabit different water bodies ranging from shallow ponds to lakes and rivers. The central valley of Manipur has various wetlands that support four turtle species. Physico-chemical parameters of the water bodies of central valley were analysed to assess the water quality of these freshwater turtle habitats. The parameters analysed were temperature, pH, conductivity, transparency, DO, FCO, , nitrate and calcium level during the year 2012 and 2013. Upon performing statistical analysis some of the physico-chemical parameters showed significant correlation. Further, it was observed that most of the values were within standard permissible limits. In the present study different water bodies did not differ significantly in their capability to support turtle habitations.

Keywords: Manipur, Northeast India, physico-chemical parameters, wetlands, freshwater turtles.

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4. Chemical Sciences

ISCA-ISC-2015-4CS-01-Guest Speaker

The Ugly Faces of Corrosion

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Abstract: Corrosion is a major problem in several industries. It causes enormous wastage of metallic materials, which leads to heavy economic losses all over the world. Every country loses 3-4% of GDP. In India the losses due to corrosion are around Rs. 2.0 lakh crores per annum. In US the losses are around 300 billion dollars per year. The Global loss is about 1.8 trillion dollars per year. Besides economic losses fatal accident also takes place due to corrosion which takes the life of living beings. The awareness to corrosion and adaption of timely and appropriate control measures play key role in mitigation of corrosion failures. The outline of the paper includes definition and types of corrosion, mechanism of corrosion and methods of corrosion control. The salient features of the research work carried out on corrosion and its control using inhibitors shall be highlighted.

Keywords: Ugly, faces, corrosion.

ISCA-ISC-2015-4CS-02-Guest Speaker

Strategies for the Diversity Oriented Synthesis to Exploit Biological Profiles of the new Molecules

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Abstract: Ever increasing thrust for the new molecules to exploit their biological profiles prompted synthetic chemists to develop new methodologies there by creating library of organic molecules. So synthetic methods that allow rapid access to large number of diverse structural arrays is growing constantly, which served as a new driving force for the advancement of synthetic organic chemistry. In order to synthesize large number of molecules with high level of diversity and complexity, In addition to developing new synthetic techniques and reagents, organic chemists are looking for exploring new methods to design and to evolve new molecules, strategies for new molecules leading to new source of diversity and improving the quality of compound libraries. This diverse new methodologies that will create many structurally diverse compounds efficiently in high yields and with excellent purity and with wide range of functional groups as handles to expand them further. One of the richest source of diversity in drug discovery are small molecule heterocycles, which in addition to exhibiting biological activity, also serve as rapid scaffolds for further display of broad range of functionalities. For several years Prof. M.V. Basaveswara Rao¹ and his research group has been engaged in design and development of new efficient methodologies for a wide variety of heterocycles, displaying a range of skeletal and functional group diversity. The biological properties of heterocycles in general make them one of the prime interests of the pharmaceutical industry, biotechnology industry and as well as for opto-electronic industry. Our group initiated work on the synthesis of heterocycles with an aim to understand their properties towards bioactivity like, antibacterial, anti-malarial, antifungal, anti cancer, free radical scavenger, etc. and also towards Non Linear Optic materials. We have synthesized indole skeletons initially and utilized them for making other heterocycles, like carbazoles and carbolines and their fused derivatives. We also have attempted successfully the synthesis of several other heterocyclic molecules. All the synthetic methodologies reported by us are simple efficient and does not involve hitherto costlier chemicals, circuitous reaction pathways, drastic reaction conditions and corrosive molecules. All the newly synthesized molecules are screened for their biological profiles and results will be discussed. Our aromatic and heteroaromatic annulation strategies are highly efficient, simple and results in variety of molecules with quantitative yields.

Keywords: Strategies, diversity, oriented, synthesis, exploit, biological, profiles, molecules.



ISCA-ISC-2015-4CS-01-Oral

Gum polysaccharides obtained from *Acacia auriculiformis* plant

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INDIA

Abstract: *Acacia auriculiformis* plant belongs to Mimosaceae family and is native of Australia and Tropical America and planted in India in F.R.I. Dehradun (U.K.), Bihar, Orissa, West Bengal, Karnataka and Uttar Pradesh. It is a medium sized straight tree upto 16 m in height and grown as an ornamental purposes. The Lac-encrustations had been observed on this tree and it act as a host plant of Lac-insect. Unbleached pulps prepared from wood have been found suitable for making wrapping paper and bleached pulps for making writing and printing paper. Wood can also be used for furniture making items. Present investigation mainly deals with the isolation, purification, preliminary analysis and nature of the constituent polysaccharides from plant gum. Water soluble gum polysaccharide was obtained after precipitation with ethanol as: L-arabinose and D-galactose in 1:4 molar ratio with traces of L-fucose from the hydrolysed compound by column and paper chromatographic analysis. The hydrolysed compound of sugars were identified by column chromatography and separated by paper chromatographic analysis as L-arabinose had m.p. 154-156⁰C, $[\alpha]_D^{29} +103.8^0C$, D-galactose, m.p. 165-167⁰C, $[\alpha]_D^{29} +82.4^0C$ and L-fucose, m.p. 112-114⁰C, $[\alpha]_D^{29} +72.5^0C$. Derivatives of L-arabinose, D-galactose and L-fucose were prepared by usual manner as: *p*-nitro-N-phenyl-L-arabinosyl amine, m.p. 201-202⁰C; *p*-nitro-N-phenyl-D-galactosyl amine, m.p. 204-205⁰C and L-fucose methyl phenyl hydrazone, m.p. 174-175⁰C. Specific rotation of gum polysaccharide is a low positive and linkages must be of α and β -type. The nature of linkages was identified by IR-Spectra (KBr).

Keywords: Gum polysaccharide, *Acacia auriculiformis* plant.

ISCA-ISC-2015-4CS-03-Oral

Co-Digestion of Municipal Organic Waste with Night Soil for Biogas Production: A Review

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Abstract: Currently, biogas production is one of the most promising renewable energy sources and it represents a very promising way to overcome the problem of waste treatment. Biogas, which is principally composed of methane and carbon dioxide, can be obtained by anaerobic fermentation of biomass such as manure, human excreta, sewage sludge and municipal solid wastes. Furthermore, the solid residuals of fermentation (the digested slurry) might be reused as fertilizer, to enhance the fertility of the soil. The prime advantages of biogas technology include i. organic wastes with a low nutrient content can be degraded by co-digesting with different substrates in the anaerobic bioreactors, and ii. the process simultaneously leads to low cost production of biogas, which could be vital for meeting future energy needs. This review clearly indicates that co-digestion of organic waste is one of the most effective biological processes to treat a wide variety of solid organic waste products and sludge as well as biogas production. In addition, it discussed the factors affecting biogas production.

Keywords: Biogas, anaerobic digestion, municipal solid waste, pretreatment.

ISCA-ISC-2015-4CS-04-Oral

Carbohydrate Contents of the Anthelmintic Plant *Boswellia Serrata*

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Abstract: The present communication deals with the identification of various sugars present in the roots of the Plants *Boswellia Serrat*. Their presence was confirmed by paper chromatography using authentic samples. Carbohydrate contents were found to contain 3.2% reducing sugars and following sugars were found present D-galactose, D-mannose, D-glucose, D-fructose, maltose, L-rhamnase, and sucrose.

Keyword: *Boswellia Serrat*, roots, paper chromatography, sugars.



ISCA-ISC-2015-4CS-05-Oral

Enantiomeric and Racemic effect of Tartaric acid on Brilliant green dye removal on Polysulfone based Membrane by MEUF process

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Abstract: The enantiomeric and racemic effect of tartaric acid (TA) with different solubility was studied on the preparation of polysulfone (PSn) ultrafiltration (UF) membranes. Dextro- tartaric acid (D-TA) and DL-tartaric acid (DL-TA) were used in the present study. Investigation was done in terms of permeation, membrane morphology and rejection performance in separation of brilliant green dye (BGD) with and without an anionic surfactant sodium dodecyl sulphate (SDS) from aqueous media at different solution pHs. Morphological study of the prepared membranes was done by field-emission scanning electron microscope (FESEM), scanning electron microscope (SEM) and atomic force microscopy (AFM). Permeability method was used for determining the pore number, area of pores and average pore size for all the prepared membranes. Characterizations such as measurement of pure water flux (PWF), compaction factor (CF), BGD rejection for finding the permeability performance of the membrane were conducted. Whereas, contact angle, equilibrium water content, hydraulic resistance, porosity and ion exchange capacity (IEC) were measured for finding the hydrophilicity of these UF membranes. The water contact angle measurements provide evidence that the hydrophilicity of PSn membrane increases by addition of both the TAs in the casting solution. The morphological analysis affirms that the porosity of membrane increases by the addition of TAs.

Keywords: Tartaric acid, enantiomer, permeability, polysulfone, membrane, dye rejection.

ISCA-ISC-2015-4CS-06-Oral

Swift and Green protocol for one-pot synthesis of Pyrano[2,3-c]pyrazole-3-carboxylates with RuCaHAp as catalyst

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Abstract: An efficient, atom-economical, four-component one-pot reaction method was developed for pyrano[2,3-c]pyrazole-3-carboxylates using dimethylacetylenedicarboxylate, hydrazine hydrate, malononitrile and aromatic aldehydes, using a RuCaHAp catalyst. Ten new substituted pyrano[2,3-c]pyrazole-3-carboxylate derivatives (**5a-k**) were synthesized in good to excellent yields (88 to 97%), at room temperature with short reaction times (H⁺ 30 min) using the green solvent aqueous ethanol. RuCaHAp was prepared and characterized by various techniques including SEM, TEM, P-XRD and BET spectroscopy. The proposed heterogeneous catalyst can be easily synthesized, is inexpensive and stable with good reusability (at least 6 times) showing marginal loss of activity. The suggested environmentally benign protocol offers high yields, clean reaction profiles, operational simplicity and no need for chromatographic separations.

Keywords: Green protocol, multicomponent reaction, heterogeneous catalyst, Ru hydroxyapatite, pyrano[2,3-c]pyrazoles, recyclable.

ISCA-ISC-2015-4CS-07-Oral

Antibacterial and Antityrosinase Activities of Isolated Compounds from Stem Bark of Ficus Platyphylla Del.

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Abstract: An investigation of the chemical constituents into the stem bark of Ficus platyphylla (Moraceae) has resulted in the isolation of hordenine, epicatechin, lupeol, lupeol acetate and á-amyrin acetate. Their structures were determined using spectroscopic data as well as comparison with literature data. The antibacterial assay has been tested against Gram positive and Gram negative bacteria, while the tyrosinase inhibition assay was examined using L-Dopa as a substrate of mushroom tyrosinase enzyme. Hordenine, epicatechin, lupeol, lupeol acetate and á-amyrin acetate showed minimum inhibition concentration (MIC) values in the range of 225-900 µg/mL against the bacterial strains. Lupeol, lupeol acetate and á-amyrin acetate showed significant antityrosinase activity against mushroom tyrosinase enzyme with percent inhibition of 67.7%, 66.2% and 62.2%, respectively.

Keywords: Antibacterial, antityrosinase, chemical constituents, Ficus platyphylla.



ISCA-ISC-2015-4CS-08-Oral

Spectral Characterization and in vitro Antimicrobial evaluation of Ni(II) and Cu(II) complexes of Schiff base derived from Streptomycin and Aniline

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Abstract: Ni(II) and Cu(II) complexes of polydentate Schiff base ligand derived from Streptomycin and Aniline were synthesized and characterized by elemental analysis, conductance measurement, ¹H NMR, FT-IR, ESI-MS and electronic absorption studies. Spectral studies explain hexa and tetra-coordination of ligand with Ni(II) and Cu(II) ion through azomethine nitrogen and nitrogen of methyl substituted amine group of N-methyl-L-glucosamine unit of Streptomycin. The metal complexes show ML₂ type stoichiometry. The electronic absorption spectral study reveals octahedral and tetrahedral geometry for the Ni(II) and Cu(II) complexes respectively. The cell dimensions as suggested by X-ray powder diffraction study unveils triclinic crystal system with P1 space group for the ligand and orthorhombic crystal system with P222 and Imam space groups for the Ni(II) and Cu(II) complexes. Particle size calculation by Scherrer's formula indicates their nano-crystalline nature. Molecular structure of the complexes has been optimized by MM2 calculations and strongly supports the concerned geometry of the complexes. Microbiological assay of the ligand and metal complexes has been examined by measuring the inhibition zone against three bacterial pathogens viz., *Escherichia coli*, *Streptococcus pneumoniae* and *Proteus vulgaris*. The results show that the ligand and its metal complexes have promising antibacterial activity against all the types of bacteria.

Keywords: Streptomycin, Schiff base, XRPD, MM2, antibiotic study

ISCA-ISC-2015-4CS-09-Oral

Estimation of Ceraluplasmin (CER) and Alpha- 1 Antitrypsin (AAT) levels among Hepatitis patients in acute and chronic state

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Abstract: Hepatitis Viruses are a common cause of viral hepatitis, it has a wide distribution among peoples, it has more than five common types: Hepatitis A, B, C, D, E. The level of Ceraluplasmin and alpha- 1 antitrypsin differences in acute and chronic hepatitis, it may be normal or mild increased in acute hepatitis while is decreased in chronic hepatitis patients. And the aim of this study to find out the relationship between the frequency of hepatitis and the concentration of immunochemical protein (such as Ceraluplasmin and Alpha -1 antitrypsin) present in patients during the acute and chronic periods of hepatitis infections. The total number of 36 patients with hepatitis (B) and 30 patients with hepatitis (C) viral infection with an age range (22- 55 years) were enrolled in this study. Patients who had liver cirrhosis were excluded from this study. With a total number of 24 age matched apparently healthy control group was taken to be compared with case studies. Assessment of serum levels of Ceraluplasmin and α-1 Antitrypsin were done by the Single Radial Immunodiffusion Assay to both case study and control group in Babylon public health laboratory from June to September 2007. Our result shows no significant (N.S) increased in level of up-1 Antitrypsin among acute patient in both types (B and C) While there is a highly significant (H.S.) result for chronic patients also in both types (B and C). Ceraluplasmin level show (N.S.) decreased among acute patient while there decreases (H.S.) in both groups of patients (B and C) after compared with a control sample. This result with agreement with many universal results.

Keywords: Hepatitis B and C, ceraluplasmin, alpha -1 antitrypsin, single radial immunodiffusion assay.

ISCA-ISC-2015-4CS-10-Oral

4, 5-Dihydroimidazoline Based Non-Ionic Gemini Surfactants: Synthesis, Characterization, Physicochemical Properties and Anticorrosion Behaviour in 1N H₂SO₄ Aqueous Solution

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Abstract: The synthesis of novel Gemini surfactants was carried out in two stages in the present research. Initially



Diethylenetriamine was converted into amides by using lauric acid, myristic acid, palmitic acid and stearic acid followed by reaction with 1, 2, 7, 8-Diepoxyoctane to form the targeted Gemini surfactants. The presences of functional groups were determined by FTIR spectra. The surface morphology of synthesized surfactants was characterised by scanning electron microscopy. Surface Tension measurements are used to determine the critical micelle concentration (cmc), the maximum surface excess concentration (Γ_{\max}), Gibbs free energy of adsorption, minimum area per molecule (A_{\min}) at air /water interface (G_{ads}) and other parameters. The inhibition of gemini surfactants on the corrosion of carbon steel (CS) in 1N H₂SO₄ was studied at 30^oC by weight loss method. Performance tests like foaming power and stability, wetting power, emulsifying ability and dispersion capability were studied. Within the same homologues series, expected decrease in critical micelle concentration (cmc) with the increase in hydrophobicity was observed. The cmc values of the gemini surfactant were found to be remarkably low. The results show that foaming power, foaming stability, emulsifying ability and dispersion power are very good. The wetting power of synthesized surfactants is quite better. The synthesized surfactant may be used as emulsifier, dispersing agent and corrosion inhibitor for carbon steel in acidic medium.

Keywords: Gemini surfactant, synthesis, FTIR, SEM, surface activities, performance properties, corrosion inhibition.

ISCA-ISC-2015-4CS-13-Oral

Impact of Surfactants on Water Bodies

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Abstract: Synthetic surfactants have their impact on hydrobionts. Sometimes they are considered as major pollutants but frequently they are put at the end of the list of the traditional priority substances being discussed. Most synthetic surfactants are considered to be substances of class-4 permissible concentrations of Chemical Substances in water of Aquatic Objects of Household and Social Amenities Water Use 1998. Study of biological effects caused by synthetic surfactants in their impact on hydrobionts is required because these substances are contained in sewage and polluted waters discharged by practically all industries, in domestic and community sewage, in preparation for dispersion of oil in oil spills and in consequences of emergencies at water bodies. The content of synthetic hazard is of the lowest rank. More hazardous are included into class 1 and class 2 hazards. Maximum surfactants in sewage waters of industrial enterprises reaches values as high as 30 g/l (Stavskaya et al. 1988). The mode of action of surfactants depends on the cmc, the critical micelle concentration. The critical micelle concentration is a narrow range where the physical properties of the solution of a surfactant abruptly change due to the cooperative formation of micelle in the bulk solution. The cmc in this narrow concentration range depends on the physical property observed. The existence of cmc indicates the aggregation of monomer units in solutions. This cmc can be found experimentally but to get how many units are aggregated is quite difficult. The number of aggregation can be found out using Fuoss and Krauss theory (given for simple electrolytes) in which the use of physical property conductivity or conductance measurements is done. Fuoss and Krauss theory can be successfully applied for surfactants Quaternary Ammonium Salts or more precisely to Tetrabutyl Ammonium Hydrogen Sulphate (TBAHS) and Tetrabutyl Ammonium Chloride (TBAC).

Keywords: Surfactants, critical micelle concentration, TBAHS, TBAC.

ISCA-ISC-2015-4CS-14-Oral

Assessment of Ground Water Quality in and around Rajgurunagar, District- Pune, Taluka –Khed, Maharashtra, India

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Abstract: Ground water samples collected from different localities in and around Rajgurunagar, Taluka-Khed, District-Pune, Maharashtra, were analyzed for their physico- chemical characteristics. This analysis result was compared with the WHO and ICMR standards of drinking water quality parameters with the following water quality parameters namely pH, Electrical conductivity(EC) Total Dissolved Solid (TDS), Calcium (Ca), Magnesium (Mg), Total Hardness (TH), Chloride (Cl-), Carbonate (CO₃-2), Bicarbonate (HCO₃-), etc., The usefulness of these parameters in predicting ground water quality characteristics were discussed. Thus an attempt has been made to find the quality of ground water in and around Rajgurunagar, suitable for drinking purposes or not.

Keywords: Ground water, physico-chemical analysis, TH, TDS,



ISCA-ISC-2015-4CS-15-Oral

Enchantment of The Shelf Life of Edible Oil without Using Synthetic Antioxidants

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Abstract: Enhancement of the shelf life of soybean edible oil by using sodium sulphite was carried out in the present research. Two samples 'A' and 'B' of soybean crude oil was taken for acid degumming. The peroxide value of 'A' and 'B' before acid degumming was determined. The both samples 'A' and 'B' was degummed by using Phosphoric acid (2ml) but sample 'B' add sodium sulphite in addition to 0.1% Phosphoric acid. Peroxide value of both the samples was determined after ten days. The result shows that the peroxide value of sample 'A' was increased by 0.5 than initial value and peroxide value of sample 'B' was decreased by 0.06 than initial value. This means that shelf life of edible oil was increased by addition of sodium sulphite.

Keywords: Edible Oil, Shelf Life, Acid Degumming, Peroxide Values.

ISCA-ISC-2015-4CS-16-Oral

Antibacterial Properties of *Psidium guajava* Leaves, Fruits and Stems against Various Pathogens.

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Abstract: The present study was designated to evaluate the antibacterial activities of ethanolic, methanolic, ethyl acetate and hot water extract from leaves, fruits and stems of *Psidium guajava*. Compare to all parts, the stems were showing best result and the zone of inhibition was obtained 28.5 mm. The antibacterial activities of the extracts against bacteria were tested by using agar well diffusion assay and the MIC values were determined by broth dilution assay. The ethanol and hot water extracts showed least antibacterial activity as compared to methanolic and ethyl acetate extracts. The least concentration were obtained 0.33mg/ml in ethanolic extract of stems, 1.98 mg/ml in ethyl acetate extract of stems and 0.05 mg/ml in methanolic extract of stems against *P. aeruginosa*. The antibacterial compound mainly found in *Psidium guajava* were tannins, phlobatannins, saponins, terpenoids, alkaloids and poly phenols.

Keywords: Antibacterial activities, ethanolic, methanolic and ethyl acetate plant extract, MIC, zone of inhibition.

ISCA-ISC-2015-4CS-17-Oral

Application of suggested formula (ADJ) of specific refraction in binary (Ethanol+Water) mixtures at 293.15 K and 313.15 K

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Abstract: Densities and Refractive indices of pure solvents and solutions of different percentage of 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80% and 90% (v/v) Ethanol +Water mixtures were measured at 293.15K and 313.15K. Specific Refraction calculated by using Lorentz and Lorenz (L-L) and suggested formula (ADJ). On comparison the specific refraction values of the suggested formula (ADJ) for the binary mixtures found in good results.

Keywords: Densities, refractive indices, binary mixtures, Lorentz and Lorenz (L-L), Andher Desai and Joshi (ADJ).

ISCA-ISC-2015-4CS-19-Oral

Synthesis, Characterization, Coordination behaviour and Biological activity of Metal complexes with Schiff bases derived from isatin / substitution isatin

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Abstract: A series of new coordination complexes involving iron (iii) and cobalt (iii) complexes have been prepared with tridentate Schiff bases derived by condensing isatin/ N-methyl isatin/ N-methylol isatin with 2-amino phenol/2-



amino benzenethiol in methanol in absence/presence of NaOH and product of type $[M(L)_2]Cl$, $Na[M(L)_2]$ ($M = Fe(III)$ or $Co(III)$); $LH =$ Schiff bases Derived from isatin/ N-methyl isatin/ N-methylol isatin with 2-amino phenol/2-amino benzenethiol) have been isolated. The overall geometry and stereochemistry of these complexes were elucidated by elemental analysis, magnetic susceptibilities, electronic spectra, 1H NMR and molar conductance measurement. All the trivalent ion complexes appear to be 1:1 electrolytes. The ligands and their metal complexes have been screened in vitro for antifungal and antibacterial activities. The results indicate that in all complexes antifungal and antibacterial activities of ligands increases on complexation due to chelation.

Keywords: Isatin, Schiff bases, metal complexes, spectral analysis, biological activity.

ISCA-ISC-2015-4CS-20-Oral

Amide Derivatives of Substituted Isoxazole as Potential Pharmaceutical Activity

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Abstract: Isoxazole is a five membered heterocyclic compound having various pharmacological actions. The great interest associated with isoxazoles and their derivatives is based on their versatility as synthetic building block, their latent functionalities as enamines, 1,3-dicarbonyl compounds, α -amino alcohols, and α -hydroxy nitriles have been widely exploited for the synthesis of other heterocyclic and complex molecules. This review paper will comprise of synthesis of amide analogs of isoxazole. More emphasis was given to critical discussion on the synthetic strategy of isoxazole derivative, their utility as building blocks in their transformation to more biologically potent molecules. Results of isoxazole derivatives and their substitutions effect on diverse biological activities will be discussed.

Keywords: Isoxazoles, antioxidant, antimicrobial, analgesic, anti-platelet, anti-HIV.

ISCA-ISC-2015-4CS-21-Oral

Electrochemical studies, Synthesis and Cyclic Voltammetric Reduction of 3-hydroxy Acetophenone Semicarbazone at Glassy Carbon Electrode

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Abstract: Electrochemical reduction behavior of 3-hydroxy acetophenone semicarbazone is studied on glassy carbon electrode in CH_3OH -Britton Robinson buffer at pH 3, 5, 7 and 9 and Phosphate buffer (pH 5.8,8) using cyclic voltammetry. Single irreversible reduction wave is observed due to the reduction of semicarbazone moiety. The effect of change in pH and sweep rate is evaluated. The electrode process is found to be irreversible and diffusion controlled. Kinetic parameters are calculated from cyclic voltammetric measurements.

Keywords: 3-hydroxy acetophenone semicarbazone, GC electrode, B-R buffer, phosphate buffer, and cyclic voltammetry.

ISCA-ISC-2015-4CS-22-Oral

Fabrication and Characterization of Completely Biodegradable Copolyester-Chitosan Blends: Spectroscopic and Mechanical Properties

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Abstract: Chitosan was prepared from shells of locally available fresh water prawns with variation of sodium hydroxide concentration and reaction time. Two different samples of chitosan were prepared by deacetylation process under different conditions from chitin; a) treating chitin with 40% NaOH solution for 30 min (the sample being named as CS40), b) treating chitin with 70% NaOH solution for 15 min (the sample being named as CS70). The prepared biopolymer (CS40 and CS70) was melt-mixed with a commercially available biodegradable polymer, the poly(butylene adipate-co-terephthalate) [PBAT]. The blend films were characterized by Fourier transform infrared (FTIR) spectroscopy, tensile testing and depth sensing microhardness measurement. Characteristic absorption bands of polymer were observed in



FTIR spectra of the blends while the bands corresponding to chitosan were masked indicating that the preferential segregation of PBAT towards the surface. Tensile result showed that elongation at break drastically decreased by adding little amount of chitosan. Microhardness result showed that hardness and young's modulus of PBAT gradually increased with the increase of chitosan content in the blends. The residual indentation depth of the blends is higher than the pure PBAT indicated that the plastic deformation caused by chitosan.

Keywords: Fabrication, characterization, biodegradable, Copolyester–Chitosan Blends, spectroscopic, mechanical.

ISCA-ISC-2015-4CS-23-Oral

Synthesis of some new Chalcone derivatives containing [1, 3, 4] oxadiazole moiety as Antimicrobial agents

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Abstract: Some new and biologically active chalcone derivatives were synthesized by Claisen Schmidt condensation of different benzaldehyde having [1,3,4]oxadiazole moiety with substituted acetophenone. The structure of the synthesized compounds has been established on the basis of IR, ¹HNMR and elemental analysis. The compounds have been evaluated for antibacterial activity against *Staphylococcus aureus*, *Pseudomonas aureginosa* and antifungal activity against *Aspergillus flavus*, *fusarium oxysporum*.

Keywords: Chalcone, oxadiazole, antifungal activity, antibacterial activity.

ISCA-ISC-2015-4CS-01-Poster

Oxidation stability of lubricant base stocks by Rotary Bomb Oxidation Test (RBOT) and Pressurised Differential Scanning Calorimetry (PDSC)

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Abstract: Oxidation is the prime cause of lubricant degradation and reduction in effective service life of lubricants. It is the prime reason for numerous lubricant problems such as viscosity increase, sludge and sediment formations, varnish deposit, filter plugging, loss in foam control, rust formation and corrosion, etc. As lubricants are either pure base oils (straight oils) or the combination of base oil (major) and performance additives (minor), oxidation stability of base oils is one of the most important parameters for selection of base oil for formulation of lubricants in demanding application. In current study, oxidation stability of two mineral base oils, representing API Group-I (BO-I) and Group-II (BO-II), are studied by rotary bomb oxidation test (RBOT) and pressurised differential scanning calorimetry (PDSC). RBOT test utilizes oxygen-pressured vessel to evaluate the oxidation stability of oils. The test oil, water, and copper catalyst coil, contained in a covered glass container were placed in a vessel equipped with a pressure gage. The vessel was charged with 99.5% pure oxygen to a gauge pressure of 620 kpa (90 psi, 6.2 bar), placed in a constant temperature dry bath taken at 150°C, and rotated axially at 100 rpm at an angle of 30° from the horizontal. The number of minutes required to reach a specific drop in gage pressure 175 kpa (25.4 psi, 1.75 bar) is the oxidation stability of the test sample. RBOT time of the base oil BO-I was found to be 34 minutes and that of BO-II as 14 min. Sulphur in the BO-I base oil is 0.69 % wt whereas that in BO-II is less than 0.01 % wt. Sulphur in the heterocyclic hydrocarbon form acts as antioxidant which helps to improve oxidative stability and hence RBOT time of BO-I is greater than that of BO-II. The sulphur containing materials acts by peroxide decomposing mechanism which prevents hydroperoxide decomposition into free radicals. Aliphatic hydrocarbons are more oxidative stable than aromatics, however moderate concentration of aromatics (7.6% in BO-I and 0.4% in BO-II) helps to trap the radicals or oxidation products derived from aromatic compounds are responsible for inhibition. PDSC oxidation stability test was conducted with Tzero PDSC cell. PDSC measures the difference in heat flow rate (mW = mJ/sec) between a sample and inert reference as a function of time and temperature. Aluminium and copper sample pans were used in current study. The PDSC test was conducted by constant heating rate program (10°C/min up to 350°C). The onset and peak temperature for BO-I with aluminium pan was 247.98°C and 279.42°C. It was 210.85°C and 239.89°C respectively with copper pan. The onset and peak temperature for BO-II with aluminium pan was 197.66°C and 209.6°C. It was 179.39°C and 196.5°C respectively with copper pan. The relative oxidation stability of two base oils observed in RBOT and PDSC was compared with the composition of base oil to interpret the effect of composition on overall stability of the base oils. Study shows that, optimum concentration of



sulphur in the form of heterocyclic compounds and hydrocarbon composition (paraffins, naphthenes and aromatics) is essential for the oxidation stability of the base oil. Study also indicates the catalytic effect of copper (transition metal) on the oxidation reaction in comparison with aluminium as pan material in PDSC. Group-I (BO-I) base oil shows better oxidation stability as compared to Group-II (BO-II) base oil.

Keywords: Oxidation stability, base oil, lubricants, Rotary Bomb Oxidation Test (RBOT), Pressurised Differential Scanning Calorimetry (PDSC).

ISCA-ISC-2015-4CS-02-Poster

Development of Stability indicating HPLC method to estimate Ranitidine HCl from Tablet formulations using DMAIC approach

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Abstract: The present study describes the development of a comprehensive science and risk based HPLC method and subsequent validation for the analysis of Ranitidine active pharmaceutical ingredient (API) using DMAIC approach. A simple, specific and accurate reverse phase liquid chromatographic method has been developed for the estimation of Ranitidine HCl from tablet formulation. The drug is official with Indian Pharmacopoeia, United States Pharmacopoeia British Pharmacopoeia, however these compendial procedures does not involve aqueous solvent as diluent. The separation was carried out using 25 cm x 4.0 mm packed with octadecylsilane bonded to porous silica (10 μ m) column and the mobile phase consisted of (methanol: ammonium Acetate- 85:15) in isocratic mode. The flow rate was 1.00 ml/min and effluent was monitored at 322 nm. The new method for the assay of Ranitidine hydrochloride tablet has been developed and validated as per ICH guidelines for Linearity, accuracy, precision, robustness, and specificity. The described is linear (Correlation coefficient is 0.999). The method is found to be accurate between concentrations 80 % to 120 % of target concentration (112 μ g/mL) of Ranitidine. The precision, ruggedness and robustness values were also within the prescribed limits (<1% for system precision and <2% for other parameters). Chromatographic peak purity results indicated the absence of co eluting peaks with the main peak of Ranitidine. The method was found reproducible as per the predefined criteria. None of the commercial sample was found to be outside the compendial limits of 90.0% to 110.0% of the claim amount. Unpaired t-test is applied to Percent assay obtained by IP and optimized method. As per data obtained from unpaired t-test, there is no statistical significant difference between two methods at 95% confidence interval hence both the methods are considered statistically equivalent. The present work is a contribution to green analytical chemistry. Method is based on modification of Ranitidine Hydrochloride tablet IP assay method for organic solvent replacement with aqueous solvent. Solvent reduction is achieved by replacing the diluent (methanol: ammonium Acetate - 85:15) in IP method with water. Further to present work, solvent replacement can be achieved by identifying such methods wherein organic solvents are used for extraction.

Keywords: Ranitidine HCl, method development, HPLC, Indian Pharmacopoeia.

ISCA-ISC-2015-4CS-03-Poster

Evolution of Platinum based Drug as Metallonuclease and Anticancer agent

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Abstract: The square planar platinum(II) complexes of the type $[Pt(L^{1-6})(Cl)_2]$ (where L^{1-3} = thiophene-2-carboxamide derivatives and L^{4-6} = thiophene-2-carbothioamide derivatives) have been synthesized and characterized by physicochemical, spectroscopic methods like elemental analysis, molar conductivity, electronic spectra, magnetic susceptibility measurements, ¹H NMR, LC-MS, TGA and IR techniques. Synthesized compounds have been evaluated for their *in vitro* antimicrobial activity against two Gram (+ve), i.e. *Staphylococcus aureus* (MTCC 3160), *Bacillus subtilis* (MTCC 7193), and three Gram (-ve), i.e. *Serratia marcescens* (MTCC 7103), *Pseudomonas aeruginosa* (MTCC P-09), and *Escherichia coli* (MTCC 433) bacterial species. Characteristic binding constant (K_b) and binding mode of complexes toward calf thymus DNA (CT-DNA) have been determined using absorption titration and viscosity measurements, inferring the partial intercalative mode of binding. The binding constant (K_b) is found in the range of 1.0×10^5 - 4.75×10^5 . The nuclease profile of complexes to break the pUC19 DNA has been examined employing gel electrophoresis technique and result shows that the synthesized complexes cleave the DNA more efficiently compared to their respective metal salt. Cytotoxicity profile of the complexes on the brine shrimp shows that all the complex exhibit



noteworthy cytotoxic activity with LC_{50} values ranging from 7.87 to 15.94 $\mu\text{g mL}^{-1}$. The complexes have been evaluated for apoptotic potential in human colon carcinoma cells (HCT 116) and determined half maximal inhibitory concentration (IC_{50}) value of complexes by MTT assay.

Keywords: S, O/S, S-donor Platinum(II) complexes, anti-malarial, hydrodynamic chain length study, Gel mobility shift assay, Apoptotic activity.

ISCA-ISC-2015-4CS-04-Poster

Artificial Metallonucleases, Antituberculosis and Antimicrobial agents based on Palladium (II) complexes

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Abstract: New complexes of Pd(II) with thiophene derivatives were synthesized and deliberately investigated. All synthesized complexes were characterized by elemental analysis, electronic spectra, FT-IR, LC-MS, thermal gravimetric analysis and conductivity measurement. Antibacterial study was carried out against pathogenic bacteria like *S. aureus*, *E. coli*, *B. subtilis*, *S. marcescens* and *P. aeruginosa*. Complex II is found to be more effective on *B. subtilis*, *E. coli*, and *P. aeruginosa* than the other ones. Toxic property of synthesized complexes was determined using *in vitro* Brine shrimp (*Artemia cysts*) lethality bioassay technique. *In vivo* cytotoxic activity was performed using the yeast *Schizosaccharomyces pombe*. The complexes were screened for DNA binding study using UV-Visible absorption titration and relative viscosity measurement study. Hypochromism with bathochromic shift in absorption titration and increase in viscosity indicate the intercalative binding of complexes with CT-DNA. DNA cleavage study of the complexes was performed by gel electrophoresis experiment using pUC19 DNA. All complexes are very effective artificial metallonucleases, which promote the cleavage of DNA from supercoil(SC) to open circular(OC) form. Anti tuberculosis activity was carried out using *Mycobacterium tuberculosis* H37RV bacteria by L.J. Medium conventional method.

Keywords: *In vitro* and *in vivo* cytotoxicity, artificial metallonuclease, intercalation, thiophene derivative, antituberculosis agents.

ISCA-ISC-2015-4CS-07-Poster

Polarographic Determination of Paracetamol by Calibration Method using Hydrochloric Acid and Different Maxima Suppressors

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Abstract: Paracetamol is a common analgesic and antipyretic drug their determination in pharmaceuticals is of paramount importance, since an overdose of paracetamol can cause toxic effects. The aim of the present study is to do polarographic determination of paracetamol by calibration method using hydrochloric acid and different maxima suppressors such as fuchsin, methyl red, thymol blue and bromocresol green. According to the Ilkovic equation, with all other factors constant, $i_d = kC$ where k is a constant defined by Ilkovic equation. This relation is the foundation of quantitative polarographic analysis. Calibration method has been developed and applied for the determination of paracetamol present in some synthetic as well as medicinal samples using selected maxima suppressor-supporting electrolyte system. Polarograms of all system were recorded on D.C. Recording Polarograph using Omniscrite recorder between 200 to 1300 mV using Rotating Platinum micro Electrode as anode and Saturated Calomel Electrode as cathode. The oxidation of paracetamol at rotating platinum electrode is irreversible. Results obtained with synthetic as well as medicinal samples are in good agreement with the quoted values. The method is precise as indicated by low values of standard deviations. It is possible to carry out a polarographic analysis even in the presence of colouring matters and comparable amounts of other ingredients.

Keywords: Paracetamol, hydrochloric acid, fuchsin, methyl red, thymol blue, bromocresol green.



ISCA-ISC-2015-4CS-08-Poster

Potentiometric analysis of Dimethyl Sulfoxide, Di-n-octyl Sulfoxide, Diphenyl Sulfoxide, p-di-tolyl Sulfoxide and Indium Complex of Diphenyl Sulfoxide in Non Aqueous Solvents

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Abstract: In medicine Dimethyl Sulfoxide is predominantly used as a topical analgesic, a vehicle for topical application of pharmaceuticals, as an anti-inflammatory, and an antioxidant. This paper deals with Potentiometric Analysis of Dimethyl Sulfoxide, Di-n-octyl Sulfoxide, Diphenyl Sulfoxide, p-di-tolyl Sulfoxide and Indium Complex of Diphenyl Sulfoxide in Non Aqueous Solvents such as sulphuric acid, phosphoric acid, glacial acetic acid and acetic anhydride. In present analysis two types of potentiometric titrations Oxidation-Reduction and Acid-Base titrations in nonaqueous solvents have been performed, and interest is focused upon changes in the e.m.f. of an electrolytic cell as a titrant of precisely known concentration is added to a solution of the analyte. OSAW direct reading potentiometer was used to carry out redox titrations using platinum and saturated calomel electrodes. The pH-titrations were made with an ELICO LI-10 pH-meter in conjunction with Glass (EM-42) and calomel (ER-70) electrodes. An end point is located more precisely by plotting successive values of the rate of change of cell e.m.f. vs each increment of titrant in the vicinity of the inflection point. The position of the maximum on the first derivative curve corresponds to the inflection point on the normal titration curve. Fairly accurate results with high degree of precision are observed.

Keywords: Dimethyl Sulfoxide, Di-n-octyl Sulfoxide, Diphenyl Sulfoxide, p-di-tolyl Sulfoxide, Indium Complex of Diphenyl Sulfoxide.

ISCA-ISC-2015-4CS-10-Poster

Identification of Impurities Related to 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol by Using Some Analytical Techniques

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Abstract: Unknown three impurities related by the production of 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol bulk drug during the process was detected by high performance liquid chromatography (HPLC). It was subjected to ion trap mass spectroscopy for initial determination of mass for identification. It was difficult to find the structure with only ion-trap mass spectra and mass/mass since, it is having a unit mass determination. It became essential to isolate the impurity using preparative chromatographic studies for further. The preparatively isolated impurity was subjected to a high resolution of accurate liquid chromatography mass spectroscopy (LC-MS) for determination of molecular formula, which gave a highly confident and accurate data for structure identification. It assumed that, structure was definitely confirmed by ¹H NMR and ¹³C NMR was proposed to be 1, 1-bis-(7-chloro-4-hydroxy-3-quinolyl)-ethane dimer of 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol. This 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol Dimer impurity was not been before reported in any of the analytical literature pertaining to 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol. A fast Acquity H-class slope method with runtime of 14.0 minutes was developed for Quantitation a C18 Hypersil gold column was used for chromatographic separation and authorized for parameters such as precision, accuracy, linearity and range, robustness. The limit of detection (LOD) established for this drug Dimer impurity was found to be 0.0182 ppm i.e. 0.012% and limit of quantification (LOQ) was found to be 0.0598ppm respectively.

Keywords: 4-[(7-Chloroquinolin-4-yl) amino]-2-(diethylaminomethyl) phenol drug, HPLC, Acquity UPLC H-class, Ion Trap MS, NMR, structural interpretation.

ISCA-ISC-2015-4CS-12-Poster

A Study of Natural Adsorbents for Removal of Sulphate ion in Wastewater

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Abstract: The water is one of the nature's free gifts to the human beings. It is an essential for survival of each organism.



The demand for drinking water is increasing day by day and hence preventive measures are to be taken to prevent the pollution and contamination of water. Water pollution by anion is not only a public health concern, therefore removal of these ions from waste water before the process of discharging is very important sulphate (SO_4^{2-}) ion is widely distributed in industrial wastewater. Adsorption has been used as a suitable water treatment process to remove Sulphate ion. Chemical precipitation, ion exchange, reverse osmosis process, electro dialysis, ultra filtration, coagulation–flocculation, flotation and adsorption processing techniques are used to reduce the concentrations of heavy metals in industrial wastewater. Baobab fruit shell can be used as a cost effective adsorbent for the removal of Sulphate ion from aqueous solutions in the treatment of industrial wastewater.

Keywords: Wastewater, adsorbent, activated carbon, pollution, removal, contamination.

ISCA-ISC-2015-4CS-13-Poster

Analysis of Chlorpyrifos extracted from Urine sample using Thin Layer Chromatography

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Abstract: Chlorpyrifos is considered as organophosphorous poison. It is generally used as insecticide to control a variety of insects in vegetables and fruits. It is also used for the control of household pests, mosquitoes and in animal houses. Routinely it is analyzed by UV/Vis, Gas Chromatography (GC), and High Performance Liquid Chromatography (HPLC), but cost of analysis is very high. An attempt has been made to develop a new method for analysis of chlorpyrifos, using Thin Layer Chromatography (TLC) technique which is inexpensive, rapid, and reliable. Chlorpyrifos was extracted from urine sample using solvent extraction methods and then identified on TLC plates using benzene: hexane (8:2) as solvent system. For detection on developed plates, palladium chloride, silver nitrate, iodine vapour and bromophenol blue were used which successfully increased the sensitivity without dispensing with the simplicity of the method. The retention factor (R_f) of different urine samples and chlorpyrifos was compared which showed a minor difference in R_f values. The method developed for analysis of chlorpyrifos using TLC in urine sample is very cheap and can be performed in any laboratory in a very simple way.

Keywords: Chlorpyrifos, organophosphorous, TLC, solvent system, retention factor (R_f).

ISCA-ISC-2015-4CS-14-Poster

Electrochemical behavior of Cd II with Amino acids and Triazole in aqueous at dropping Mercury electrode

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Abstract: Amino acids are biologically active compounds and essential for human being and their reactions with metal have relevance to bio-system, they have good chelating ability with metal ions and play an important role in biology and pharmacy. The study mixed ligand complexes of metal like Cd II with amino acids and triazole play an important role in biological activity of such drugs because Cd II is found in human serum. The reduction of Cd II complexes at DME in aqueous medium has been studied with some amino acids (Valine, Serine and Aspartic acid) and triazole. In most cases a single reduction wave was obtained, the plot $\log i_d$ Vs $\log h$ and $\log i_d$ Vs concentration were linear passing through the origin indicating diffusion controlled reduction. Where i_d is diffusion current and h is the height of mercury column. The value of slope of straight line corresponding to $E_{d,e}$ Vs $\log i/(i_d-i)$ indicate reversible nature of reduction. The $E_{1/2}$ values is regularly shifted towards negative side and i_d values decreased with increasing concentration of ligands their by showing complex forming. The simple systems were studied by the method of Deford and Hume; however the mixed complexes were studied using Scahap and McMaster's method. The value of stability constant is determined by polarographic method.

Keywords: Polarography, stability constant and ligands.



ISCA-ISC-2015-4CS-15-Poster

Demonstration of *Diamond and Whitney's* model of ion exchange selectivity using the two commonly used laboratory grade resins Amberlite IRA-400 and Amberlite IR-120 by application of Potentiometric Technique

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Abstract: The present study deals with laboratory level demonstration of *Diamond and Whitney's* model of ionic selectivity using the two commonly used resins Amberlite IRA-400 and Amberlite IR-120. The experiment was performed by using simple potentiometric technique employing platinum / silver electrodes as an indicator electrodes and calomel electrode as a reference electrode. The resin Amberlite IRA-400 was a strongly basic anion exchange resin in Cl⁻ form; while Amberlite IR-120 was a strongly acidic cation exchange resin in H⁺ form. The resins in Cl⁻ form were equilibrated separately with Br⁻, I⁻, SO₄²⁻ and C₂O₄²⁻ ions solution of known initial concentrations; while the resins in H⁺ form were equilibrated separately with Na⁺, K⁺, Mg²⁺ and Ca²⁺ ions solution of known initial concentrations. The solution was equilibrated for 3h using mechanical stirrer when H⁺/Na⁺, H⁺/K⁺, H⁺/Mg²⁺, H⁺/Ca²⁺, Cl⁻/Br⁻, Cl⁻/I⁻, Cl⁻/SO₄²⁻ and Cl⁻/C₂O₄²⁻ ion exchange reactions take place. After 3 h the Cl⁻ and H⁺ ions exchanged in the solutions were determined by potentiometric titrations against standard AgNO₃ and NaOH solutions respectively. The exchange capacities of the above resins were also determined by standard methods. Depending on the Cl⁻ and H⁺ ions exchanged in the solution, the equivalent amount of univalent (Na⁺, K⁺, Br⁻ and I⁻) ions and bivalent (Ca²⁺, Mg²⁺, SO₄²⁻ and C₂O₄²⁻) ions get exchanged on the resin. From the knowledge of initial and final concentration of the above univalent and bivalent ions in the solution, amount of these ions exchanged on the resins, concentration of Cl⁻ and H⁺ ions exchanged in the solution and ion exchange capacities of the resins, the equilibrium constant (*K*) values for the above reactions were calculated. Such *K* values were determined by performing the above experiment in the temperature range of 30.0 to 40.0 °C. From the *K* values calculated at different temperatures, the enthalpy values of the above ion exchange reactions were calculated. The enthalpy value of H⁺/Na⁺, H⁺/K⁺, H⁺/Mg²⁺ and H⁺/Ca²⁺ exchange reactions were calculated to be 19.9, 15.0, 10.6 and 8.8 kJ/mol. Based on these enthalpy values it can be demonstrated that the ionic selectivity of resins in H⁺ form increases in the order of Na⁺ < K⁺ < Mg²⁺ < Ca²⁺. Similarly the enthalpy values of Cl⁻/Br⁻, Cl⁻/I⁻, Cl⁻/SO₄²⁻, Cl⁻/C₂O₄²⁻ exchange reactions were calculated to be 35.6, 29.4, 18.7 and 14.3 kJ/mol. Based on these enthalpy values it can be demonstrated that the ionic selectivity of resins in Cl⁻ form increases in the order of Br⁻ < I⁻ < SO₄²⁻ < C₂O₄²⁻. From the results of our study it is possible to demonstrate the well known *Diamond and Whitney* model at laboratory scale level according to which that the selectivity of the ion exchange resins increases with ionic size as well as with increasing charge on the exchangeable ions in the solution.

Keywords: Laboratory grade resins; Amberlite IRA-400; Amberlite IR-120; potentiometric technique; enthalpy; univalent ions; bivalent ions; ionic selectivity; ion exchange resins; Diamond and Whitney model.

ISCA-ISC-2015-4CS-16-Poster

Chemical Composition of Essential oil from leaf of *lantana camara l.* Distributed in Kirtipur, Nepal

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Abstract: *Lantana Camara* is a widely spread weed found in more than 60 countries of the world, originated in America. All parts of the plant are being used for different purposes. The main objective of this research is to find out the chemical composition of the oil from its leaf which may benefit for further investigations on its possible uses as medicines, drugs, etc. 30 essential oils were found in leaves of *Lantana Camara* as analyzed by GC-MS technique. The oil was collected by hydro distillation of the leaves. Main constituents present in the oil were Davanone D [14.03%], E Caryophyllene [13.20%], Bicyclogermacrene [9.81%], alpha Humulene [7.33%], 1,6,10-Dodecatrien-3-ol, 3,7,11-trimethyl-, (E)- [6.82%], 2,6,10,14-Hexadecatetraen-1-ol, 3,7,11,15-tetramethyl-, acetate, (E,E,E)- [4.58%] which were in accordance to other research works.

Keywords: *Lantana camara*, chemical composition, Davanone D, caryophyllene, essential oil.



5. Computer and Information Technology

ISCA-ISC-2015-5CIT-01-Oral

A Survey of Online Teaching, Learning and Virtual classroom solutions for E Vani: Architecture, Applications and Approaches

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Abstract: Advances in information and communication technologies are enabling educational institutes to address lack of qualified and experienced teacher's especially rural area where students are geographically dispersed and come from different backgrounds through digital means of online education and virtual collaboration. This paper gives a survey of online education tools and technology and virtual class room solutions, which help general readers, have an overview of the online education including the definition, architecture and applications. Case study of E Vani is presented. E Vani is project launched by Director Technical Education to organize distant education classes from S V Polytechnic Bhopal to its affiliated polytechnic colleges all over state, to address shortage of competent faculty. The issues, existing solutions and approaches are presented. In addition, the future research directions of On Line Education Virtual Class Room solutions and educational data mining are discussed to make E VANI effective and efficient.

Keywords: Survey, online, teaching, learning, virtual, classroom, solutions, E Vani, architecture, applications and approaches

ISCA-ISC-2015-5CIT-03-Oral

Application of Cloud Computing in Governance: An Overview

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Abstract: A typical comprehension of "cloud computing" is constantly advancing, and the phrasing and ideas used to characterize it frequently need clearing up. "Cloud computing" was begat for what happens when services and applications are moved into the internet that is cloud. Cloud processing is not something that abruptly seemed overnight; in some structure it may follow back to a period when computer system frameworks remotely time-shared registering assets and applications. All the more presently however, cloud computing alludes to the a wide range of sorts of applications and services being conveyed in the cloud and the way that, much of the time, the devices used to get to these services don't require any unique applications. With the help of cloud computing, you can utilize programming conveyed through the Internet on the program with no installation, have an application on the Internet, set up your own storage of remote file and database framework and that's just the beginning. Cloud itself is a virtualisation of resources like servers, networks, applications, services and data storage) and allows on-demand access for the users. Due to numerous advantages of cloud computing - government sector is also affected. In this paper we give an overview, how cloud computing grows in government sector across the globe.

Keywords: Cloud, computing, application, governance, virtualisation, Services, Internet.

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6. Earth and Geology

ISCA-ISC-2015-6EG-01-Oral

GIS-based Food hazard Mapping: A case study in Krishnai river basin, Assam, India

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Abstract: Flood Hazard Mapping is a vital component for appropriate land use planning in flood-prone areas. The creation of flood hazard maps would promote greater awareness about the risk of flooding. Taking Krishnai river basin of Assam as an example and using available data from government agencies, a composite hazard index has been devised incorporating variables of flood frequency, drainage density, slope, population density, transportation networks, access to potable water, and availability of high ground and maximum risk zones were mapped accordingly. Therefore an attempt has been made in this paper with objectives to produce flood hazard map based on climate, geomorphology, hydrology for flood preparedness, and emergency response and propose an integrated flood management (IFM) that can be used for to promote sustainable flood risk management measures. Geographic Information Systems (GIS) are frequently used to produce flood hazard maps. They provide an effective way of assembling information from different maps and digital elevation models. The extent of flooding can be calculated by comparing local elevations with extreme water levels using GIS. It can support planning and development by identifying high risk locations and steering development away from these areas.

Keywords: GIS, flood hazard, composite index, flood management

ISCA-ISC-2015-6EG-02-Oral

Seismological Trends in Indian Subcontinent

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Abstract: Earthquakes are the most perilous natural events that leave their imprint on geological, ecological as well as socio-economic aspects, as measured on the Richter scale. Earthquakes are generated due to sudden release of energy from inside the earth's crust triggered by the tectonic activities, where rock masses move in relation to one another. The movement and straining of rock masses against one another developing numerous fractures or slips. These structures are designated as geologic faults. The major fault lines are associated with tectonic plates that make up of Earth's crust. At present, the movement of Indian plate continues at the rate of 3.7 cm/year in NE direction to put enormous pressure on the Asian continent and Tibet. The net effect of plate-tectonics forces acting on this geologically complicated region is to compress the parts of Asia including India eastward towards the Pacific Ocean. The tremendous amount of stress build up within the Earth's crust, which are relieved periodically by earthquakes along the numerous faults that shape the landscape in Indian sub continents such as in the year 1819, 1881, 1897, 1905, 1934, 1941, 1950, 2001, 2004 and 2015 some of along the plate boundaries and some are not. Some of the world's most destructive earthquakes in the history are also related to these continuing tectonic processes that began some 50 million years ago when the Indian and Eurasian continents first met. The present paper is an attempt, to find out the seismological trends of major earthquakes (magnitude more than or equal to 7 on Richter scale) on the basis of the nature of movement of Indian plate and also to find out the faceable zones of earthquake occurrences in near future related to Indian subcontinent.

Keywords: Earthquake, plate movement, stress, earthquake magnitude, stress release.

ISCA-ISC-2015-6EG-01-Poster

Fossils of *Mus flynni* (Rodentia, Mammalia) from the Siwalik of Samba district, Jammu and Kashmir, India

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Abstract: Siwalik is the southern part Himalayan foreland basin. The age of the Siwalik Group of rocks is Middle Miocene to Middle Pleistocene and composed of rudaceous arenaceous and argillaceous sediments. The average length and thickness of Siwalik is about 2400km and 6-7km respectively. Field visits have been carried out in the Upper Siwalik



of samba district, Jammu and Kashmir, India. During the field visits a good number of specimen including fragmentary bones, incisors, molars has been dug out /collected from the fossiliferous mudstone horizon under geochronological dated (2.48m.y) volcanic ash beds. Based on the morphological parameters/dental characters the specimens have been identified and belongs to *Mus flynni*, a rodentia mammalian fauna. The age of the collected *Mus flynni* specimen has not younger than 2.48 my as the specimens has been reported from underlying the ash beds.

Keywords: Fossils, *Mus flynni* (Rodentia, Mammalia), Siwalik.

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7. Engineering, Architect and Planning
07.Engineering Sciences-General

ISCA-ISC-2015-7EAP-02-Oral

Improving the Load margin using Network Partitioning Technique

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Abstract: Owing to ever increasing size and load demand, the power system equipments are forced to increase the utilization of existing facilities. Hence, power networks are likely to be operated under greater stress with transmission lines carrying electric power near their limits during peak load periods. As a result, voltage instability in power system has become a major concern in power system operation and planning. Various voltage stability indices (VSIs) are based on normal load flow solutions, the elements of load flow Jacobian matrix can be used to indicate voltage instability problem of a power system. Due to large jacobians the load flow solution becomes complex. To make calculations easy associated with large power networks, a network partitioning is proposed in the present work which is based on voltage variation at each load bus in relation to load variation at the other load busses. The weak area of a power system is identified in the network partitioning; a weak area is defined as the area that contains the critical bus of the power network. The technique of network partitioning for the calculation of voltage collapse margin uses a network partitioning method to convert the multi-bus system into a two-bus equivalent system. After partitioning it gives better load margin in comparison with other voltage stability indices.

Keywords: Voltage stability index, voltage collapse, load flow, network partitioning, load margin.

ISCA-ISC-2015-7EAP-05-Oral

Coordination of Overcurrent Relay for Radial and Parallel feeder Networks

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Abstract: Location of the fault is very important in power systems and its clearance should be carried out very quick with interrupting the supply power to the load. Protection of the devices and their coordination is a crucial part for minimizing the fault. The project is focused on the simulations and analysis of over current relay's coordination for radial and parallel feeder networks. This report provides coordination of overcurrent relays for the radial and parallel feeder networks analyzing the time current characteristics. Observations and setup for radial and parallel feeder network is experimented in the electrical lab. Hardware implementation and study of time of operation of overcurrent relays is compared with the simulation result and findings from the ETAP software. For effective coordination of the relays, pick-up values and time dial setting of the overcurrent relays must be setup up. The change in load is provided through the variable resistor in the laboratory. Backup protection for the primary relay is achieved through the effective coordination time interval between the two relays. Proper relay coordination effectively clears out the fault thus making the protection more reliable. The minimization of fault durations and backup protection to the primary protection is major concern for this report.

Keywords: Overcurrent relay, coordination, radial and parallel feeder, IDMT relay, protective relaying.

7. Engineering Sciences-Mechanical

ISCA-ISC-2015-7EAP-Mech-01-Oral

A comparative study on Low Heat Rejection Engine using two different TBC materials

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Abstract: The energy demand worldwide is increasing at rapid rate; therefore it is necessary as better and effective utilization of available energy by use of appropriate technology at minimum cost. The internal combustion engines have found wide application in transportation. In the present paper, comparative study on low heat rejection engine (LHRE) using two different better thermal barrier coating (TBC) ceramic materials. Considerable efforts were made to develop



advance adiabatic engine and aim to reduce heat lost. Experimental investigation is carried out under different load condition on a twin cylinder, water cool, and constant 1500 rpm speed diesel engine. The plasma spray coating technology is used for TBC for diesel engine combustion chamber. The one set of diesel engine combustion chamber inner walls are thermally insulated by top coat of Metco 204NS yttria stabilize zirconia (YSZ) $(Y_2O_3ZrO_2)$ with thickness of 350 mm and 150 mm thick bond coats of AMDRY 962 Nickle chromium aluminum Yttria(NiCrAl) respectively. The another set of diesel engine combustion chamber top coat by $MgZrO_3Y$ with 350 mm thickness and 150 mm thickness of bond coat by NiCrAlY. The results were compared with base engine and two different LHRE. The $MgZrO_3Y$ coated LHRE found better combustion, performance and emission characteristics. The noise level was found satisfactory without knocking in LHRE.

Keywords: LHRE, TBC, YSZ, Base engine (BE), Engine performance, emission, combustion analysis.

ISCA-ISC-2015-7EAP-Mech-02-Oral

Purification of Biogas using Chemical Scrubbing and application of Purified Biogas as Fuel for Automobile Engines

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Abstract: Energy is an essential prerequisite for accelerated economic development and improved quality of life for citizens of any country. Due to rapid industrialization and urbanization in last few decades, there is a huge pressure on depletable crude oil, coal and other fossil fuels. It has been also observed that use of conventional crude based petroleum fuels are affecting pollution level and their combustion products are found responsible for the global warming and climate change. So the world is looking for green energy alternatives which can reduce green house gases emission. About 70% population of India lives in rural areas and majority of them are engaged in agriculture, animal husbandry and small scale rural industries. In agriculture there is tremendous increase in energy consumption with increased use of tractor, bore well, irrigation pumps and farm machineries etc. Biogas is produced by anaerobic digestion of biomass such as cattle dung, vegetable waste, poultry droppings, industrial waste water, municipal solid waste, and landfill etc. In rural areas cattle dung and vegetable waste whereas in cities and urban area municipal solid waste are available in abundant quantity, from which biogas can be generated. Biogas is constituted of different component gases, the majority of them being methane (CH_4), Carbon Dioxide (CO_2) with traces of Hydrogen Sulfide, and moisture. It is possible to improve quality of biogas by removal of CO_2 , H_2S and enriching its methane content up to the natural gas level. After methane enrichment and compression it can be used as vehicle fuel like compressed natural gas (CNG). Any low cost technique to remove carbon dioxide and hydrogen sulfide from biogas can make biogas a techno-commercially viable fuel. In this paper results obtained during experiments on biogas purification by chemical scrubbing i) dry lime and potassium hydroxide and ii) aqueous solution of Caustic andlime are shown. Also results of on road testing of a vehicle fuelled with purified compressed biogas are shown showing one can purify the raw biogas to convert it to bio CNG which can be used as a vehicular fuel

Keywords: Raw biogas, Biogas enrichment, chemical scrubbing.

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8. Environmental Sciences

ISCA-ISC-2015-8EVS-05-Oral

Green Building and Environment

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Abstract: Today world is facing great challenges to check the further deterioration of the environment. In the race of development, world could not assess the harmful impact on the nature. The degradation of environment is continuous by alarming us and protection of the environment is of utmost importance. The environment deteriorated so much that existence of human being seems to be in danger. Continuous rise in temperature, melting of the Himalayas, thawing of glaciers, disturbances in seasons, increased pollution and deterioration in health are some of the consequences of degraded environment. Green building construction have been found the perfect solution to save environment and hence the human being. Green building is healthier for people living inside it, compared to conventional buildings. "Green building techniques are increasingly becoming the standard within the architecture and construction industries". In the last five years the trend of green buildings has really caught up in India. But this pace is far behind in comparison to developed countries.

Keywords: Environment, deterioration, pollution, degradation, green building.

ISCA-ISC-2015-8EVS-06-Oral

Climate Change impact on Agriculture and Forest in Bangladesh

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Abstract: Bangladesh is an agricultural country. The majority of the population depends on agriculture and natural resources for their food and livelihood. Due to climate change frequency and intensity of disasters have increased, affecting agriculture, forest and rural livelihood. River bank erosion is a serious cause of land loss in Bangladesh. Siltation in the floodplains also contributes towards degradation of land due to flashflood and sediments accumulated from riverbank erosion. The northwestern part is prone to drought mainly due to rainfall variability in the pre-monsoon and the post-monsoon periods. The severity of salinity problem in Bangladesh has increased much due to the intrusion of saline sea water. Forest is a very important renewable resource in Bangladesh. It provides materials like timber, fuel wood, food and primary base for biodiversity. Over one million people directly or indirectly depend on the forest for their livelihood. The forest and agricultural land areas are drastically decreasing annually. Climate change is now a major challenge in Bangladesh. Regional collaborative efforts are inevitable to mitigate adverse impact of climate change.

Keywords: Climate change, natural disasters, impacts, agriculture, forest, Bangladesh.

ISCA-ISC-2015-8EVS-07-Oral

Exploring the Spider fauna of Gomarda Wildlife Sanctuary, Chhattisgarh, India

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Abstract: Aim of the current survey was to explore the spider fauna of Gomarda Wildlife Sanctuary, positioned about 12 km. from Sarangarh, Raigarh district of Chhattisgarh with geographical location 21°25'36.41"N 83° 9'46.92"E, spreads over an area of 277.82 sq. km. This survey was the first approach to prepare checklist of GWS. 120 species representing 49 genera under 16 families, 16 specimens were identified till genera. Families indicating excessive member of species are Thomisidae (24 species under 9 genus) followed by Araneidae (22 species under 8 genus), while family Gnaphosidae indicates highest number of genera (10 genera). The least diversity of species was recorded in Agelenidae, Clubionidae, Eresidae, Filistatidae, Hersiliidae, Nephilidae, Uloboridae.

Keywords: Spider, Gomarda wildlife sanctuary, Raigarh, araneae, Chhattisgarh.



ISCA-ISC-2015-8EVS-09-Oral

Environmental Ethics and Public Awareness

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Abstract: Environmental ethics is a system of ethical values with human reasoning and knowledge of nature towards environment, with this, needs of living beings are fulfilled without compromising the ability of coming generations to meet out their needs. It is a moral relationship between human and environment. Ethics deals with some questions like, what are our obligations to creatures, with whom we share this planet and also to the coming generations. Clean and healthy environment is essential for proper development of society. The whole world is looking forward to adopt various strategies for managing the environment without degrading it further. Some of the broad aspects are public awareness, social movement, continuous research activities, and strict implementation of acts, rules and regulation in relation to environment. For sustainable development we should prevent further damage to our life support system like air, water, land, forest and we must conserve and nurture the biological diversity, gene pool and other resources for long term food security. As environment is interwoven with man's life, environmental awareness is therefore includes knowledge of environmental ethics. In this study 100 persons were interviewed to evaluate their knowledge about environmental ethics. During personal interview it was found that people do have knowledge of environmental ethics but when their activities or implementation comes in question it is not 100% in favour of environment, as human nature is self centered. It is advised to aware public regarding environmental ethics through education at primary, secondary, tertiary levels, professional groups etc. Environmental laws need updating, revision and their effective implementation.

Keywords: Environment, ethics, moral, public awareness, sustainable development,

ISCA-ISC-2015-8EVS-10-Oral

Drinking Water Quality in Western Part of Kathmandu Valley

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Abstract: Drinking water quality is the great public health concern since it is directly linked with human health and environmental protection. The present study was therefore undertaken to assess the quality of drinking water in western part of Kathmandu Valley during pre-monsoon, monsoon and post-monsoon season in 2014. A total of 43 drinking water sources representing shallow well (SW), stone spouts (SS), deep well (DW) and boring (B) water were randomly selected covering ten Village Development Committees. The physico-chemical (Temperature, pH, Electrical Conductivity (EC), Turbidity, Total Dissolved Solid (TDS), Total-hardness, Ca- and Mg-hardness, Chloride, Nitrite, Nitrate, Iron and Arsenic) and bacteriological analysis (Total coliform and Fecal coliform) were performed following standards methods set by APHA (1998). The parasitological examination was done by microscopic examination of samples using centrifuge as well as by floatation technique. The results of physicochemical parameters were statistically analyzed using SPSS 17.0 and the results were also compared with national and WHO guidelines of drinking water. A total of 129 water samples were collected and analyzed representing 43 sources in three different seasons. Analysis of physicochemical parameters indicated that all the water sources were within the national guideline. However, Total coliform (TC) and Fecal coliform (FC) (*Escherichia coli*) bacteria enumerated in groundwater significantly exceeded the drinking water quality standard and observed maximum TC (92.06%) and FC (41.26%) in shallow well compared to other sources. Further microscopic examination of water samples revealed maximum prevalence of *coccidia* (10.85%) followed by *Entamoeba coli* (6.97%), *Ascaris* (6.97%), hookworm (2.32%) and *Oxyuris* (2.32%). Hence, although the drinking water quality of western part of Kathmandu was physicochemically suitable for drinking, the sources were found to be not suitable for drinking unless treatment due to high fecal contamination.

Keywords: Arsenic, parasites, Kathmandu, physio-chemical, water quality.

ISCA-ISC-2015-8EVS-11-Oral

Ecosystem Resilience: Approach and Action

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Abstract: This era in which we are living has been described as Anthropocene. This is an epoch where mankind has emerged as a globally dominant species, reshaping ecosystem and its process which is reflected in global and local canvas. A fundamental feature of this age is disappearance of capacity or adaptive, natural renewal of ecosystem- "The



resilience". In these days human activities have invariably lead to loss of resilience of ecosystem. What is needed today is resilience based approached of human stewardship to protect rapidly deteriorating natural resource base. Traditional ecological knowledge (TEK) has played a significant role in conservation and sustainable use of natural resources at particular piece of land since time immemorial. Local people in different roles as gatherers, herbalist, agriculturists, fishers, vaidyas, medicine man, herders have managed and utilized the living resources of that area judiciously and sustainably. With their knowledge and practices, they have been able to protect and save ecosystem for generation without comprising the interest of future generations. TEK is important for its potential to design more effective conservation for biodiversity and for ecological system in general. TEK is cumulative volume of knowledge and belief handed down through generations by cultural transmission about the relationship of living being with one another and with their surrounding environment. It has significant roles in providing ecological insights into new biological knowledge they may also be used to design models for sustainable resource management, besides it can also be used for environmental assessment. TEK in many respect is similar to scientific western knowledge as both are based on generalization of observations. However TEK differs from scientific knowledge in many other ways. Present study deals with the documentation of flora around Gwalior city and its status, effect of urbanization and other anthropological factors and role of TEK on its conservation.

Keywords: Ecosystem, resilience, approach, action.

ISCA-ISC-2015-8EVS-12-Oral

Humic Acid Removal from Aqueous Solution Using Aluminium Pillared Bentonite Clay and its Recovery

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Abstract: This work aims to evaluate the performance of aluminium pillared clay for humic acid adsorption from aqueous solutions. Pillared clay was prepared from natural bentonite clay with aluminium chloride and was found to be effective for humic acid removal. The adsorption of humic acid onto Al-PILC has been dynamically and thermodynamically investigated. Batch experiments were carried out as a function of solution pH, contact time, humic acid concentration, ionic strength and temperature. The maximum adsorption capacity was observed at a pH of 3.0. The maximum adsorption of 90 and 80% took place at pH 3.0 from an initial concentration of 15 and 30 $\mu\text{mol L}^{-1}$, respectively. Lagergren first order kinetic model was tested to describe the kinetic data. As the initial concentration increases from 15 to 60 $\mu\text{mol L}^{-1}$ the percentage adsorption decreases from 90 to 65. The percentage removal of humic acid increased with increasing ionic strength. The equilibrium isotherm data were fitted to the Langmuir, Freundlich and Scatchard isotherm equations to obtain the characteristic parameters of each model. The Langmuir model represents the experimental data fairly well as is evident from the correlation coefficient r^2 and relative standard deviation ($\Delta q\%$). The maximum adsorption capacity (Q_0) obtained from the Langmuir isotherm plot was 26.18 $\mu\text{mol g}^{-1}$ at pH 3.0 and at 30°C. Isotherm experiments conducted at different temperatures allowed the calculation of the isosteric heat of adsorption at different surface loading. The desorption data showed that the spent PILC can be regenerated for further use by 0.1 M NaOH.

Keywords: Adsorption, bentonite, pillared clay, humic acid, isotherm, heat of adsorption, desorption.

ISCA-ISC-2015-8EVS-13-Oral

Automobile exhaust induced changes in the Photosynthetic Pigments of Selected Plant Species of Economic importance

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Abstract: Changes in the concentration of different photosynthetic pigments (Chlorophyll and carotenoids) were determined in the leaves of six economically important tree species exposed to air pollution due to vehicular emissions. The six tree species, which are all economically important because of their being fruit bearers, used for timber, fodder and as road side trees were also selected on the basis of their air pollution tolerance index. These included *Mangifera indica* L., *Tectona grandis* Linn.f., *Shorea robusta* Gaertn.f., *Holoptelea integrifolia* (Roxb.) Planch, *Eucalyptus citridora* Hook. Syn. and *Mallotus philippinensis* Muell-Arg. Reduction in chlorophyll 'a', 'b' and carotenoid was recorded in the leaf samples collected from polluted areas when compared with samples from control areas. The highest reduction in total chlorophyll was observed in *Holoptelea integrifolia* (Roxb.) (48.73%) Planch whereas, the lowest reduction (17.84



%) was recorded in *Mallotus philippinensis* Muell-Arg. Similarly in case of carotenoid contents, highest reduction (43.02 %) was observed in *Eucalyptus citridora*, and lowest reduction was observed in *Mallotus philippinensis* Muell-Arg (19.31 %). The data obtained were further analyzed using one-way ANOVA and a significant change was recorded in the studied parameters. These studies clearly indicate that the vehicular induced air pollution reduces the concentration of photosynthetic pigments in the trees exposed to road side pollution

Keywords: Automobile, emissions, photosynthetic, pigments, chlorophyll, caratenoids.

ISCA-ISC-2015-8EVS-14-Oral

Environmental Pollution by Thermal Power Stations (A study with Special reference to the KTPS, Kota)

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Abstract: Mankind is at the threshold of a new stage of development in the world. It is because of his ruthless destruction of environment or nature. Mother Nature has blessed us with several gifts for our survival. Man for his greed is wounding Mother Nature without thinking for a moment for the future generations to come. It is said or opined that progress in this world would always be made at the cost of the Nature or Environment. Developed economy in general means disharmony with nature. Growing population, industrialization, urbanization is the chief cause of pollution. Requirement of “Power” for all the three sectors is most demanding commodity especially in the developing countries like India where it is mostly supplied by “Thermal Power Stations” in which coal, oil and pulp is used abundantly to generate power. The gases emitted by these TPS are very dangerous to the Environment and Mankind. In the Paper an attempt has been made as to assess the status of the TPS especially of Kota, Rajasthan (India) and explain how the TPS is polluting air, land and water of nearby areas endangering fauna and flora. Some suggestions are also made to deal with or to decrease the pollution made by them.

Keywords: Thermal Power Station (TPS).

ISCA-ISC-2015-8EVS-15-Oral

Ground water quality Analysis using spatial distribution Technique in Geographical information system – A Case study of Kakinada, East Godavari, AP, India

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Abstract: In this paper an attempt has been made to study of the Ground water quality analysis using Geographical Information System (GIS) techniques of Kakinada mendel of East Godavari District, Andhra Pradesh, India on 1: 50,000 scale. The Godavari district is termed as the rice bowl of Andhra Pradesh. Godavari River is the second longest river in the country with a length of 1465 km spreads over an area of about 5100 sq km on the east coast of India bordering the Bay of Bengal and is a densely populated basin. The study area bounded on North by Kottapalli, Pithapuram, in the West by Samalkota, Pedapudi, Karapa in the South by Tallarevu and in the East by Bay of Bengal. The area is flourished with lands of fertile soils, good rain fall and balanced climatic conditions and possesses all the natures hand works of perennial rivers, forests. The sea coast covers 144.4 sq km with made up of Gondawana sandstones. The town experiences an average annual rain fall between 110 and 115 centimeters. The Physio-chemical analysis of the 35 ground water samples collected at different parts of the study area, based on which, spatial distribution maps of 8 major water quality parameters are prepared using Inverse Distance Weighted (IDW) interpolation method in ArcGIS software. Water Quality Index (WQI) has been calculated to find the suitability of water for potable purposes. Ground water samples analyzed show quality parameters are ph, electrical conductivity, TDS, fluorides, calcium, iron, turbidity, magnesium and water zonation using spatial data.

Keywords: ArcGIS software, Water quality index



ISCA-ISC-2015-8EVS-16-Oral

Impact of Sugar mill effluent on Ground water quality of Latur city, India

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Abstract: A systematic study has been carried out to assess the physicochemical characteristics of water samples of bore wells from Latur MIDC and City area during June 2014 to June 2015. The parameters were analysed such as DO, pH, TDS, Total Alkalinity, Calcium, Magnesium, Fluoride, Sodium, Potassium, Chloride were estimated to assess the impact of effluents on ground water. Ground water sample is compared with the prescribed standard of drinking water. The results revealed that there was a significant variation in some parameters. This work shows that the water quality of bore wells from Latur MIDC and City area is deteriorated possibly due to increased of human activities and improper release of industrial effluent.

Keywords: physicochemical, assessment, groundwater, sugar mill.

ISCA-ISC-2015-8EVS-17-Oral

Forest Engineering an Earthquake Damage Repair Device

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Abstract: In order to overcome the earthquake disaster of Nepal an attempt could be made with attention focused on vegetation, realizing the damage done over the concerned trees which are the support and supplier of logs and timbers for building materials, bridges, roadways, shelters and to some extent food, barks, resin products, secondary metabolites with enormous medicinal properties and of economic values. As Nepal is rich in tall gymnospermous species including conifers like Pinus sp, Picea sp, Tusga sp, Larix sp, Abies sp, Juniperus sp and angiosperms like Sal (Shorea Robusta), Semal (Bombax malabricum), Asna (Terminalia termentosa), Dalbergia spp, pipal (Ficus religiosa), banyan (Ficus bengalensis), Castenopsis indica, Schima wallichii, Alnus nepalensis, Acer oblongum and various species of bamboo, oak, rhododendron moreover, Orchids and climbers were greatly affected besides natural shrubs and herbs. But they try to avoid and escape such damage through morphological, anatomical, biochemical, genetical alterations as plants are the immovable properties of nature. A preamble prediction could be done to understand the magnitude of damage due to the Shearing (S) and Primary (P) waves as plants experience of such waves those disturb the sub-aerial root system which in turn badly impaired the biology of the plant as a whole including water conduction, cell signaling, loss of neighbour detection and other major threats that results the loss of biodiversity. So much attention is to be paid on forest development and its resurrection-Forest Engineering.

Keywords: Earthquake, biodiversity, gymnosperms, angiosperms, orchids, forest engineering.

ISCA-ISC-2015-8EVS-18-Oral

A study on Ambient Air Quality Status of Udgir, Maharashtra, India

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Abstract: Air is the one of the important factor for survival of human beings and other organisms. It is emerging public health problem in developing countries. In this investigation Udgir city has been studied for the Ambient Air Quality status. Udgir is the major taluka in the Latur district of Maharashtra India. For the study purpose two sampling stations were selected from January to December 2013. Shivaji Chowk, Captain Krishnakant Chowk and Maharashtra Udaygiri Mahavidyalaya. The air quality was assessed based on measuring four air pollutants namely sulphur dioxide (SO₂), oxides of nitrogen (NO_x), Respirable Suspended Particulate Matter (RSPM) and Suspended Particulate Matter (SPM). From these Three areas, two areas viz.. Shivaji Chowk and Captain Krishnakant Chowk the average concentrations of RSPM and SPM exceeded the prescribed limits of Central Pollution Control Board (CPCB), New Delhi. The average concentrations of air pollutants at Shivaji Chowk area and Captain Krishnakant Chowk area were higher than that of



Maharashtra Udaygiri Mahavidyalaya area. Apart from this the SO₂ and NO_x levels in both areas remain under prescribed limits of CPCB, New Delhi. The average AQI of Shivaji Chowk and Captain Krishnakant Chowk were found higher than the MUM area. The AQI found to be less during rainy season (July to September). As per AQI calculated, the areas viz. Shivaji Chowk area and Captain Krishnakant Chowk area have moderate air pollution whereas the area of Maharashtra Udaygiri Mahavidyalaya has light air pollution.

Keywords: Air pollution, Air quality index, SPM, SO₂ and NO_x.

ISCA-ISC-2015-8EVS-19-Oral

Traffic Noise Pollution Study at different locations in Udgir City, Maharashtra, India

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Abstract: Sound that is unwanted or disrupts one's quality of life is called as noise. When there is lot of noise in the environment, it is termed as noise pollution. Sound becomes undesirable when it disturbs the normal activities such as working, sleeping, and during conversations. It is an underrated environmental problem because of the fact that we can't see, smell, or taste it. Community noise, or environmental noise, is one of the most common pollutants. It is defined by the World Health Organization as noise emitted from all sources, except noise at the industrial workplace. Community noise includes the primary sources of road, rail and air traffic, industries, construction and public works and the neighborhood' (WHO, 1999) The main objective of this study is to evaluate the noise pollution problem in the Udgir city and its impact. Transportation and horn used in vehicle are the major source of noise pollution. People reported that traffic noise is the main cause of headache, high BP and dizziness problems. For this purpose present study was carried out at four different locations with Sound Level Meter to assess the day noise level viz.. Shivaji Chowk, Methodist school, Captain Krishnakant Chowk and Nanded Naka. The study revealed the fact that noise levels have reached more than permissible level at Shivaji Chowk, Degloor road and Bidar road was more than 75 db in afternoon and Evening time and at Nanded road it is at alarming level of 55 to 60 db. It is observed that all the selected location, the level of noise was found to be above prescribed noise standard level of Central Pollution Control Board (CPCB) India and Bureau of Indian Standard (BIS).

Keywords: Noise pollution, CPCB, BIS.

ISCA-ISC-2015-8EVS-20-Oral

Water sources of Bhama and Bhima River Basin, Pune District, MS, India

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Abstract: Rainwater constitutes the main source of both the ground and surface waters in the study area. Being a part of central India, study area receives monsoon rains mostly from south west monsoon during period June to October. It is observed that majority of the rain water resided by the terrain, flows over the surface of land, as run off. A little quantity percolates deep down into the soil and sub soils as contribution to the ground water. Through the rain fall in the study area is on an average 700mm to 900mm annually, its contribution to ground water is minimum due to rugged nature of topography characterized by precipitous slopes and thin soil cover, as well as nearly fracturless nature of the country rocks. The rocks being massive and fine grained are unsuitable for ground water storage. It is through joints and fissures in them that the rain water percolate and accumulates in the weatherland portions, which are the most reliable source of ground water storage in the area under study. However the baked and highly vesicular portions between the lava flows provide passage or channel ways for percolating rainwater. Hence the natural surface and ground water resources are highly limited and have been observed in the form of natural springs and perennial streams

Keywords: Rain water, monsoon, slopes, topography.

ISCA-ISC-2015-8EVS-21-Oral

Occurrence of *Lygosoma Guentheri* from Khed Tahasil from Pune District, MS, India

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Abstract: The family Scincidae is largest group among lizards, the genus *Lygosoma*. From nine only five are endemic as per IUCN status this species classified as least concern. Study area is a part of Western Ghats, as per recent studies no



any record of *Lygosoma guentheri* from Khed Tahasil. The study recorded from Vadodra district, Gujrat and Nasik district from Maharashtra during 2012 and 2013. From the campus of Hutatma Rajguru Mahavidyalaya the first occurrence of *Lygosoma guentheri* recorded in 2015.

Keywords: Family scincidae, IUCN, Khed Tahasil.

ISCA-ISC-2015-8EVS-22-Oral

Ecological factors affecting regional patterns of Endemism and Species richness from Khed Tahasil, Pune District of Maharashtra, India

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Abstract: Biogeography is closely tied to both ecological and phylogenetic biology; main areas of interest are ecological Biogeography. Ecological and historical Biogeography there for applies different concepts in order to explain the distribution of organisms. The present study attempts at integrating these approaches to explore the regional patterns of endemism and species richness of reptiles in Khed Tahasil. In the study are extremely diverse climate and highly astounding heterogeneous landscapes, thus a high degree of species richness and endemism in Khed Tahasil.

Keywords: Endemism, biogeography, reptiles.

ISCA-ISC-2015-8EVS-23-Oral

Assessment of the Microfauna from Indira lack of Rajgurunagar, Pune, MS, India

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Abstract: Rainwater constitutes the main source of both the ground and surface waters in the study area. Being a part of central India, study area receives monsoon rains mostly from south west monsoon during period June to October. It is observed that majority of the rain water received by the terrain, flows over the surface of land, as run off. A little quantity percolates deep down into the soil and sub soils as contribution to the ground water. Rajgurunagar is the town at which the Indira lack used as water reservoir. In present study we investigate the ecosystem and microfauna of the lack. The present study attempts biodiversity and assessment with great extent. The newly introduced agrotourism around lack established. We observe various microorganisms which are the part of biodiversity.

Keywords: Biodiversity, biogeography, ecosystem, microfauna.

ISCA-ISC-2015-8EVS-01-Poster

Study on Industrial Pollution from Oil and Surfactants Manufacturing Industries along Dombivali Industrial Belt of Mumbai, India

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Abstract: In India the surface water is the main source of industries for waste disposal. Untreated or allegedly treated effluents have increased the level of surface water pollution up to 20 times the safe level in 22 critically polluted areas of the country. Although all industries in India function under the strict guidelines of the Central Pollution Control Board (CPCB) but still the environmental situation is far from satisfactory. Different norms and guidelines are given for all the industries depending upon their pollution potentials. Most major industries have treatment facilities for industrial effluents. But this is not the case with small scale industries, which cannot afford enormous investments in pollution control equipment as their profit margin is very slender. As a result in India there are sufficient evidences available related with the mismanagement of industrial wastes. The paper was therefore initiated to understand the pollution discharge scenario arising due to oil and surfactants manufacturing industries located along the Dombivali industrial belt of Mumbai, India. The study was carried to study the level of toxic heavy metals and the physico-chemical properties of waste water effluents discharged from the above industries. The maximum concentration of majority of heavy metals like Cu, Ni, Cr, Pb and Fe were recorded as 13.48, 3.90, 13.30, 1.75 and 15.89 ppm respectively, which were above the tolerable limit set for inland surface water. The maximum pH and conductivity values of the industrial waste water effluent were recorded



as 10.05 and 27800 $\mu\text{mhos/cm}$ respectively. The majority of physico-chemical parameters like chloride, cyanide, phosphate and total solid content were found to be maximum in the month of March having the respective values of 2340, 0.09, 35.2 and 8755 ppm. The effluent samples collected in the month of May was found to have low DO content of 3.33 ppm and high BOD content of 643 ppm. The alkalinity and COD values were reported to be maximum of 1988 and 4410 ppm respectively in the month of February. The hardness and salinity content was reported maximum of 131 and 5.76 ppm during the month of December and June respectively.

Keywords: Oil and surfactant industries, Dombivali Industrial Belt, heavy metals, industrial waste, Mumbai.

ISCA-ISC-2015-8EVS-02-Poster

Studies on Water pollution at the Shirvane and Nerul lakes Located near Nerul city of Navi Mumbai, India

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Abstract: Waste management strategies adopted in India have failed to keep pace with the rapid urbanization. This has resulted in the accumulation of toxic metallic contaminants with a consequent loss in quality of water, for the past few decades. The toxic heavy metals entering the ecosystem may lead to geoaccumulation, bioaccumulation and biomagnification. Food chain contamination by heavy metals has become a burning issue in recent years because of their potential accumulation in biosystems through contaminated water, soil and air. Most of our water resources are gradually becoming polluted due to the addition of foreign materials from the surroundings. These include organic matter of plant and animal origin, land surface washing, and industrial and sewage effluents. Rapid urbanization with improper environmental planning often lead to discharge of sewage effluents into lakes. The lakes have a complex and fragile ecosystem, as they do not have self-cleaning ability and therefore readily accumulate pollutants. Several factors, like discharge of agricultural, domestic and industrial wastes, land use practices, geological formation, rainfall patterns and infiltration rate are reported to affect the quality of lake water. As the quality of water greatly affect the public health, it is also necessary to analyze the physico-chemical parameters of lake water. Therefore, we initiated such a study to understand the physico-chemical properties and heavy metal content in water of Shirvane and Nerul lakes situated at Navi Mumbai, India. These lakes receive domestic raw sewage from surrounding habitation; so also the activities like cattle and cloth washing, bathing, religious activities like idol immersion etc. paves the way of harmful chemicals in the lake water. In the present study, it was observed that the total hardness of water samples lies between 404 mg/L (Nerul Lake) to 1,008 mg/L (Shirvane Lake). This indicates that, water of Shirvane and Nerul lakes have total hardness content beyond ISI permissible limit (300 mg/L). DO content was found to vary between 1.2 ppm (Shirvane Lake) to 1.7 ppm (Nerul Lake), which was low than DO content of 4.0 ppm to 6.0 ppm according to USPH standard and 3.0 ppm as per ISI standard. Decrease in DO may lead to changes in the composition of aquatic life, such as fish deaths and reduced fishery. The concentrations of Fe in the lake water was found to vary from 1.99 to 4.42 mg/L, which according to USPH Standards was above the permissible limit of 0.30 mg/L. The presence of high concentration of iron in lake water may increase the hazard of pathogenic organisms; since most of these organisms need iron to grow. The concentration of Pb was found out to be high of 0.10 mg/L (Shirvane Lake) and 0.12 mg/L (Nerul Lake) which was above the permissible limit of <0.05 mg/L set by USPH for drinking water. The high concentration of Pb was mainly due to idol immersion activity, as Pb is contributed by paints and enamel used to colour the idols. The Cd content in water samples was found to be maximum of 0.047 mg/L at Shirvane Lake and minimum of 0.030 mg/L at Nerul Lake which was much above the permissible limit of 0.01 mg/L set by WHO. Higher values of Cd in lake water samples suggest that the input of heavy metal is done through the anthropogenic activity and idol immersion activity as most of the heavy metal load is through the dissolved paints and pigments. The Cr content in water samples was found to be maximum of 0.093 mg/L at Shirvane Lake and minimum of 0.071 mg/L at Nerul Lake which was much above the permissible limit of 0.05 mg/L set by WHO. The Ni content in Shirvane and Nerul lakes was found to be 0.207 and 0.130 mg/L respectively, which was above the WHO limit of 0.1 mg/L. In the present study, we find that Fe, Ni, Cr, Pb and Cd are present in relatively higher concentrations as compared to their permissible limits. As these lakes are also used for fishing purposes, it is quite evident that these heavy metals may enter the food chain, and thus through bio magnifications enter the human body as well. Periodical monitoring of the water quality is thus required to assess the condition of surface water of the water body and immediate steps should be taken to check the anthropogenic activity around the lake. This will be helpful in saving the lake from heavy metal pollution.

Keywords: Water pollution, USPH standard, WHO standard, heavy metals, Shirvane Lake, Nerul Lake, Nerul city, Navi Mumbai.



ISCA-ISC-2015-8EVS-03-Poster

Soil Pollution due to Paint Industries located along the Dombivali Industrial Belt of Mumbai, India

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Abstract: The present study was performed from June, 2012 to May, 2013 to understand the soil pollution arising due to paint industries located along Kalyan-Dombivali industrial area of Thane, Maharashtra. The study area is experiencing tremendous soil pollution problems due to the nearby industries which have resulted in reduced soil fertility, seasonal cropping, low yield etc. in the nearby farms. In an attempt to understand the soil pollution problem we have initiated the study by collecting the soil samples from five representative paint industries along the industrial belt. The soil samples were collected randomly twice in a month in morning, afternoon and evening session from paint, industries. Soil samples were collected by using plastic soil probe or auger. The analysis of heavy metals was done by Inductively Coupled Plasma-Atomic Emission Spectrometer (ICP-AES) of Perkin Elmer. The major heavy metals detected were Cr, Fe, Zn and Al having average annual concentration of 0.13, 1.83, 0.22 and 2.01 % respectively. The average Ni and Cu content was found to be 0.009 and 0.004 % respectively. The measured pH and electrical conductivity values was observed to vary in the range of 7.2 to 7.8 and 0.12 to 0.28 μ S/cm. The respective values of organic carbon and phosphorous content of the soil was found to be 0.029 and 0.064 %. It is feared that the accumulated heavy metals in the soil might enter the crops through bioaccumulation thereby creating threat to the human health. The above possibility has to be checked on the basis of regular long term scientific monitoring of the heavy metals in the soil. The results of the present study suggest that the existing situation if neglected may adversely affect the health of surrounding population.

Keywords: Soil pollution, paint industries, Kalyan-Dombivali industrial area, heavy metals, bioaccumulation, ICP-AES.

ISCA-ISC-2015-8EVS-04-Poster

Assessment of Physico-Chemical Parameters of the Waste Water Effluent from Gove industrial Belt of Bhiwandi City of Mumbai, Maharashtra, India

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Abstract: During the past few decades Indian industries have registered a quantum jump, which has contributed to high economic growth but simultaneously it has also given rise to severe environmental pollution. Consequently, the water quality is seriously affected which is far lower in comparison to the international standards. Waste water from manufacturing or chemical processing industries contributes to water pollution. Industrial waste water usually contains specific and readily identifiable chemical compounds. It is found that one-third of the total water pollution comes in the form of effluent discharge, solid wastes and other hazardous wastes. Out of this, a large portion can be traced to the processing of industrial chemicals and to the food products industry. The surface water is the main source of industries for waste disposal. Untreated or allegedly treated effluents have increase the level of surface water pollution up to 20 times the safe level in 22 critically polluted areas of the country. Although all industries function under the strict guidelines of the Central Pollution Control Board (CPCB) but still the environmental situation is far from satisfactory. Different norms and guidelines are given for all the industries depending upon their pollution potentials. Most major industries have treatment facilities for industrial effluents. But this is not the case with small-scale industries, which cannot afford enormous investments in pollution control equipment as their profit margin is very slender. In fact, a number of large- and medium-sized industries in the region covered by the Ganga Action Plan do not have adequate effluent treatment facilities. As a result in India there are sufficient evidences available related with the mismanagement of industrial wastes. Considering the existing pollution scenario, we have initiated the study on water pollution arising due to discharge of industrial waste water effluent from the Gove industrial belt of Mumbai, Maharashtra, with special reference to the physico-chemical characteristics. The physico-chemical parameters like temperature, pH, solid content, total hardness, chloride content, dissolved oxygen (DO), biological oxygen demand (BOD) and chemical oxygen demand (COD) were studied by collecting samples bimonthly for the period of 12 months. The total dissolved solid (TDS) content in waste water effluent lies in the range of 6,237 to 16,933 mg/L, with an average value of 10,125 mg/L thereby making water unsafe even for irrigation purpose. The total hardness of waste water effluent lies between 302 mg/L to 382 mg/L, with an average value of 329 mg/L, which was above the maximum permissible limit set by ISI. The chloride content in the waste water effluent was found to vary between 990 and 1,793 mg/L, with an average value of 1,377 mg/L. The results



indicate that the chloride content was very much above the acceptable limit of 200 mg/L set by WHO and 250 mg/L according to ISI. The average DO content was found to vary between 1.10 mg/L to 3.70 mg/L, with the average value of 1.95 mg/L, which was very much below the minimum DO content of 4.0 to 6.0 mg/L according to USPH standard. The average BOD values were observed to vary between minimum of 245 mg/L and maximum of 876 mg/L with average value of 651 mg/L. These values were very much higher than the maximum permitted BOD content of < 100 to 300 mg/L according to UN Department of Technical Cooperation for Development. The COD values varies between 452 mg/L to 4,200 mg/L with average value of 1,981 mg/L, which was very much higher than maximum allowed limit of 4.0 mg/L according to USPH Standard. The authors point out that as India moves towards stricter regulation of industrial effluents to control water pollution, greater efforts are required to reduce the risk to public health as toxic pollutants which are mainly colourless and odourless are released into the aquatic ecosystems there by creating threat to the aquatic life.

Keywords: Physico-chemical parameters, Gove industrial Belt, industrial waste water effluent, BOD, COD, environmental pollution.

ISCA-ISC-2015-8EVS-05-Poster

Optimization of Solid waste Bin deports placement through GIS of Rohtak city, India

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Abstract: Placement of bins is an important aspect of the solid waste management process. Optimization of bin placement results in adequate number of bins as per the waste generation capacity of the locality, ease of access due to proper spatial distribution of the bin by the waste generators as well as waste collectors. In the present study the bin optimization for the city of Rohtak has been done using Geospatial inputs from remote sensing imageries and local solid waste generation survey and census. Solid waste generation was estimated for 488 blocks of the city taking population and socioeconomic conditions of each block in consideration while determining the waste generation. Bins of 3000 Liter volume having a calculated capacity of 990Kg were used as collection depots for deposition of solid waste collected from house to house through rickshaw trolleys. The Centroid of each block was generated using Data Management Tool [Features (Feature to Point)] .The distance of the block Centroid to the nearest road was determined through Analysis Tool [Proximity (Near)]. The bins deport of each block was placed on the determined nearest road. Depending upon the waste generation of each block the numbers of bins have been placed. It was ensured that the distance between two bins was not exceeding 500 meters and minimum distance 100meters. To ensure this bin depots were combined or split. The optimization of bin placement through GIS resulted in ensuring adequate bin waste handling capacity, optimization of the bins distance for ease of waste collection and transportation to dumpsite.

Keywords: Geographical information system (GIS), Bin placement, centroid, Bin Deports, solid waste.

ISCA-ISC-2015-8EVS-06-Poster

Solid waste landfill site selection using GIS and Analytical Hierarchy Process (AHP)

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Abstract: Selection of an appropriate site for municipal solid waste disposal is one of the crucial steps of waste management, as the waste after collection and all other processes is ultimately dumped here. The site suitability/unsuitability for landfill selection is a process which involves evaluation of multiple criteria's and providing a balanced weightage to these criteria's is an important factor influencing the final results. For assigning weightage to different criteria's Analytical Hierarchical Process (AHP), pair wise comparison method was used. Landfill site selection was performed by creating Model in GIS environment. Each criterion was mapped using GIS technique. The data for different criteria's was gathered from Maps, field surveys, and actual analysis and measurements. In the present study of Rohtak city, the criteria's taken were Surface water body, Roads, Canal, Railway, and Drain, Residential Area, Sensitive Area, Municipal Corporation Boundary, Ground water table, Permeability of soil, Wind direction, Land use map, Roads, Distance from Centroid of Municipal corporation boundary. Restriction and suitability models were constructed to arrive at suitable sites for landfill. In restriction model rules by CPCB and CPHEEO were applied and through buffer creation Boolean raster was prepared. In Suitability model weightage was given by AHP. Further selection of site was done using size as suitability factor. Two sites were found to fulfill all the criteria's taken.

Keywords: GIS, Analytical hierarchy process, Landfill, Solid waste.



ISCA-ISC-2015-8EVS-07-Poster

Bentonite A Natural mineral as an Adsorbent: Emphasis to COD removal of Sugar Industry waste water

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Abstract: Agro-industries are major contributors to worldwide industrial pollution. Effluents from many agro-food industries are a hazard to the environment and require appropriate and a comprehensive management approach. Sugar industry waste water is rich with organic content like TOC, COD and BOD. The removal of Organic contamination from combined wastewater of sugar industry is absolutely essential to avoid water pollution. In the present study, performance of natural mineral bentonite (specific surface area 2881.77 cm²/gm) was evaluated for the removal of organic content from combined waste water of sugar mill. Batch adsorption experiments at room temperature were performed in order to examine the removal process under various factors like the effects of initial concentration, adsorbent dose (5 gm/L to 120 gm/L), contact time (24 hours) and temperature. The study of variation in adsorbent dosage shows that 100 gm/L of bentonite removed 25.37% of COD. Experimental data were analyzed by Langmuir and Freundlich adsorption isotherms. The characteristic parameters and related correlation coefficients have been determined. The isotherm study revealed that the adsorption equilibrium is well-fitted to the Freundlich isotherm.

Keywords: Bentonite, Adsorption isotherm, Adsorption intensity ($1/n$), Adsorption energy ($b \times 10^3$), Adsorption capacity (K, ϵ_0).

ISCA-ISC-2015-8EVS-08-Poster

Pesticides and Human Health

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Abstract: Pesticides are chemicals, designed to kill pest. Many of them pose risk to people. Although pesticides are intended to harm only the target pest, but if they are not used in proper way, then they cause harm to people and the environment. The presence of pesticide is not necessarily a problem, but it may be a source of exposure. The exposure of pesticides causes harm, depends on its dose, how someone is exposed, how sensitive an individual may be to that toxin. Some people are more toxic at risk than others, depending on their age, gender, sensitivity, pregnancy or other factors. People can be exposed by breathing a pesticide, getting it into mouth (by eating or drinking) or by contact with the skin or eyes. Long exposure of pesticides causes health problems like cancer, impairing fertility, birth defects, altered foetal growth, foetal death, respiratory problems, memory disorders, depressions, diabetes and neurological problems etc.

Keywords: Pesticides, target pest, exposure, toxicity, health problems

ISCA-ISC-2015-8EVS-09-Poster

Pollution and Human health

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Abstract: Environment and health is not just “an aspect” of environmental Policy, it is at the heart of it. Over the last three decades there has been increasing Global concern over the public health impacts attributed to environmental pollution, in particular and the global burden of disease. The World Health Organization (WHO) estimates that about a quarter of the diseases facing mankind today occur due to prolonged exposure to environmental pollution. Air pollution has both acute and chronic effects on health, affecting a number of different systems and organs. It ranges from minor upper respiratory irritation to chronic respiratory, heart disease, lung cancer and chronic bronchitis in adults or asthmatic attacks. These affect of air pollutants a Human health and their mechanism of action is briefly discussed.

Keywords: Air pollutant, human health, health and effects, nature, Global.

ISCA-ISC-2015-8EVS-10-Poster

Atmospheric changes observed during April 2015 Nepal Earthquake

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Abstract: A massive earthquake lasting around twenty seconds shook Nepal on 25 April 2015, with a moment magnitude of 7.9Mw, its hypocenter at a depth of 10 km. Being a shallow earthquake; it caused severe damage to life and property



and was perhaps the worst natural disaster to strike Nepal since the earlier 1934 earthquake. The earthquake triggered an avalanche on Mount Everest and in the Langtang valley, killed and rendered thousands of people homeless, flattened entire villages, destroyed centuries-old buildings, lifted areas near the city of Kathmandu by around 3 feet and reduced the height of Mount Everest by about an inch. Tremors were also felt in northern parts of India including Bihar, Uttar Pradesh, West Bengal and other North-Indian States. Around 200 aftershocks followed thereafter for several months. Although the frequency of aftershocks decreased gradually with time, the depth of focus remained around 10 km from the earth's surface and its magnitude also remained around 4 Mw up to Sep 7 2015. An attempt has been made to investigate the changes in surface air temperature, pressure, aerosol index, *aerosol optical depth*, water vapor, NO_x and ozone concentration from two months prior to the occurrence of this deadly earthquake to five months following the earthquake. The observed results and their possible causes will be presented.

Keywords: Air temperature, pressure, aerosol index, *aerosol optical depth*, water vapor, NO_x, ozone.

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9. Forensic, Medical, Dental and Nursing

ISCA-ISC-2015-9FMDN-02-Oral

Importance of Identification in Crime Investigation

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Abstract: In crime investigation the identification of the criminal is very important. It is done in cases of murder, rape, absconding soldires, adults who have lost their memory, young lost children, new born babies in hospptitals, ins-urance claims, prolongation of laosed pention, unlaw full possession of property, in cases of fire, explosions, Railway accidents or air crashes, fowl play. Now we come to the point that what is Idetification- It means the determination of individuality of a person. It involves the absolute fixation of the personalityand the determination of the exact place in the community occupied by the individual. It is the concern of the police mainly. But a medical man can provide certain facts about a person or dead body or fragmentary remains which will enable them to complete identification. For the purpose of identification certain datas are required. They are–in dead person- race, sex, age, complexionand features, hair, finger prints, foot prints, deformities, scars, tatoon marks, occupational marks, cloths and ornaments and articles in pockets. In the living persons- in addition to the above the following are also helpful in living individuals- hand writing, speech and voice, gait, tricks of manner and habits.

Keywords: Finger prints, deformities, occupational marks, fragmentary remains, foot prints

ISCA-ISC-2015-9FMDN-04-Oral

Nalidixic Acid Susceptibility Test for Screening *Salmonella* Isolates of Reduced Susceptibility/Higher Minimum Inhibitory Concentration to Ciprofloxacin

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Abstract: Enteric fever is the major diagnosis among febrile patients in Nepal with yearly increase in nalidixic acid resistance and reduced ciprofloxacin susceptibility among *Salmonella* isolates. This study was carried out to evaluate the validity of nalidixic acid resistance as an indicator of reduced susceptibility of *Salmonella* isolates to ciprofloxacin. In this study, 999 blood specimens collected from suspected enteric fever patients visiting B and B Hospital were processed by standard microbiological techniques. Isolates were identified by biochemical tests and serotyping. Antibiotic susceptibility test was performed by Kirby Bauer disc diffusion method and Clinical and Laboratory Standards Institute (CLSI) recommended interpretive criteria. Minimum inhibitory concentration of ciprofloxacin was determined by agar dilution method. Isolation rate of *Salmonella* species was 6.21%. Among 62 *Salmonella* isolates, 51 were *S. Typhi*, 10 were *S. Paratyphi A* and one isolate was *S. Paratyphi B*. Only one isolate of *S. Typhi* was multi-drug resistant. Resistance to ceftriaxone, cefixime and azithromycin was nil. On disc diffusion test, 55 isolates were resistant to nalidixic acid. Fifty-seven isolates (55 NAR and 2 NAS) were found to have increased (>0.125mg/ml) MIC of ciprofloxacin with the CLSI breakpoints. Thus, nalidixic acid resistance showed a predictive value of 100% for ciprofloxacin resistance. Screening with nalidixic acid disc had a sensitivity of 100% and a specificity of 71.43% for the determination of decreased ciprofloxacin susceptibility. Before using ciprofloxacin for the treatment of enteric fever, appropriate identification of *Salmonella* isolates with reduced ciprofloxacin susceptibility is essential to limit the possible treatment failure and further development of highly resistant strains.

Keywords: Enteric fever, *Salmonella*, Nalidixic acid resistance, MIC value, Decreased ciprofloxacin susceptibility.

ISCA-ISC-2015-9FMDN-05-Oral

Histopathological, Biochemical and Behavioural Analysis of a Herbo Metallic Preparation

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Abstract: Ayurveda recommends the use of plant based as well as mineral based preparations for treating disease conditions. However, toxicity due to the presence of these heavy metals is a matter of concern. One such medicine is



'Ekangaveera rasa', which contains equal parts of metals such as copper, zinc, mercury, lead, iron etc. along with other herbs and minerals. There are no published reports available to evaluate the toxic effects of such metals used in this preparation. Therefore, the aim of our study is to evaluate the possible alterations caused by the 'Ekanganveera rasa' on brain, liver and kidneys by histological, biochemical and behavioral analysis. For this evaluation, Wistar rats of either sex were taken and divided into 4 groups of 6 animals each. Three groups were treated with Ekangaveera rasa at doses of half, equal and 5 times more of human equivalent dose for 30 days. Behavioral parameters were assessed on 15th and 30th day by using passive avoidance test. At the end of the treatment period, blood was collected and subjected to basophilic stripping and biochemical analysis. Further, their tissues were collected and processed for histopathological evaluation. Possible alterations due to administration of Ekangaveera rasa will be discussed.

Keywords: Herbo-metallic preparation, Ekangaveera rasa, ayurveda, histopathological evaluation, behavioral analysis

ISCA-ISC-2015-9FMDN-07-Oral

Lived Experiences of Patients with Chronic Obstructive Pulmonary Disease in Chitwan, Nepal

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Abstract: Chronic obstructive pulmonary disease has a great impact on patients' daily life which is mostly subjective in nature and it can only be interpreted by the person experiencing it despite medical attempts to measure or quantify it. The objective of this study was to explore lived experiences of patients suffering from chronic obstructive pulmonary disease in Chitwan, Nepal. Qualitative phenomenological study design was used and 22 patients were selected purposively from the parent population included in quantitative survey. In-depth interview was conducted in the participants' home by using interview guidelines and data was analyzed by using the steps outlined in Colaizzi's method. Six themes were emerged after analysis of the data through thematic analysis. i. Illness perception and risk factors ii. Physical health: Patients experienced more impairment in their physical health due to symptom burden (especially dyspnea and fatigue) and limitations on their physical activities iii. Social health: Patients reported their social limitations resulted from physical disability and fear of worsening of symptoms. Despite of the support from family member, they experienced loneliness, isolation, neglected and burden on family members. iv. Psychological health: Patients encountered the symptoms of depression and anxiety as a result of frequent symptom burden, and limitations in activities. v. Adjustment with illness: Five adaptive behaviors were observed among the patients such as symptom management, adjustment with limitations, control of environmental factors, emotional coping and practice of healthy activities. They acknowledge the important of family support for their physical and emotional adjustment. Patients experience physical and psychosocial problems in their daily life. Therefore, there is need to provide holistic approach for the enhancement of quality of life of patients.

Keywords: Chronic obstructive pulmonary disease, lived experience, patients.

ISCA-ISC-2015-9FMDN-08-Oral

Correlation of Reactive Oxygen Species and Antioxidants Status in Etiopathogenesis of Iron Deficiency anemia

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Abstract: Objective- Iron deficiency anemia is the leading cause of anemia worldwide and 1.62 billion people have been affected. The study was designed to assess correlation between antioxidant status and reactive oxygen species. Materials and methods- Hundred iron deficiency anemic patients and healthy controls with their informed consent were selected. The plasma was separated from the blood samples and also used for the estimation of lipid peroxide, vitamin A, C and E and total antioxidant activity (TAA). The enzymatic antioxidants- glutathione peroxidase, superoxide dismutase and catalase were also analyzed. Result- The mean age of case ranged from 30.11±7.77 years and control age ranged from 32.0±8.08 years. Lipid peroxidation parameter- malondialdehyde (MDA) ranged from 3.82±1.76nmol/ml 4.31±1.43nmol/ml in case and control respectively. In anemic case, antioxidant vitamins A, C and E ranged from 62.29±10.93µmol/dl, 0.42±0.02mg/dl and 0.64±0.15mg/dl respectively The increase in lipid peroxidation was highly significant at p<0.005. In contrast, the decrease in antioxidant vitamins were highly significant at p<0.01 as compared with healthy controls.



Conclusion- The results indicated an elevated oxidative stress due to the depletion of enzymatic and non-enzymatic antioxidants and increased lipid peroxidation as indicated by the formation of increased MDA in patients.

Keywords: Iron deficiency anemia, reactive oxygen species, lipid peroxide, antioxidant, oxidative stress.

ISCA-ISC-2015-9FMDN-09-Oral

Health-Related Quality of Life and Behavioural Risk factors among Coronary Heart Disease Patients in a Tertiary Hospital

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Abstract: Non communicable diseases especially coronary heart disease is increasing rapidly in developing world due to rapid changes in the economic, social and demographic determinants of health as well as adoption of unhealthy lifestyle. Behavioral risk factors is one of the important influencing factors of health related quality of life among coronary heart disease patient. The aim of this study was to assess the association between behavioural risk factors and health related quality of life among coronary heart disease patients. A cross sectional study design was used with 254 coronary heart disease patients (Myocardial infarction, Angina pectoris and Heart failure) attending out-patient department of Shahid Gangalal National Heart Centre, Kathmandu, Nepal. Purposive sampling technique was used for data collection by face to face interview technique using the MacNew Health - related Quality of Life tool. Data was analyzed to depict frequency, percentage, mean, Standard Deviation and to analyze the association using independent sample t test/one way ANOVA between selected variables and perceived barriers for health related quality of life scores of coronary heart disease patients. The health related quality of life was lower in physical domain compared to emotional and social domains. Similarly, the mean score of global health related quality of life was higher among patient with angina pectoris (3.96 ± 0.94) compared to myocardial infarction (3.79 ± 0.85) and heart failure (3.58 ± 0.61) group. Coronary heart disease patients with behavioral risk factors such as history of chewing tobacco, eating red meat and fatty substances had significantly lower health related quality of life. Likewise, health related quality of life was significantly lower among those patients who perceived barriers negatively and the most common perceived barriers were dietary restriction, lack of information on disease condition, stress related to prognosis of disease condition, lack of information about life style modification and experience of chest pain/heaviness during routine works. It is concluded that the health related quality of life was found to be lower in physical domain and the influencing factors of health related quality of life were behavioral risk factors and perceived barriers. Hence, the interventions in any of these areas may prove beneficial for the patients with coronary heart disease.

Keywords: Behavioural risk factors, coronary heart disease, health related quality of life.

ISCA-ISC-2015-9FMDN-10-Oral

A comparative study of Pseudocholinesterase Activities in relation to Transaminases, GGT and ALP in Liver disorder in Hospital based study

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Abstract: To compare pseudocholinesterase activities in relation to transaminases, GGT and ALP in liver diseases. A prospective study was conducted at College of Medical Sciences –Teaching Hospital (CMS-TH), from May 2011 to May 2013 with 25 healthy (controls) and 25 diagnosed cases each of carcinoma of liver, cirrhosis of liver, infective hepatitis and obstructive jaundice among both sexes of same age group attending medical outpatient and inpatient departments. Serum pseudocholinesterase and other liver function test parameters were performed with semi - autoanalyzer and Roche Hitachi 902 respectively. Pseudocholinesterase level was significantly decrease in the order of control (mean \pm SD = 6865.12 ± 928.41) > obstructive jaundice (mean \pm SD = 5539 ± 791.05) > infective hepatitis (mean \pm SD = 3800.69 ± 764.17) > cirrhosis of liver (mean \pm SD = 1735.16 ± 433.82) > carcinoma of liver (mean \pm SD = 1369.48 ± 276.64). The difference in the means was statistically significant ($p < 0.001$). Similarly aspartate transaminase (AST) (Mean \pm SD = 311.48 ± 177.15) and alanine transaminase (ALT) (Mean \pm SD = 491.36 ± 308.92) were higher in hepatitis but in carcinoma of liver the AST (Mean \pm SD = 292.55 ± 92.85) level was higher than ALT (Mean \pm SD = 179.24 ± 70.25). The difference in the means was statistically significant ($p < 0.001$). AST level was 1.6 time higher than ALT. alkaline phosphatase (ALP) (Mean \pm SD = 419.39 ± 90.49) and gamma glutamyl transaminase (GGT) (Mean \pm SD =



257.81 ± 68.29) level were higher in obstructive jaundice and GGT (Mean ± SD = 195.54 ± 107.75) level was found to be higher in carcinoma of liver. The difference in the means was statistically significant (p<0.001). There was significant decrease in pseudocholinesterase level in carcinoma of liver followed by cirrhosis of liver and less so in infective hepatitis. AST and ALT level were higher in hepatitis cases. The level of AST was found higher in carcinoma of liver than ALT. In obstructive jaundice ALP and GGT was raised and statistically significant. GGT level was raised in carcinoma of liver. Pseudocholinesterase level was found to be normal in obstructive jaundice. The study results indicated that with more severe liver cell destruction or cell degeneration, there was corresponding significant decrease in the level of pseudocholinesterase, which could be used as diagnostic marker of liver disease.

Keywords: Comparative, Pseudocholinesterase, activities, relation, transaminases, GGT, ALP, liver, disorder, Hospital.

ISCA-ISC-2015-9FMDN-11-Oral

Fresh Honey: A Source of Probiotic Bacteria

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Abstract: Honey is a sweet food made by bees (genus *Apis*) using nectar from flowers. It is well known for its health benefits and it has been used as traditional medicine for many years. Lactic acid bacteria are involved in protection of honey from other bacteria, yeasts and molds as well as establishing strong hive immunity against pathogens. The present study aims at the isolation and screening of lactic acid bacteria from honey samples collected from Karnataka, India and study of their probiotic properties. *Lactobacillus acidophilus*, *Lactobacillus ruteri*, *Lactobacillus paraplantarum*, *Lactobacillus delbrueckii* subsp. *lactis* and *Pediococcus pentosaceus* have been identified on the basis of morphological, biochemical and 16S rRNA sequencing. The probiotic properties like acid tolerance, bile tolerance, tolerance to gastric juice and intestinal juice, aggregation, co-aggregation, adhesion, hydrophobicity, bile salt hydrolase activity, cholesterol reducing properties, antibiotic resistance and antimicrobial activity against potential pathogens have been studied. All the isolates showed very good probiotic properties. They produced strong antimicrobial compounds which may be responsible for the antibacterial properties of honey. It turns out the secret to exceptional gut health just might lie in a teaspoon of raw honey each day.

Keywords: 16S rRNA sequencing, honey, lactic acid bacteria, *Lactobacillus ruteri*, *Lactobacillus paraplantarum*, *Pediococcus pentosaceus*, Probiotics

ISCA-ISC-2015-9FMDN-12-Oral

Genetic variability of the human filarial parasite *Wuchereria bancrofti* in southern parts of Nepal and India

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Abstract: Lymphatic filariasis (LF) is the second leading cause of long-term disability worldwide caused by the parasite *Wuchereria bancrofti* (*WF*). Lymphoedema, elephantiasis, hydrocele and periodic fevers are the characteristics of LF. The objective of the study was to find out the genetic variations of *WF* in southern parts of Nepal and India. The study of genetic variations leads to the discovery of novel drug, diagnostics and vaccine targets. The genetic variability of the *WF* from south western localities of Nepal (Kapilbastu and Kailali districts) and a southern locality of India (Mambattu, Tamilnadu) was studied using 29 bp repeats of ALT-2 genes and haplotype mapping of the ITS region. The profiles were generated for 16 parasite populations of Nepal and reference profile of India. The genetic data were analysed by Bioedit and Mega softwares. The laboratory work was done in Regional Medical Research Centre (RMRC), Indian Council for Medical Research (ICMR), Department of Health Research, Government of India, Nehru Nagar, Belgaum, Karnataka, India with the financial support of WHO country office Nepal. Alignment of sequences suggested the presence of insertions and deletions (indels) along with substitutions (transitions and transversions) in the regions of Nepal and India. Haplotype analyses revealed the presence of a total of 58 variations in the entire 16 DNA sequences: 8 from Kapilbastu and 8 from Kailali districts and 100 polymorphic sites in the parasites DNA sequences from Nepal and India. The analyses of Short Tandem Repeats, haplotypes and the phylogenetic trees indicated the presence of at least two genetically distinct clusters among the *WF* parasite populations in the areas. The study has generated a base line data on genetics of *WF* and its variability which will be useful for comparing the other strains existed in other areas including India. This baseline data will be helpful to study of the drug resistance against LF. It will also help any strategies for vaccine development and drug development against LF.

Keywords: Genetic, variability, human, filarial, parasite, *Wuchereria bancrofti*, southern parts, Nepal, India.



ISCA-ISC-2015-9FMDN-13-Oral

Extended Spectrum Beta Lactamases detection and multiple Antibiotic resistance Indexing of Escherichia coli from Urine samples of Patients from a Referral Hospital of Eastern Nepal

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Abstract: Escherichia coli is the most common causative agent of urinary tract infection. Antibiotic resistance among uropathogens has become a prominent public health problem. Multidrug resistance bacteria have limited the therapeutic possibilities by producing Extended Spectrum Beta Lactamases (ESBL). Since routine monitoring of ESBL producers are not conducted in clinical laboratories their true prevalence is still unknown. So the objective of this research was to assess multiple antibiotic resistance (MAR) indices and determine ESBL production among Escherichia coli isolated from urine samples. Standard microbiological techniques and antibiotic sensitivity test were performed by Kirby Bauer disc diffusion method to identify E. coli. ESBL screening was done by using Ceftriaxone, Aztreonam, Cefotaxime, Ceftazidime and Cefpodoxime whereas confirmation by combined disc assay. SPSS 16 software was used to analyze data. 86.95% E. coli isolates were MDR strains. 27 isolates had multiple antibiotic resistance (MAR) index of 0.2 and 5 isolates had MAR index of 0.7. E. coli isolates showed higher degree of resistance towards Amoxicillin (100%) while 100% were sensitive towards Gentamicin followed by Nitrofurantoin (62.31%). The reliable screening agent for ESBL detection with sensitivity 100% and positive predictive value of 80% was Cefotaxime. Combined disc assay detected 12/69 (17.31%) of E. coli isolates as confirmed ESBL producers. The ubiquity of ESBL-producing E. coli was observed emphasizing the necessity of regular surveillance of ESBL producing clinical isolates in clinical samples to minimize multi-drug resistance strains and avert the ineffectiveness of antimicrobial agent for good health practices.

Keywords: Spectrum beta lactamases detection and multiple, antibiotic, resistance, indexing, Escherichia coli, urine.

ISCA-ISC-2015-9FMDN-14-Oral

Hand Washing awareness among Health care Workers of Chitwan, Nepal

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Abstract: Hands are the main pathways of germ transmission during health care. Improper hand hygiene by health care workers is responsible for about 40% of nosocomial infections resulting in prolonged illnesses leading to a massive additional financial burden on the health-care system. A cross sectional, questionnaire-based study was carried out in seven different wards of three hospitals of Chitwan, Nepal, in order to identify and compare the knowledge and practice level of working health care workers. There was a significant difference in knowledge of Health Workers among hospitals ($p=0.003$). There was a significant association ($p=0.004$) between knowledge and practice skill of HW. HCWs had an overall good level of knowledge (77.2%) and practice skills (92%) of HW. Soap was the most popular agent among HW in all hospitals. Half of the HCWs of all hospitals were unaware about the total steps of HW. Only a few (37.5%) HCWs from BPKMCH had been trained for infection prevention. HCWs were lacking in knowledge and practice skill regarding some important components of HW. Therefore, there is an urgent need for continuing medical education towards infection prevention, in order to increase their awareness and compliance towards hand hygiene.

Keywords: Hand washing, health care worker, knowledge, practice.

ISCA-ISC-2015-9FMDN-15-Oral

Effectiveness of Jacobson relaxation Technique in Anxiety and Depression: An Experimental study

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Abstract: The present study deals with the treatment of anxiety and depression in 150 university or college going students with age of 19-35 year using Jacobson Relaxation Technique with EMG as a diagnostic tool for to measure the tension at corrugator supercilli level performed in Department of physiotherapy, Guru Jambheshwar University of Science



and Technology, Hisar, Haryana (India) during 2010-11. To find the variable difference of the treatment, we used the Zung questionnaire before and after the treatment to get the result. In this study, EMG of corrugator supercilli in being examined by placing electrodes on the selected area and then observations were recorded before and after the treatment is being written so as to analyze the effectiveness of the treatment i.e. effectiveness of the Jacobson Relaxation Technique. After treatment we found that this technique helps the students to get out of the anxiety and depression effectively. The results observed during pre and post session of treatment, varied significantly at 0.001%. Also I would like to bring your notice that I searched many databases like COCHRANE, PUBMED, but no any relevance information was available. Hence, these research findings may initiate the use of the relaxation techniques in patients with anxiety and depression especially among the students to relieve their stress throughout.

Keywords: Anxiety, depression, EMG and Jacobson relaxation technique.

ISCA-ISC-2015-9FMDN-01-Poster

Importance of Basil to Human

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Abstract: Extract of *Ocimum tenuiflorum* can be used as Anti-virus substance. Extract of *Ocimum tenuiflorum* prepared in copper flask instead of glass flask by applying fractional distillation method. It is also use as perfect anti bacterial. Now in these days *Ocimum tenuiflorum* using in manufacturing of different type of medicine, have been developed for different type of diseases. The Antagonist and Pantagonist substance of *Ocimum tenuiflorum* make it free from side effect. Virus and bacterial transitional person used this plant as a medicine in ancient India through Indians. This extract suspended toxic or harmful substance from blood and body organ such as lungs, heart, antibody system etc. This herb a cleaning agent of atmosphere, 2*1 *2.5 meter cube area of surrounding become germ free in 35 minutes and 25 seconds through a single plant. Anti bodies of patient becomes protected from germs for 90 days by using 200 ml extract of *Ocimum tenuiflorum*.

Keywords: Basilm, human, anta gonised, pentagonised.

ISCA-ISC-2015-9FMDN-02-Poster

Diagnostic and Therapeutic Uses of Radiation in Cancer

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Abstract: The uses of radiation have been incorporated as a vital part in cancer medicine to diagnose and treat the cancer. A study was conducted during August, 2015 by visiting hospitals, consulting medical professionals and reviewing literature. The Mammography and Computed Tomography use ionizing radiation (X-Rays) while Magnetic Resonance Imaging (MRI) uses non-ionizing radio waves together with strong magnetic field, to diagnose the tumor conditions. Mammography is used to screen and diagnose the breast cancers. CT images help in diagnosing the tumors of brain, lungs, abdomen, pelvis and bones. Meanwhile, a nuclear imaging technique- Positron Emission Tomography (PET) has been combined with Computed Tomography (CT) to delineate tumor volume, stage tumor, monitor reoccurrence and design appropriate treatment plans. The MRI images provide information on presence, size and extent of cancerous condition at different body parts like brain, lungs, abdomen, pancreas, prostate and uterus. It is of suggestive role in starting, continuing or stopping Chemotherapy or Radiotherapy. Based on type and location of cancer, a particular type of ionizing radiation: photon radiation-X-rays and Gamma rays (localized ones), and particle radiation-electron (skin or lymph node), neutron (head, neck, prostate, inoperable type) and carbon ion (radio resistant tumors), is only used in treatment.

Keywords: Cancer, radiation, mammography, CT, MRI, PET-CT, Gamma rays.

ISCA-ISC-2015-9FMDN-03-Poster

Vitriolage and Beyond: Case Reports of Hate Crime against Women

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Abstract: Vitriolage or acid attack, a heinous crime committed with intention to disfigure a person has come into view as an extremely brutal gender based crime especially against young women in India and also in other part of world mainly in South Asia over the past few years. India is facing an alarming situation of crime against women such as rape,



domestic violence, dowry deaths etc. In recent year's cases of vitriolage are on the rise in both urban and rural India. By understanding the gravity of crime, section 326A and 326B was incorporated in the prevailing Indian Penal Code and came into effect from 3 February 2013. State Forensic Science Laboratory Delhi receives a number of cases pertaining to acid attacks every year. We present here four such cases which were received for forensic examination in 2013. The exhibits were analyzed using Ion Chromatography apart from classical tests in order to strengthen the forensic reports and play vital role in conviction of the accused. This paper also encompasses the necessity of controlled sample, quality of water used in analysis, importance of packing of exhibits, role of investigating agencies/police in collection of exhibits, which play crucial role in proving the sanctity of the forensic examination.

Keywords: Vitriolage, forensic, exhibits, ion chromatography, police.

ISCA-ISC-2015-9FMDN-04-Poster

Rapid Screening of some Plant Poisons by TLC using a Novel solvent system-A Forensic Approach

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Abstract: The forensic scientists are regularly confronted with the challenge of detection of the specific plant toxins in the exhibits viz. visceral tissues, plant materials, crime scene related exhibits, pharmaceutical preparations, industrial formulations and traditional medicines to confirm their presence which might be the result of homicide, suicide, negligence, criminal intent for loss of life etc. Plant poisons such as *Abrus Precatorius*, *Strychnos nux-vomica* and *Plumbago zeylanica* have been used in instances of death of human beings, cattles, aquatic life etc. Thus, the need has been felt for ensuring fast and reliable detection of these plant poisons. Hence, we have developed a simple, rapid, adaptive, economical and selective thin layer chromatographic method using a novel solvent system for the qualitative detection of the toxic constituents of these plant poisons. We detected the active constituent of these plants in spiked visceral tissues by using an efficient extraction method. The proposed novel solvent system comprising toluene, chloroform and methanol can be used in routine analysis for successful rapid screening of these plant toxins by the forensic laboratories. Detection of all the three toxins by using a common solvent system has not been reported to the best of our knowledge.

Keywords: Plant poisons, thin layer chromatography, solvent system, visceral tissues, forensic.

ISCA-ISC-2015-9FMDN-05-Poster

Study of Heavy Metals (Cu, Cd, Pb and Zn) in different Water samples by using Trace Metal Analyzer

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Abstract: Water is important for everyone at all stages of life. The excessive use of water in various household activities leads to water scarcity which is going to be a big future problem. It is said that probably next world war if it happens; will be due to water. Management of waste water becomes essential to save water like released during functioning of reverse osmosis (RO) and Air conditioners (AC) etc. which produce a huge quantity of waste water. These waste water can be re-used, if it becomes free from various heavy metals that may result in hazards. The different types of water such as ultrapure, RO drinking water, tap water, well-water, waste RO water and AC water were screened for presence of heavy metals viz. Cu, Cd, Zn and Pb. Some of these are essential elements of human body but in larger quantities may produce toxic effects. The heavy metal analysis was done using Trace Metal Analyzer (TMA) that works on the principles of voltammetry and polarography. The heavy metals in Ultrapure and drinking RO water were nil while only zinc was found in AC (0.7 mg/l), tap water (2.24 mg/l), waste RO water (1.6 mg/l) which is under permissible limits fixed by WHO (3mg/l). The waste water produced by RO and AC can't be fit for drinking due to high total dissolved solids (TDS) while it can be used for other household purposes, like cleaning, laundry and irrigation purposes. The other parameters are conductivity, total dissolved solids, salinity, and resistivity, which need be determined in future to do waste water management.

Keywords: Trace metal analyzer, voltammetry, polarography, RO, total dissolved solids, AC, zinc.



10. Family, Community and Consumer

ISCA-ISC-2015-10FCC-Guest Speaker

Effect of rising Population on Community Development

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Abstract: The background of the study was my perception of the various problems arising out of rising population and as to how it is effecting the development of the whole community. The study is being carried out in the various urban/rural areas of Udaipur. Now a day's inspite of so much of awareness programmes being conducted by govt. as well as NGOs all over the country the population of the country is on the rise and subsequently the varied problems such as unemployment, poverty crime and corruption seems to be on the rise. Any individual must understand that if family size is smallll then only all the amenties can be provided to every member of the family. The objective of the study is to find out methods by which the mass population can understand the complications of rising population in our country. The methods being adopted are random sampling, questionares and schedules. Preliminary results show that lack of sincerety and awareness especially in the rural areas is the main problem.

Keywords: Population, community, unemployment, family, poverty, urban, rural, awareness.

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- Research Journal of Family, Community and Consumer Sciences family@isca.in



11. Material Sciences

ISCA-ISC-2015-11MatS-02-Oral

Growth of KCl: Ag Crystals and Study of Optical Transformation and Thermal Stability of its Colour Centres

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Abstract: The present work is centred on the study of the optical and thermal transformation and stability of the X-ray induced colour centres in KCl:Ag (85 ppm) crystals using thermoluminescence (TL) as a tool. The TL glow curves, TL spectra of X-irradiated Ag-doped KCl have been measured. Thermoluminescence studies of X-ray irradiated KCl:Ag crystals can establish the optical transformation and thermal stability of Ag centres in different valence states. The Ag ions established only at cation sites in different valence states are involved in the recombination luminescence process. Thermoluminescence is highly sensitive over optical absorption. The obtained data of TL spectra enables to monitor the transformation processes. It is shown from the experimental thermoluminescence studies that the 557 nm recombination luminescence emission predominant in the 95°C glow peak is due to Ag⁰ atoms at cation sites while the 545 nm emission predominant in the 135°C glow peak is due to Ag⁺ centre. Further this studies reveal that electrons trapped by impurity ions are mostly not destroyed by optical bleaching, which normally occurs during x-ray irradiation, but they undergo transformation and stabilize in different valence states both in cationic and anionic sites. This indicates that Ag⁰ atoms in anion sites are non-luminescent.

Keywords: Thermoluminescence, optical, transformation, thermal stability, Ag⁺ centres, anion sites.

ISCA-ISC-2015-11MatS-04-Oral

Preparation of Fly ash based mixed Matrix Ultrafiltration membrane using Polysulfone as base Polymer

Randeep Singh Chaudhary, Lokesh Lohani and Mihir Kumar Purkait

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Abstract: Fly ash was utilized to prepare carbon nanotubes (CNTs) and was used for the fabrication of mixed matrix polysulfone (PSF) membranes. Polyethylene glycol (PEG) was used as the pore former and 1-methyl-2-pyrrolidone (NMP) as solvent with prepared CNTs as modifiers for the preparation of PSF polymeric membranes by non-solvent induced phase separation (NIPS) technique. The prepared CNTs and modified PSF membranes were characterized by using techniques like thermo gravimetric analysis (TGA), raman spectroscopy, x-ray diffraction (XRD), x-ray fluorescence (XRF), transmission electron microscopy (TEM), fourier transform infrared spectroscopy (FTIR), field emission scanning electron microscopy, energy dispersive x-ray (FESEM; FESEM-EDX), and atomic force microscopy (AFM). The characterization results revealed the composition and size of the prepared CNTs. Prepared CNTs were having average diameter of 30.20 nm. Liquid-liquid displacement porosimetry (LLDP) was used to demonstrate the pore size distribution of the prepared membranes. The prepared membranes were having pore sizes in the range of 2.72 nm to 2.82 nm, which confirms that the prepared membranes are in ultrafiltration (UF) range. The CNTs used as an additive in the prepared membranes shown promising results for the improvement of hydrophilic and antifouling nature of the modified membranes. The permeation studies have shown increase in pure water flux (PWF) from 36.66 L m⁻² h⁻¹ to 125.70 L m⁻² h⁻¹. Also the water contact angle (CA) was decreased from 79.4° to 50.2° for the modified membranes. The antifouling effect of the prepared membranes was investigated with the help of Bovine serum albumin (BSA) solution.

Keywords: Fly ash, carbon nanotube, asymmetric membrane, polysulfone, ultrafiltration.

ISCA-ISC-2015-11MatS-06-Oral

Multifunctional Polymer Engineering of CuSO₄ doped Polystyrene Polymer film complexes

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Abstract: PMMA, PVA play an important role in the family of polymers, because of its applications in a variety of engineering and biomedical areas. The metal salts, Chemical Complexes. Compounds, Halides with polymers form the films. The physical and chemical properties of a polymer needed for specific application may be obtained by adding or



doping like metal salts. Polystyrene, CuSO₄ doped Polystyrene films were prepared in the lab. These films subjected to UV visible absorption and dielectric properties study suggests that the formation of charge transfer complexes. Although the conduction mechanism is unclear, it is generally accepted that the dissociated metal cat ions contribute to DC conductivity by achieving mobility through the micro-Brownian motion of polymer. These ion-conduction polymers have extensively importance in industrial applications such as a polymer battery. That is why most studies to date have focused on the motion of ions. The degree of orientation of the polymer chains is affected by the moldings thickness. Thin moldings are more highly oriented and therefore give the highest strength and module values parallel to the flow direction. The degree of orientation of the polymer chains is affected by the moldings thickness. Within the limits of decomposition temperatures, higher molding temperatures lead to higher orientation and consequently to higher strengths and module. The reports of these thickness and observed properties are new things in the CuSO₄ doped Polystyrene polymer film matrix.

Keywords: Polystyrene, metal salts, thermosetting film composites, CTC Complexes, dielectric properties.

ISCA-ISC-2015-11MatS-07-Oral

Sulfur treated Electrodeposited ZnO/Cu₂O Solar cell

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Abstract: The increasing demand of energy imposes us to explore environmentally clean resources for future. Solar energy is one of the most promising resources to solve the predicament of energy shortage. The nontoxicity and abundance of solar energy materials in the earth are among the key requirements to solar energy conversion technologies. From this point of view, copper and zinc based solar cell structure p-Cu₂O/n-ZnO is special interest. The p-type cuprous oxide (Cu₂O) films were electrodeposited on electrodeposited n-type ZnO on FTO substrate to form a p-Cu₂O/n-ZnO heterostructures. XRD and SEM analysis revealed that the films were of good structural quality with the substrates being well covered by the films. The p-Cu₂O/n-ZnO heterojunction showed good photovoltaic properties and diode characteristics. Surface of the Cu₂O films which had undergone the ammonium sulfide treatment showed enhanced photocurrent. Resulting sulfur treated p-Cu₂O/n-ZnO solar cell structure produced an energy conversion efficiency of 1.64 % with V_{oc} = 320 mV and J_{sc} = 8.2 mAcm⁻², under AM 1.5 illumination.

Keywords: Sulfur, electrodeposited, ZnO/Cu₂O, solar cell.

ISCA-ISC-2015-11MatS-08-Oral

Sulfur treatment of Electrodeposited Nanocrystalline cuprous Oxide

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Abstract: The development of an effective and a facile method for the controlled synthesis of cubic nanostructure Cu₂O with a high yield without any expensive or toxic surfactants, organic solvents, templates and high temperatures are still needed. Herein such a method is reported with a simple low temperature surfactant and template free one-pot electrodeposition of Cu₂O cubes of dimension about 100 nm. To the best of our knowledge, copper oxide nanostructures were prepared by using this route for the first time. In nanocrystalline films, number of grain boundaries will be higher than that in microcrystalline films. Surface atoms and grain boundaries usually have unsaturated or dangling bonds and defects. In this paper, it is discussed that the sulfur passivation by (NH₄)₂S treatment is very useful for modifying the surface of nano cubes in Cu₂O thin films. Results show that the passivation increases the photocurrent significantly while decreasing the resistivity of the Cu₂O thin film.

Keywords: Sulfur, electrodeposited, nanocrystalline cuprous, oxide.

ISCA-ISC-2015-11MatS-09-Oral

A Study of the Refractive Index, Optical Transition, Optical Band Energy Gap and Urbach Energy of TiO₂ Doped PMMA Films

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Abstract: UV-visible studies on titanium oxide doped samples of poly (methyl methacrylate) films have been undertaken



and the absorption data used to determine the nature of the optical transition. Further, the optical band energy gap and Urbach energy of the pure and doped samples have also been calculated. Refractive index measurements were made on the pure and titanium oxide doped poly (methyl methacrylate) films at visible light wavelengths of 405, 458, 492.2, 499, 546, 589, 632.8, 659.2, 670.2 nanometer. Modelling of the optical dispersion data was done by theoretical as well as empirical models and the quality of the fits was compared by the residuals. It was seen that both the Sellmeier and Helmholtz theoretical models as well as the Herzberger and Schott equations for optical glasses gave good fits.

Keywords: Optical transition, optical band energy gap, Urbach energy, refractive index, optical dispersion models.

ISCA-ISC-2015-11MatS-11-Oral

Synthesis of Silver Nanoparticles from Aqueous Extract of *Centella asiatica* and *Swertia chirayita* and Study of their Antibacterial and Antioxidant Activities

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Abstract: Green synthesis of AgNPs has gained special attention because of it being environment friendly, low cost to operate and requirement of low energy. This work focuses on the preparation of silver nanoparticles (AgNPs) via green method and on the screening of their antimicrobial and antioxidant activities. In this work, AgNPs were synthesized by reducing silver nitrate with the aqueous extracts of two different plants *Centella asiatica* and *Swertia chirayita*. Synthesis of AgNPs was monitored by UV-Vis spectrophotometer. The morphological features of the nanoparticles hence formed were characterized by scanning and transmission electron microscopy. The UV-Vis spectrum showed the peak between 320-340 nm for AgNPs synthesized from *C. asiatica* while for *S. chirayita* synthesized AgNPs, the peak was observed between 360-380 nm. The antibacterial activity of AgNPs has been assayed whereby the AgNPs synthesized from both extracts showed significant antimicrobial activity. Both AgNPs showed highest zone of inhibition against *Klebsiella* and *Bacillus* followed by *E. coli*. In contrast, the plant extracts showed potential antioxidant activity compared to silver nanoparticles. 500 µg of aq. Extract of *C. asiatica* showed 73% inhibition of DPPH free radicals while same amount of *S. chirayita* showed 80% inhibition.

Keywords : Centella asiatica, Swertia chirayita, Silver nanoparticles, Antibacterial Activity, Antioxidant Activity.

ISCA-ISC-2015-11MatS-01-Poster

High Temperature Degradation Study of Some Strongly Acidic Cationites

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Abstract: The thermal degradation of some sulfonic cationites namely Amberlite IR-120, Indion-223 and Indion-225 was investigated using instrumental techniques like thermal analysis (TG) and Scanning Electron Microscopy (SEM). Fourier Transform Infrared Spectroscopy (FTIR) was used to characterize the resins degradation steps. The sulfonic cationites undergo degradation through dehydration, followed by decomposition of sulfonic acid functional groups liberating SO₂. The thermal analysis shows that up to 200°C, Indion-225 cationite shows mass loss of only 13%, as against mass loss of 21% and 30% shown by Amberlite IR-120 and Indion-223 respectively. The thermal analysis at a higher temperature up to 520°C, Amberlite IR-120 cationite gets completely burned, while Indion-225 and Indion-223 shows total mass loss of 25.43% and 61.61% respectively. Hence the thermal stability of three cationites increases in the order of Amberlite IR-120 < Indion-223 < Indion-225.

Keywords: Degradation, sulfonic cationites, Thermal analysis, Scanning electron microscopy, Fourier transform infrared spectroscopy, Amberlite IR-120, Indion-223, Indion-225.

ISCA-ISC-2015-11MatS-02-Poster

Study of Uni-bivalent Ion exchange reactions using strongly acidic cation exchange Resin Duolite ARC 9351

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Abstract: There are number of liquid processes waste streams at chemical processing, nuclear power plants, nuclear fuel



reprocessing plants and nuclear research centers that requires treatment for removal of various contaminants. One of the most common treatment methods for such aqueous streams is the use of ion exchange, which is a well developed technique that has been employed for many years in chemical as well as nuclear industries. While designing an ion exchange liquid waste processing system it is desirable to have an adequate knowledge about the distribution coefficient values and the selectivity behaviour of these ion exchange resin towards different ions present in liquid waste. Generally the selected ion exchange materials must be compatible with the chemical nature of the waste such as type and concentration of ionic species present as well as the operating parameters notably temperature. Considerable work was done by previous researchers to study the properties of the ion exchange resins, to generate thermodynamic data related to various uni-univalent and heterovalent ion exchange systems. Recently theories explaining ion exchange equilibrium between the resin phase and solution was also developed. A number of researchers carried out equilibrium studies, extending over a wide range of composition of solution and resin phase. Attempts were also made to study the temperature effect on anion exchange systems for computing the thermodynamic equilibrium constants. However very little work was carried out to study the equilibrium of cation exchange systems. Therefore in the present investigation attempts were made to study the thermodynamics of uni-bivalent cation exchange equilibrium, the results of which will be of considerable use in explaining the selectivity of ion exchanger for various bivalent ions in solution. Therefore in the present study attempts are made to understand the selectivity behaviour of ion exchange resin Duolite ARC 9351 for inorganic cations like barium and strontium on the basis of thermodynamic concept. The study of uni-divalent ion exchange equilibrium was performed by equilibrating ion exchange resins in H⁺ form with Ba²⁺ and Sr²⁺ ion solution in the temperature range of 30.0°C to 45.0°C for 3 h, when the following ion exchange reactions take place. The equilibrium constant K value was calculated by taking into account the activity coefficient of ions both in solution as well as in the resin phase. From the equilibrium constant K values calculated at different temperatures the enthalpy values were calculated. For reaction (1) with rise in temperature, the K values increases from 10.4×10^{-3} to 17.1×10^{-3} , while for reaction (2) the values increases from 6.8×10^{-3} to 12.8×10^{-3} , indicating endothermic ion exchange reactions having enthalpy values of 25.4 kJ/mol and 39.2 kJ/mol respectively. The low enthalpy and higher K values for barium ion exchange reaction indicates more affinity of the resin for barium ions as compared to that for strontium ions also in the solution. The thermodynamic data obtained in the present experimental work will be useful to understand the selectivity behaviour of ion exchange resins for various ions in solution thereby helping in characterization of resins.

Keywords: Uni-bivalent ion exchange reactions, enthalpy, equilibrium constant, endothermic reaction, selectivity, strongly acidic cation exchange resin, Duolite ARC 9351.

ISCA-ISC-2015-11MatS-03-Poster

Perchloric Acid degradation study of Nuclear Grade Anion Exchange Resins Auchlite ARA-9366

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Abstract: The present study deals with performance evaluation of nuclear grade strong base resin anion exchange resins Auchlite ARA-9366 degraded using 0.005M and 0.01M perchloric acid. The resins in chloride form were degraded by treating with 0.005 M and 0.01M HClO₄ for 24 h under continuous mechanical stirring. The degraded resins in chloride form were equilibrated separately with bromide and iodide ion solutions of different concentrations in the temperature range of 30.0 - 45.0 °C for 3 h when the following ion exchange reaction will take place and the equilibrium constants (K) values for the above two ion exchange reactions were calculated. The results indicate that during reaction (1) with rise in temperature the K values decreases from 4.595×10^{-2} to 3.443×10^{-2} for resin degraded using 0.005 M HClO₄ medium which was lower than the decrease in K values from 4.614×10^{-2} to 3.74×10^{-2} observed for the resin degraded using 0.01M HClO₄ medium. Similarly for ion exchange reaction (2) with rise in temperature the K values decreases from 27.59×10^{-2} to 22.04×10^{-2} for resin degraded using 0.005M HClO₄ medium which was lower than the decrease in K values from 27.87×10^{-2} to 19.56×10^{-2} observed for the resin degraded using 0.01M HClO₄ medium. The decrease in K values with rise in temperature indicate exothermic ion exchange reactions which was supported by negative enthalpy values obtained during the two ion exchange reactions carried out by using both the resins. The thermodynamic data obtained here was used to predict the performance suitability of the chemically degraded nuclear grade strong base resin. The present experimental technique can be extended further to understand the performance behaviour of various nuclear as well as industrial grade ion exchange materials which might get exposed to stringent degradation conditions during separation of different ionic species present in industrial waste water effluents.

Keywords: Nuclear grade resins, strong base anion exchange resin, Auchlite ARA-9366, chemical degradation.



ISCA-ISC-2015-11MatS-04-Poster

Application of Thermodynamic concept to predict the feasibility of Uni-Univalent and Uni-bivalent ion exchange reactions using Nuclear grade anion exchange resin Indion-102

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Abstract: Organic ion exchange resins are used in a number of chemical decontamination or cleaning processes and in nuclear industries for removal of radionuclide. Nowadays, ion exchange resins are not only used for separation but also used as a catalyst. In recent years, use of organic ion exchange resins as a heterogeneous catalyst in liquid phase reactions has greatly increased due to their advantages such as high activity, selectivity, reusability, ease of separation etc. The main advantages of synthetic organic ion exchange resins are their high capacity, wide applicability, wide versatility and low cost relative to some synthetic inorganic media. Efforts to develop new organic ion exchangers for specific applications are continuing and various aspects of ion exchange technologies have been continuously studied to improve the efficiency and economy of their application in various technological applications. The selection of an appropriate ion exchange material for treatment of liquid waste is possible on the basis of information provided by the manufacturer. However, since the selection of the appropriate ion-exchange material depends on the needs of the system, it is expected that the data obtained from the actual experimental trials will prove to be more helpful. Further, for proper selection of ion exchange resin, it is essential to have adequate knowledge regarding their physical and chemical properties, which forms the complementary part of resin characterization study. A number of researchers performed carried out equilibrium studies related to various uni-univalent and heterovalent ion exchange system to generate thermodynamic data, extending over a wide range of composition of solution and resin phase. Among them, extensive work is done to study the temperature effect on cation exchange systems for computing the thermodynamic equilibrium constants. However, very little work is carried out to study the equilibrium of anion exchange systems. Therefore, in the present investigation, attempts was made to understand the difference in univalent (I^-) and bivalent (SO_4^{2-}) ionic selectivity of the nuclear grade anion exchange resin Indion-102 based on the thermodynamic equilibrium constants. The resins in Cl^- form were equilibrated separately with I^- and SO_4^{2-} ions solution for 3h in the temperature range of 35.0 to 45.0 °C, when following ion exchange reactions take place. The equilibrium constant K value for bivalent SO_4^{2-} ion was calculated by taking into account the activity coefficient of ion both in solution as well as in the resin phase. The K values calculated for reaction (1) were observed to decrease from 0.306 to 0.174, while that for reaction (2) the values decrease from 2.98×10^{-3} to 1.68×10^{-3} with rise in temperature. The enthalpy values for the above two reaction systems were calculated to be 3.86 kJ/mol and 16.28 kJ/mol respectively. Based on the enthalpy and equilibrium constant values obtained for the two reaction systems it appears that for Indion-102 resin reaction (1) is thermodynamically more feasibility as compared to reaction (2) under the identical experimental conditions.

Keywords: Thermodynamics, uni-univalent ion exchange reactions, uni-bivalent ion exchange reactions, nuclear grade resin, anion exchange resin, Indion-102.

ISCA-ISC-2015-11MatS-05-Poster

Thermodynamic study of industrial grade weak base Auchlite A378 resin exposed to $HClO_4$ medium

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Abstract. The present study deals with performance evaluation of nuclear grade strong base resin anion exchange resins Auchlite A378 degraded using 0.005M and 0.01M $HClO_4$. The resins in chloride form were degraded by treating with 0.005 M and 0.01M $HClO_4$ for 24 h under continuous mechanical stirring. The degraded resins in chloride form were equilibrated separately with bromide and iodide ion solutions of different concentrations in the temperature range of 30.0 - 45.0 °C for 3 h when the following ion exchange reaction will take place and the equilibrium constants (K) values for the above two ion exchange reactions were calculated. The results indicate that during reaction (1) with rise in temperature the K values decreases from 5.83×10^{-2} to 4.14×10^{-2} for resin degraded using 0.005 M $HClO_4$ medium which was lower than the decrease in K values from 6.04×10^{-2} to 4.09×10^{-2} observed for the resin degraded using 0.01M $HClO_4$ medium. Similarly for ion exchange reaction (2) with rise in temperature the K values decreases from 23.39×10^{-2} to 21.22×10^{-2} for resin degraded using 0.005M $HClO_4$ medium which was lower than the decrease in K values from 26.61×10^{-2} to 18.04×10^{-2} observed for the resin degraded using 0.01M $HClO_4$ medium. The decrease in K values with rise in temperature indicate exothermic ion exchange reactions which was supported by negative enthalpy



values obtained during the two ion exchange reactions carried out by using both the resins. The thermodynamic data obtained here was used to predict the performance suitability of the chemically degraded industrial grade weak base resins. The present experimental technique can be extended further to understand the performance behaviour of various industrial grade ion exchange materials which might get exposed to stringent degradation conditions during separation of different ionic species present in industrial waste water effluents.

Keywords: industrial grade resin; weak base resin; performance stability; Auchlite A-378; HClO₄ degradation.

ISCA-ISC-2015-11MatS-06-Poster

Biosynthesis of Ag-Cu Bimetallic Nanoparticles using Pongamia Pinnata leaves extract

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Abstract: Ag-Cu bimetallic nanoparticles has been synthesized using Silver Nitrate - Copper Chloride as a precursor and Pongamia Pinnata leaves extract as a reducing agent and stabilizing agent at room temperature under ordinary condition. The progress of the reaction is monitored by UV-visible spectrophotometer. The synthesized nanoparticle was obtained in powder form. The synthesized Ag-Cu nanoparticle was confirmed by FTIR and powder XRD. The size of Ag-Cu nanoparticle was determined by using powder XRD and found to be 22.77 nm. The lattice constant is 1.3 AU. The merits of this method are easily available material and inexpensive starting material, short reaction time, easy to carry out.

Keywords: Biosynthesis, pongamia pinnata leaf, copper chloride, bimetallic nanoparticle, silver nitrate

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12. Mathematical and Statistical Sciences

ISCA-ISC-2015-12MSS-Guest Speaker

Introduction to Cosmic Complete Graphs with 1-Vertices and 2-Vertices

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Abstract: In this research paper we are introducing a new type of non-planer complete graphs, called cosmic complete graph and we give a general solution of cosmic complete graphs. According to imagination “A graph is created by the Nature called cosmic complete graph, real complete graph or natural complete graph”. We start our work with our solar system and beginning from our planet “the Earth”. Also we work with its satellite “the Moon”. We are still work to study of complete graph with cosmology and use our imaginations. First we prove that cosmic complete graph with 1-vertices called singleton cosmic complete graph and denoted by C_{K1} . We also prove that cosmic complete graph with 2-vertices called line segment and denoted by C_{K2} . Thus we try to prove the graph of the Earth – Moon is also complete.

Keywords: Cosmic, graph, Earth, Moon, planet, solar system, cosmology,



ISCA-ISC-2015-12MSS-02-Oral

Characterization of One-Truncation Parameter Family of Distributions through Expectation

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Abstract: For characterization of one (left or right)-truncation parameter families of distributions (which includes notably negative exponential distribution, Pareto distribution, power function distribution, uniform distribution and generalized uniform distribution as special case) one needs any arbitrary non-constant function only in place of various approaches such as identical distributions, absolute continuity, constancy of regression of order statistics, continuity and linear regression of order statistics, non-degeneracy available in the literature. Path breaking different approach for characterization of general setup of one-truncation parameter family of distributions through expectation of any arbitrary non constant differentiable function of random variable is obtained. Applications and examples are given for illustrative purpose.

Keywords: characterization, truncation parameter families of distributions, negative exponential distribution, Pareto distribution, power function distribution, uniform distribution, generalized uniform distribution.

ISCA-ISC-2015-12MSS-03-Oral

Three Dimensional Fluctuating Free Convective MHD Flow and Heat Transfer along an Infinite Vertical Porous Plate

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Abstract: The free convective MHD flow and heat transfer along a vertical porous plate are investigated when a transverse sinusoidal suction velocity distribution fluctuating with time is applied. Due to this type of suction velocity at the plate the flow of the fluid becomes three dimensional one. For asymptotic flow condition, the wall shear stress in the direction of main flow and the rate of heat transfer from the plate to the fluid are obtained. The effects of various parameters entering into the problem are discussed and shown graphically.

Keywords: Free convective, fluctuating and MHD flow, heat transfer.

ISCA-ISC-2015-12MSS-10-Oral

Orthogonal Polynomials Associated with Multidimensional Moment Problem

Saroj Aryal

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Abstract: The generalization of orthogonal polynomials associated with the one-dimensional moment problem to multidimensional cases is nontrivial. In this work, we formulate a set of multivariate orthogonal polynomials generated



by multidimensional moment sequence.

Keywords: Moment problem, multisequence, orthogonal polynomials, multidimensional

ISCA-ISC-2015-12MSS-12-Oral

Factors Affecting Children Ever Born (CEB) in Botswana: Application of Poisson Regression Model

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Abstract: The number of children ever born to a particular woman is a measure of her lifetime fertility experience up to the moment at which the data are collected. Fertility is one of the key determinants of population growth and pattern and is essential for planning and achieving sustainable development. This paper attempts to identify the socioeconomic determinants of number of children everborn (CEB) to women of age 15-49 years using 2007 Botswana Family Health Survey-IV (2007 BFHS IV) secondary data. Poisson regression model is explored to study the impact of potential regressors on fertility (Camron and Trivedi 1998). The results indicate that the mother's education has negatively affected the average number of children ever born to a woman. Regarding employment status, mothers who are not working have more number of children ever born than the mothers with working status.

Keywords: Children Ever Born (CEB), poisson regression, negative binomial regression.

ISCA-ISC-2015-12MSS-14-Oral

Classification of Ultra Number System

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Abstract: Here we have discussed the classification of standard as well as non-standard elements of Ultra Number System. It is shown that a relation of 'infinitely close to' is an equivalence relation and multiplicative inverse of an infinite element is an infinitesimal. It is also shown that the class of finite elements forms a ring of which the class of infinitesimals forms an ideal.

Keywords: Standard element, Non-standard element, Infinitesimal, Ultra filter.

ISCA-ISC-2015-12MSS-15-Oral

Extended Quasi-Variational-Like Inequality In Banach Space

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Abstract: In this work, we consider and extend the theory of gap function from Extended Variational Like Inequality (EVLI) problems to the case of Extended Quasi- Variational- like Inequality (EQVLI) problems in Banach space.

Keywords: Quasi-variational inequality, Banach space, Gap functions, multivalued mapping, subdifferential.

ISCA-ISC-2015-12MSS-16-Oral

Theoretical Determination of Electrical Resistivity and Knight Shift of Liquid Metals

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Abstract: One of the important physical properties of a metal is its electrical resistivity. It is found to vary gradually with the increase in temperature. It is really a matter of interest to determine the resistivity of a metal when it melts. A method to study the electrical resistivity of liquid metals is the electrical conduction theory developed by Faber and Ziman using the concept of model pseudopotential. In this approach a liquid metal is assumed to consist of a system of ions and electrons. This concept of pseudopotential for calculating various dynamic properties of metals has been in vogue for the last three decades. An important application of pseudopotential is the calculation of transport properties of disordered materials such as liquid or amorphous metals. Resistivity of some binary liquid alloys has also been explained in details by Faber and Ziman through such pseudopotential. However, a problem with model pseudopotential is its transferability because sometimes with change of environment the change of parameters are also required to get good agreement with



the experimental results. The present work is based on Harrison's first principle pseudopotential technique which is basically an orthogonalised plane wave (OPW) method. Through this technique the electrical resistivity of monovalent liquid metals has been computed near melting point using well-known Ziman's formula. Side by side Knight shift of them has also been calculated on using Knight's formula. The concept is then extended for divalent and trivalent metals. The computed results for monovalent metals like sodium and potassium, divalent metals like magnesium and zinc and trivalent metals like aluminium and gallium have been compared with the experimental data and an overall reasonable agreement is obtained. In this course impact of various input parameters too has been studied viz. core energy eigenvalues, exchange parameter, OPW parameter, as provided by different authors.

Keywords: Liquid metals, pseudopotential, electron transport properties, electrical resistivity, Knight shift.

ISCA-ISC-2015-12MSS-17-Oral

Condition of Graph to possess Hamiltonian problem

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Abstract: The Hamiltonian problems include the Hamiltonian path and Hamiltonian cycle problems and have numerous applications in different areas. The aim of this paper is to present an interesting condition for a graph to possess a Hamiltonian path and Hamiltonian cycles. In particular we prove that the graph contains Hamiltonian path depends upon the degree sum of all pair wise three neighbouring vertex.

Keywords: Hamiltonian path, Hamiltonian cycle, degree of vertex.

ISCA-ISC-2015-12MSS-18-Oral

Application of Fourier Transform in Advance Communication

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Abstract: Communication is all based on mathematic is it digital, wired or wireless, while modulating the information signal, a high frequency sinusoidal carrier signal is use to transmit the message signal through a medium (cable or air).It is then received and demodulated using Fourier Transform analysis. So for understanding the communication technology, the processes of modulation, demodulated and Fourier Transform need to be explored first.

Keywords: Signal processing, Base Transceiver Station (BTS), Nuclear Magnetic Resonance (NMR) and Frequency Identifier Descriptor (FID).

ISCA-ISC-2015-12MSS-19-Oral

Importance of Mathematics Education in Medicine

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Abstract: Mathematics-related tasks are common in healthcare and include understanding nutrition information, interpreting blood sugar readings and other clinical data, adjusting medications, and understanding probability in risk communication. While literacy and mathematics are strongly correlated, we have identified many patients with adequate reading ability but poor mathematics skills. Better tools to measure mathematics and more studies to assess the unique contribution of mathematics are needed. This research can contribute to developing interventions to improve outcomes for patients with poor mathematics skills.

Keywords: Importance, mathematics, education, medicine.

ISCA-ISC-2015-12MSS-02-Poster

Statistical Study of the Free Energy of Mixing of the Binary Liquid Alloys of Potassium

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Abstract: There are a large number of binary liquid alloys which exhibit interesting behaviour as a function of concentration as regards the thermodynamic and electrical properties. The thermodynamic properties of mixing, especially in case of



complex forming alloys, are not symmetrical about the equi-atomic composition-deviating considerably from that of an ideal alloy. Here we have considered two such molten alloys of potassium-potassium-lead and potassium amalgam-and tried to calculate their free energy of mixing at different concentrations of the ingredients by using Flory's model. It is a statistical mechanical model based on the size factor of the constituent species of binary alloys. Our results explain the observed asymmetry in the free energy of mixing of the said binary liquid alloys around equi-atomic composition.

Keywords: Binary liquid alloy, free energy of mixing, interchange energy, activity, Flory's model.

ISCA-ISC-2015-12MSS-03-Poster

A Generic Approach to Test Divisibility

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Abstract: Divisibility testing is an important concept required in applications like cryptosystems. The most trivial way to perform divisibility testing is direct division where the dividend is divided by the divisor to check if the remainder is zero. Direct division process is time consuming. It also does not provide a practical method to perform divisibility testing in all the cases. Faster methods to test the divisibility of integers by a few small integers like 2, 3, 4 etc. are well-known. But the integers for which such divisibility tests exist are few in number. Frankly speaking, methods to test divisibility by prime numbers except 2, 3, 5 and 11 either do not exist or even if exist, they are not efficient. In this paper we have proposed a generic approach to test the divisibility by any integer coprime to the base of the number system in use. Since our approach is generic in nature, it does not guarantee efficiency in all the cases. Still the generic divisibility testing is a useful process and can be applied widely in mathematical packages.

Keywords: Divisibility testing, cryptosystem, integer, coprime.

ISCA-ISC-2015-12MSS-04-Poster

A Mathematical Study of the Activity of Ingredients in some Binary Liquid Alloys

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Abstract: Activity is one of the fortunate thermodynamic functions which are obtained directly from experiment. Here we have considered two lead-based liquid alloys e.g. Li-Pb and Na-Pb and two molten amalgams e.g. Hg-Na and Hg-K. Flory's model has been applied to study mathematically the activity of lithium and sodium in the former cases and that of mercury in the latter ones. This model is based on the size factor of the ingredients of a binary liquid alloy. In each and every case we have started with the mathematical expression for the free energy of mixing (G) according to this model. After knowing the ratio of the atomic volumes of the constituent species of an alloy the prime task becomes the determination of the interchange energy (W) between them. For this purpose the experimental values of ' G ' for different concentrations of the ingredients are collected. From these known values ' W ' has been computed by using the expression for ' G '. A suitable value of ' W ' is chosen from among the set of values so obtained. Putting this value of ' W ' the free energy of mixing is calculated for several concentrations and then compared with its observed values. Accordingly, a modified value of ' W ' has been considered and the calculations are repeated. In this way by the method of successive numerical approximations we have ascertained the value of the interchange energy. Thereafter with the help of standard thermodynamic relation activity has been computed. Our results explain the concentration dependence of the activity of the said ingredients in the present binary liquid alloys.

Keywords: Binary liquid alloy, Flory's model, activity, amalgam.

ISCA-ISC-2015-12MSS-05-Poster

A Mathematical Study of the Millimetre Wave Propagation through Plasma

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Abstract: Mathematical investigation has been carried out to evaluate the attenuation constant and phase velocity of millimetre waves in plasma. For this purpose the expression for permittivity of plasma medium is obtained. The concept of Faraday rotation has been introduced for utilisation of the same for further calculation. It has been found that the



attenuation constant and phase velocity both increase with the increasing value of plasma frequency. However, the value of attenuation constant decreases with increasing operational frequency.

Keywords: Plasma, Millimetre wave, Faraday effect, Attenuation constant, phase velocity.

ISCA-ISC-2015-12MSS-06-Poster

Entropy of Mixing of Two Lead Based Binary Liquid Alloys

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Abstract: The thermodynamic properties of the lead based binary liquid alloys are often found to vary considerably from the ideal values. Here two such alloys: lithium-lead and sodium-lead have been considered. Efforts are made to compute their entropy of mixing at different concentrations of the constituent species by using Flory's model. In this course the temperature dependence of the interchange energy has also been introduced. The results indicate that the size effect in the present alloys may not be an important factor for shaping the entropy of mixing as for other thermodynamic calculations.

Keywords: Binary liquid alloy, Flory's model, Interchange energy, Entropy of mixing.

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13. Pharmaceutical Sciences

ISCA-ISC-2015-13PCS-01-Oral

Development and Validation of RP-HPLC Method for Determination of Anastrozole in Human Blood Plasma and Pharmaceutical Formulations

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Abstract: A simple, sensitive and rapid reversed-phase liquid chromatography (RP-LC) method has been developed and validated for the determination of Anastrozole. Chromatographic separation was achieved on a RP C₁₈ column with isocratic elution using Methanol: o-Phosphoric acid 0.025mM (60:40 v/v) at a flow rate of 0.5 mL min⁻¹ and detection was performed at 215nm. Validation characteristics were evaluated in accordance with the International Conference on Harmonisation (ICH) guidelines viz., accuracy, precision and system suitability. Versatility of the method allows determination of Anastrozole in human blood plasma as well as in pharmaceutical tablets within 15min. The proposed method can find application in the routine analysis for the determination of Anastrozole in biological fluids, bulk and pharmaceutical tablets and hence appropriate for routine quality control as well as in clinical analysis. The relative standard deviation of area of six replicate injections of standard solution (20 ppm Anastrozole) is 0.46% which is well within the limit (NMT 5.0%). The relative standard deviation of content of Anastrozole in six replicate injections of sample preparation is 0.46% which is well within the limit (NMT 15.0%). It is found that method is linear in the range from 16 ppm (80%) to 30 ppm (150%). The correlation coefficient for Anastrozole is 0.9994. The average percentage recovery obtained for Anastrozole in Anastrozole 1 mg. tablet is 84%.

Keywords: Anastrozole, RP-HPLC, biological fluids, pharmaceutical tablets

ISCA-ISC-2015-13PCS-02-Oral

A view of Indian Pharmaceutical Industries Today and Tomorrow

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Abstract: Indian Pharmaceutical industry is the world's third-largest in manufacturing drugs. These Pharmaceuticals industries mostly located in Mumbai, Vapi, Hyderabad, Goa, Baddi (HP) and there major pharmaceutical hubs are in India. The government started to encourage the growth of drug manufacturing by Indian companies in the early 1960s and with the Patents Act in 1970. However, economic liberalization in 90s enabled the industry to become what it is today. This patent act removed composition patents from food and drugs and though it kept process patents, these were shortened to a period of five to seven years. The lack of patent protection made the Indian market undesirable to the multinational companies that had dominated the market and while they streamed out. Indian companies carved a niche in both the Indian and world markets with their expertise in reverse-engineering new processes for manufacturing drugs at low costs. Although some of the larger companies have taken baby steps towards drug innovation, the industry as a whole has been following this business model until the present. The number of purely Indian pharmaceutical companies is fairly low. Indian pharmaceutical industry is mainly operated as well as controlled by dominant foreign companies having subsidiaries in India due to availability of cheap labor in India at lowest cost. Most pharmaceutical companies operating in India, even the multinationals, employ Indians almost exclusively from the lowest ranks to high level management. Homegrown pharmaceuticals, like many other businesses in India are often a mix of public and private enterprise. India gained its foothold on the global scene with its innovatively engineered generic drugs and active pharmaceutical ingredients (API) and it is now seeking to become a major player in outsourced clinical research as well as contract manufacturing and research. Growths in other fields notwithstanding, generics are still a large part of the picture.

Keywords: Pharma industries, API, generic drugs, pharmaceutical chemistry and low cost.



ISCA-ISC-2015-13PCS-04-Oral

Phytochemical and Pharmacological Evaluation of *Amentotaxus assamica* Ferguson

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Abstract: *Amentotaxus assamica* Ferguson. is a critically endangered and endemic gymnosperm belongs to the Taxaceae family which located in some patches of Anjaw district of Arunachal Pradesh. During the field survey a new distribution location was also recognized from the same district. The present study was carried out to determine the proximate composition, preliminary phytochemical constituents both qualitative and quantitative, vitamin contents (Vitamin A and C), different carbohydrate constituents, both micro and macro elements, antioxidants (DPPH assay), antipyretic activities (Brewer's yeast-induced pyrexia in rats) of the methanol fraction, the analgesic activity and the psychopharmacological activities of the same fraction of the both leaf and bark extract. The GCMS profiling of the methanol extract showed the presence of many chemical compounds which are having the antioxidant property. The proximate composition of both leaf and bark consist a rich amount of carbohydrates, protein, crude fiber, crude oil, amino acid etc. The alkaloid, saponin, polyphenol, flavonoid, and tannin content indicating that the plant has potential bioactivity. The antioxidant activity of both bark and leaf was carried out with three different solvent viz. petroleum ether, methanol and water. Among these three PE extract shows highest IC₅₀ value as well as the methanol fraction have the stronger activity against the pyretic and psychopharmacological activity as compare to analgesic activity. Thus the present study partially revealed that *A. assamica* is a good source of medicine. But there is an urgent need of conservation of the plant for sustainable use.

Keywords: Antioxidant, Antipyretic, Analgesic, IC₅₀, Psychopharmacological and Phytochemistry.

ISCA-ISC-2015-13PCS-05-Oral

Dietary Antioxidants suppresses reactive Oxygen species of Lipid peroxide: A Scientific Review

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Abstract: Different animal studies suggested that the significant role for free radical processes in the pathogenesis of acute cardiovascular injury such as Ischemia/Reperfusion; are the more chronic multifactorial disease process for example atherosclerosis and restenosis. In contemporary scientific efforts in a number of laboratories have also been initiated to define the possible participation of free radical mediated oxidation of lipoproteins as a significant pathways leading to atherosclerosis. A basic question arises in the contemporary scientific research that the antioxidants are their possible contributions to the mechanisms of protection reported in those disease processes where free radicals may be contributing to acute and chronic cardiovascular injury? The dietary antioxidants may too contribute to prevent such type of cardiovascular disorders by antioxidant defense mechanisms. It was hypothesized many times that Vitamin E is a major lipid soluble antioxidant within the cell membrane and vascular system where it protects membrane fatty acids from lipid peroxidation. Beta-carotene and other carotenoids also provide anti-oxidant protection to lipid rich proteins. This paper is a scientific review paper and in the paper researchers attempt to put forward the dietary vitamin E and B-Carotene containing food stuffs and their role for neutralizing a reactive oxygen species; lipid peroxide that is a basis for a defense mechanism from atherosclerosis and hypertension.

Keywords: Atherosclerosis, antioxidants, free radical, lipoproteins, vitamin E, B-Carotene, cardiovascular system, antioxidant defense mechanism.



ISCA-ISC-2015-13PCS-08-Oral

Exploitation of *Rheum nobile* from the High Himalaya of Nepal: The Rhizome Extract Produced Diverse Pharmacological Effects in *In vivo* Experiments

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Abstract: *Rheum nobile* (Polygonaceae), an unexploited Himalayan rhubarb, is used ethnomedicinally to relieve pain and swelling. In the present study, phytochemical analysis and *in vivo* CNS depressant, analgesic, anti-inflammatory, antidiabetic and antifertility efficacies of the 80% ethanolic extract of *R. nobile* rhizomes were investigated. The extract contained a high phenolic and flavonoid contents of 1.22 g GAE and 4.00 g QE per 100 g of dried rhizome, respectively. A significant reduction of locomotor activity ($p < 0.0001$) in the Open field test in mice was observed. The extract showed highly efficient analgesic activity by greatly reducing acetic acid-induced writhes in mice. Compared to standard drug paracetamol (50.30% inhibition at dose 75 mg/kg), the extract provoked significant inhibitions of 66.60% and 81.49% at doses 250 and 400 mg/kg respectively after 1.5 h. In the Eddy's hot plate assay, the extract increased the reaction latency up to 774.59% at dose 400 mg/kg ($p < 0.0001$) displaying a better analgesic effect than paracetamol. In the Albumin-induced paw edema in rats assay, a maximal anti-inflammatory effect was observed at 400 mg/kg dose within 30 min ($p < 0.0001$). The extract also possessed hypoglycemic activity lowering blood glucose level in normoglycemic rats. Daily oral administration of the extract to pregnant female rats resulted decline in the fertility index in a dose-dependent manner.

Keyword: Analgesic, antidiabetic, antifertility, anti-inflammatory, depressant.

ISCA-ISC-2015-13PCS-11-Oral

Antioxidant property and Acetylcholinesterase inhibitory activity by Tea polyphenolics grown in different Agricultural practices

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Abstract: Antioxidant capacities of solvent extracts of *Cameliasinensis*(tea) variety TV25 grown in different agricultural practices in plain land of IIT Kharagpur's Agricultural and Food Engineering department were studied by analyzing free radical scavenging activities 2,2-diphenyl-1-picrylhydrazyl (DPPH), 2,2'-azino-bis-(3-ethylbenzothiazoline)-6-sulfonic acid (ABTS), and ferric reducing antioxidant potential (FRAP). The ethanolic extracts showed a comparatively higher amount of total phenolics, free radical scavenging activities in DPPH, ABTS, and FRAP assays in organically grown tea. The free radical scavenging activity values in DPPH assay are respectively 74.0 for vermicompost+vermiwash, 66.02 for vermicompost, 45 for Inorganic fertilizer and 56 in control in 300µg/ml tea extract concentration. The ethanolic extract showed significant acetylcholinesterase (AChE)-inhibitory activity with the IC₅₀ values of 53.60±0.65mg dry weight/mL for Vermicompost+Vermiwash followed by 51.50 ± 1.30 mg dry weight/ml in vermicompost, 41.00 ± 0.53 mg dry weight/ml in control and 37.00 ± 0.93mg dry weight/ml in inorganic fertilizer management practices.

Keywords: Organic farming, vermicompost, DPPH assay, acetylcholinesterase, inhibitory, activity.

ISCA-ISC-2015-13PCS-12-Oral

The Effects of Pharmaceutical Pollution on Water Quality

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Abstract: Pharmaceuticals commonly found in the environment are disrupting streams, with unknown impacts on aquatic life and water quality. So reports a new paper that highlights the ecological cost of pharmaceutical waste and the need for more research into environmental impacts.

Keywords: Effects pharmaceutical, pollution, water, quality.



ISCA-ISC-2015-13PCS-01-Poster

Suitability of some Ayurvedic herbs and Formulation in terms of Heavy metal daily Intake through the recommended Medication dosage

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Abstract: Eight herbal medicines (Six herbal extracts Yastimadhu, Aloe vera, Haritaki, Ashwagandha Rasna, Nirgundi and two herbal formulations Arogyavardhini Vati, Chandraprabha vati) were tested for levels of heavy metals (Lead, Trace elements and Ultra trace elements (Nickel, Arsenic)). Both herbal extracts and herbal formulations showed varying quantities of heavy metals. However concentrations of heavy metals were greater in the herbal formulations as compared to herbal extracts. Iron was found in maximum quantities as compared to other heavy metals. Very high quantities of Iron were detected in the two ayurvedic formulations. The paper discusses the significance of these quantities in terms of daily intake dose given by various international FDA agencies. The intake of the heavy metals has been calculated by taking into account the recommended daily dose of given ayurvedic medicines. Intake of heavy metals through medication is compared with the daily maximum dose given by the various agencies. It is observed that the entire heavy metals daily intakes as per recommended medicinal dose are within the prescribed limits. Out of the heavy metals studied Iron, Zinc and copper are classified as micronutrients /trace elements and Nickel is known as ultra trace element, minimum level of these are required for good health. The prescribed medication of tested ayurvedic medicines provides the required intake of these Trace elements and ultra trace elements. In conclusion the medicines have safe limits of heavy metals and in addition provide for required micronutrient and ultra trace elements.

Keywords: Heavy metals, yastimadhu, aloe vera, haritaki, ashwagandha rasna, nirgundi, arogyavardhini vati, chandraprabha vati.

ISCA-ISC-2015-13PCS-03-Poster

Reverse Phase High Performance Liquid Chromatography for Simultaneous Determination of Aceclofenac and Thiocolchicoside in bulk and Pharmaceutical Dosage form

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Abstract: A simple, rapid and accurate high performance liquid chromatography method is described for simultaneous determination of aceclofenac and thiocolchicoside from combined dosage form i.e. tablets. The separation of drug was achieved on Polaris C18 (150 x 4.6 mm i.d.) with 5 μ particle size, column showed most favorable chromatographic pattern over the other columns. The mobile phase consisted of a mixture of buffer and acetonitrile (55:45 % (v/v)). The buffer was 0.01 M ammonium acetate solution adjusted the pH 3.4 with ortho-phosphoric acid. The detection was carried out at wavelength 270 nm. The mixture of buffer of pH 3.4 and acetonitrile (55:45% v/v) was used as a diluent. The method was validated for system suitability, linearity, accuracy, precision, robustness, stability of sample solution. The method has been successfully used to analyze aceclofenac and thiocolchicoside from combined dosage form i.e. tablets.

Keywords: Aceclofenac, thiocolchicoside, acetonitrile, ammonium acetate, ortho phosphoric acid.

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14. Physical Science

ISCA-ISC-2015-14PhyS-01-Oral

Spectral Efficiency of Solar Cell and Colour Temperature of Light Sources

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Abstract: Colour of any object is not consistent under different types of lighting. A white object appears reddish at sunrise or sunset and bluish-green on cloudy days. Different colour temperatures results changes in colour of the object. In photographic, photonic and colour matching applications, it is necessary to know the colour temperature of the light source used. However, the sensitivity of the solar cell differs at different wavelengths and therefore it is necessary to calibrate the cell and find its efficiency at different spectral regions. This paper presents the experimental method of calibration of silicon solar cell and measurement of colour temperature of different light sources. A silicon solar cell is calibrated for its spectral efficiency and its calibrated value is used for measurement of colour temperatures of incandescent light sources of unknown colour temperature. A light source of known colour temperature and a series of interference filters were used for the calibration. Solar cell efficiency was normalised to particular wavelength. The root mean square deviation for all the wave lengths were calculated and plotted against the colour temperature. Colour temperature was obtained from the curve between colour temperatures and r.m.s deviation which agrees very well with temperature of lamp for known voltage.

Keywords: Silicon, solar cell, colour, temperatures, interference, filters, Solar cell efficiency, root mean square deviation.

ISCA-ISC-2015-14PhyS-02-Oral

Equilibrium Positions of a Cable-Connected Satellites System in Neighbourhood of main Resonance

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Abstract: We study about the equilibrium positions of non-linear planer oscillation of the motion of a system of two cable-connected artificial satellites under the influence of earth's magnetic field, solar radiation pressure, shadow of the earth and earth's oblateness in the neighbourhood of the main resonance. B. K. M. method is applied to study the resonant oscillation of the system. Eccentricity of elliptic orbit of the centre of mass of the system is considered as a small parameter. Neutation and wobbling of orbit are not taken into account. Here, no equilibrium position of motion of the system is found to exist in the neighbourhood of the main resonance.

Keywords: Cable-connected satellites, elliptic orbit, Eccentricity, B.K.M. method, main resonance.

ISCA-ISC-2015-14PhyS-03-Oral

Equations of Motion of a Cable-Connected Satellites System under the Influence of Earth's Shadow, Solar Radiation Pressure, Oblateness of the Earth and Air Resistance

Santosh Kumar and Sangam Kumar*

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Abstract: Lagrange's equations of motion of the first kind have been exploited to derive a set of non-linear, non-homogeneous and non-autonomous differential equations for motion of a system of two cable-connected artificial charged satellites under the influence of earth's shadow, solar radiation pressure, oblateness of the earth and air resistance. The motion of the system is studied relative to its centre of mass which has been assumed to move along a Keplerian elliptical orbit. The linear and normalised equation of relative motion of the system has been obtained. Equations of motion have been obtained in rotating frame of reference and thereafter in Nechvill's Co-ordinate System.

Keywords: Satellites system, elliptical orbit, rotating frame of reference, Nechvill's Co-ordinate System.

ISCA-ISC-2015-14PhyS-04-Oral

Parrondo's Paradox: New results and New ideas

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Abstract: Parrondo's paradox is about a paradoxical game and gambling. Imagine two kinds of probability dependent



games A and B, mediated by coin tossing. Each of them, when played separately and repeatedly, results in losing which means the average wealth keeps on decreasing. The paradox appears when the games are played together in random or periodic sequences; the combination of two losing games results into a winning game! While the counterintuitive result is interesting in itself, the model can very well be thought of a discretized version of Brownian flashing ratchets which are employed to understand noise induced order. There are plenty of examples from physics to biology and in social sciences where the stochastic thermal fluctuations or other kinds actually help achieving positive movements. It is in this context, the Brownian ratchets and the kind of prototype games may be explored in detail. In our study, we examine various random combinations of losing probabilistic games in order to understand how and how far the losing combinations result in winning. Further, we devise an alternative model to study the similar paradox and idea. The work is mostly done by computer simulations. Analytical calculations to support this work, is under progress.

Keywords: Paradox, ratchet, brownian, game, gamble, noise

ISCA-ISC-2015-14PhyS-05-Oral

General Higher Order Intermodal Antibunching in two-mode Bose Einstein Condensate

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Abstract: We solve analytically the fully quantum mechanical Hamiltonian of a two-mode Bose Einstein Condensates (BECs) system using Sen-Mandal approach which is more general than the well-known short-time technique. These solutions are used to obtain the general higher order intermodal antibunching in the two mode BECs. We find the time dependent antibunching parameter in the inter-mode and the degree of antibunching parameter increases with order. The degree of nonclassicality can be manipulated with the magnitude of chemical potential difference between the modes and the interaction constants.

Keywords: Nonclassical effects, BEC, Sen-Mandal approach, Short-time technique, higher order antibunching, degree of nonclassicality.

ISCA-ISC-2015-14PhyS-07-Oral

Gamma Irradiation effects on some Biopolymer Electrolyte Films

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Abstract: A solid biopolymer electrolytes (BEs) based on hydroxypropyl methylcellulose (HPMC) doped with different concentrations of cadmium chloride (CdCl_2) and ceric ammonium nitrate ($(\text{NH}_4)_2\text{Ce}(\text{NO}_3)_6$ (CAN) were prepared by solution cast method. Different techniques have been employed to investigate the effects of structural and electrical conductivity behavior of these polymer electrolyte films upon gamma irradiation with different dose. XRD results revealed that the amorphous domains of HPMC polymer matrix was increased with increase in the salt concentration and with the gamma dose. The percentage of crystallinity is found to be high in pristine un-irradiated HPMC films. The temperature-dependent of HPMC based BEs system conductivity data obeys Arrhenius relationship. Conductivity enhancement in these BEs is caused not only by the increase in the concentration of dopant salt but also by the increase in mobility and diffusion coefficient of ions and with increasing gamma dose.

Keywords: Biopolymer electrolytes, gamma irradiation, crystallinity, DC conductivity

ISCA-ISC-2015-14PhyS-08-Oral

Radon in the Environment- A review

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Abstract: The measurement of radon and its decay products in indoor and outdoor environment has been the interest of many research scientists all over the world. Radon is inert radioactive noble gas; ^{226}Ra is the actual sources of radon, present throughout the earth crust. ^{226}Ra decay in soil and rocks resulting in the radon recoiling atom. The fraction of



radon generated in the soil, which escapes from the grains known as emanation fraction from which the emanation rate can be calculated. The transfer rate of radon per unit area from the earth surface or by the soil surfaces is referred to as radon exhalation rate. It is influenced by geophysical, meteorological parameters, sources of radium in the soil and rocks. Some applications of radon and their isotopes are used as tracer's studies problems in the environmental, biological and earth sciences. Radon and its daughter products are ubiquitous in the environment and hence radon in soil and air can be study to understand diverse process such as earth quacks, eruptive and non eruptive volcanoes. Apart from these beneficial applications, it has been well recognized in all over the world as, the inhalation of radon and its decay products are injurious to health. More human exposure is received from radon decay products in buildings as emerged as important issue. In view of the above importance, the present study is to estimate the radon exhalation rate in soil, building materials, and different floorings by using standard methods and also correlates with the meteorological parameters. The concentration of radon in different types of the buildings is also measured and correlates with radon exhalation rate and meteorological parameters, the obtained results are analyzed and compared with the national and international average values.

Keywords: Radon, exhalation, meteorological parameters, emanation.

ISCA-ISC-2015-14PhyS-02-Poster

Electrochemical Synthesis of Poly 2-Amino Pyridine as Conducting Polymer by Galvanostatic Method

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Abstract: Polymer films will prepared by galvanostatic electrochemical synthesis, which provides a constant oxidative current at the anode. The electrochemical deposition of monomer and their copolymer films was carried out by using a galvanostatic technique at temperature 27 °C in a one-compartment, three-electrode glass cell. The ITO coated glass plate will have to use as a working electrode, platinum foil as a counter electrode and Ag/AgCl as a reference electrode. The electrolyte solution will prepare in deionized water with optimum parameter. After synthesis the polymer coated electrodes will rinsed thoroughly in deionized water dried in cold air and then used for subsequent characterization. The synthesized composite films will subjected to various characterizations viz. galvanostatic electrochemical techniques. The FTIR, SEM, XRD etc. are methods use for characterization.

Keyword: Galvanostatic, monomer, polymer, electrodes, synthesis.

ISCA-ISC-2015-14PhyS-03-Poster

Structural, Optical and Electronic Properties of Hydrogenated Amorphous Silicon Thin Films

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Abstract: Hydrogenated amorphous silicon thin films have been deposited by plasma enhanced chemical vapour deposition (PECVD). Normally device quality Hydrogenated amorphous silicon (a-Si:H) films are deposited at very low power. Our aim is to deposit this material at high growth rate by applying high power density to cathode. The influence of the nature of the high growth rate on the structural, optical and electronic properties of the Hydrogenated amorphous silicon (a-Si:H) films has been studied. Structural properties were investigated by using x-ray diffraction and atomic force microscope, optical ones by using a UV-visible spectrophotometer and electronic properties by means of dc four-probe resistivity measurements. The refractive index, extension coefficient, energy band gap with various thickness of thin film is investigated using Manifacier et.al method.

Keywords: Amorphous material, PECVD, surface morphology, refractive index, extinction coefficient, energy band gap, resistivity measurements.



ISCA-ISC-2015-14PhyS-04-Poster

Analysis of bulk Modulus at High Compressions using Interatomic Potential Functions

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Abstract: We present an analysis for the bulk modulus of solids viz. Ne, Ar, Al, Cu, LiH, and MgO using interatomic potential functions due to Morse, Rydberg, and Davydov. The formulations for bulk modulus have been obtained using these potential functions. The results for bulk modulus as a function of volume are determined up to a compression of $V/V_0 = 0.5$ for each solid. The results are compared with the corresponding values obtained from the Shankar equation and the Hama-Suito equation of state.

Keywords: Equation of state, interatomic potential functions, bulk modulus, Metals and non-metals.

ISCA-ISC-2015-14PhyS-05-Poster

Industrial Waste Reinforced PF Composites: Measurement and Evaluation of Effective Thermal Conductivity

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Abstract: Oil-palm fibers were obtained from the industrial waste of oil mills. The fibers were treated chemically with acrylic acid, Toulene Diisocyanate (TDIC) and irradiated with g- radiations. Treated fibers were used as reinforcement in phenol-formaldehyde (PF) resin matrix to prepare composites. Surface topology of the composites was investigated by scanning electron microcopy (SEM). The effect of chemical treatment on thermal properties of composites has been investigated using a non-steady state method, the Transient Plane Source Technique (TPS). Effective thermal conductivity (ETC) and thermal diffusivity of the composites have been measured by TPS at room temperature and normal pressure. Effective thermal mconductivity of the composites has been evaluated by several theoretical models and compared with experimental results.

Keywords: Oil-palm fiber, g-irradiation, acrylic acid, TDIC, phenolformalehyde resin, transient plane source technique; Chemical treatment; thermal conductivity; thermal diffusivity

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15. Physical Education and Sports

ISCA-ISC-2015-15PES-01-Oral

Endurance Performance According to Circadian Cycle

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Abstract: The aim of this study was to examine the endurance performance according to circadian cycle. For this aim, 38 male students studying at Faculty of Sports Sciences (age between 20-27 years) participated the study. 20 m shuttle run test was used to measure the aerobic endurance performance. The measurements were taken in the morning (09.00-09.30 am), afternoon (14.00-14.30 pm) or evening (19.00-19.30 pm) time. The test sessions were performed in random order. For the statistical analysis Friedman two way variance analyses and Wilcoxon signed rank test was used. The results of the study showed that the number of shuttle was found higher in the afternoon than the morning time ($p < 0.0167$). Although there is no statistically significant difference, the numbers of shuttles were found more in the afternoon than the number of shuttles in the evening. As a conclusion, the best aerobic performance was performed in the afternoon. Due to the presence of such a difference, the measurement times have to be noted in future scientific studies. In addition, it's recommended that the aerobic training should be done in the noon time.

Keywords: Circadian, exercise, endurance.

ISCA-ISC-2015-15PES-02-Oral

A Study on the Effect of Belly dancing on selected Anthropometric Parameter of Middle aged Sedentary Females

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Abstract: A descriptive study to determine the prevalence of obesity and health risk by measuring waist circumference, hip circumference and waist hip ratio was undertaken. This study was carried out on 15 sedentary women aged 35-45 years. Two week Belly Dancing was given to the subjects at a renowned dance and fitness studio of Kolkata under 24° C. Prior to the study body weight, height, waist circumference and hip circumference of all the participants were taken. Based upon these values waist-hip ratio was calculated before and after the dance training. The percentage of overweight and obese was 40% respectively prior to the training. Dance and fitness is a good way to fight obesity hence Belly Dancing was taught and practiced under proper instruction by the subjects. The effects of the Belly Dancing were analyzed by using Paired sample 't' test. The obtained result showed that belly dancing achieved statistically significant improvement in total body weight loss and waist hip ratio ($p > 0.05$). Belly dancing proved to be a good routine which helped reducing the waist hip ratio which in turn reduced the risk of severe health conditions. Markers of central obesity i.e. waist-hip ratio appeared to be the most sensitive indicators of obesity followed by waist circumference and body mass index respectively as it indicated over weight and obesity four times as compared to other indicators.

Keywords: Belly Dance, WHR, sedentary, obesity, over weight.

ISCA-ISC-2015-15PES-03-Oral

Attitude of Employees of Jadavpur University towards the Participation of their Children in Games and Sports

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Abstract: The purpose of this study was to determine the attitude of parents towards sports programme and to find out their opinions whether negative or positive if any. Employees of jadavpur university department of physical education were considered as the subjects for this study. Sports, is considered as an important and integral part of general education which aims at the wholesome development of the individual. But in practice and from functional point of view it has not yet received that recognition due to its status as more of a practical oriented subject than a theoretical one. Many of the reasons could be attributed to this state of affairs. Orienting children to sports activities as of the preschool age could have an impact on taking their feelings of selfishness under control, gaining the talent of competition without disrupting the social harmony between them and instilling them with the feeling of challenge. Games can give parents and teachers a chance to discover the child's hidden talents. Therefore, a contribution to their education can be made in this way.



Parents' allowing their children to play games, providing necessary environments, giving importance to the place of toys and joining them in their plays will help children to complete their development better. Parents, with their good behaviors and attitudes, have a lot of chances to be a model in the sports activities of their children. Children's natural abilities are aimed at following not instructions but the role model. So it should be parents' task to be a good role model, to do the responsibilities towards their children, to make them gain the values that the society also accept, and to motivate them towards good and beneficial endeavors like sports. From the analysis of the responses made by the parents it is evident that most of them have highly positive attitude towards their children's participation in games and sports.

Keywords: Attitude, sports, games, society, children.

ISCA-ISC-2015-15PES-05-Oral

Swot Analysis of Inter University Tennis Championship

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Abstract: SWOT is an important technique that involves a discussion of an organization's strengths, weaknesses, opportunities, and threats. This process is commonly called SWOT analysis. SWOT analysis has been used extensively in all subjects including sports and physical education. SWOT analysis is defined as an examination of an organization's internal strengths and weaknesses, its opportunities for growth and improvement, and the threats the external environment presents to its survival. The purpose of the study was to carry out SWOT analysis of the inter university women tennis championship organized by Amity University, Noida. The research scholar developed a self structured Opinionnaire with the help of his guide and other faculty members available in the ASPESS department and other departments of Amity University. The Opinionnaire were administered to the sports female players of that particular women tennis championship and the coaches/managers of different teams. The overall opinion of players and coaches was that the competition has been organized in a befitting manner for all the female players and the host institute and all the sports facilities and other necessary facilities were good. However, few suggestions were given in order to improve the organizational and management aspects as well as other facilities related to the championship.

Keywords: Swot, opinionnaire, sports, players.

ISCA-ISC-2015-15PES-06-Oral

Efficacy of Yoga Therapy on Thyroidal and Lung Functions among the Women

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Abstract: The present study is entitled "Efficacy of yoga therapy on thyroidal and lung functions among the women". For this study 16 girls with thyroidal symptoms were selected from the PA College women's hostel, Mangalore. The study was conducted for one month from 4th March to 11th April 2015. The subjects were randomly divided into experimental group and control group. The experimental group people were gives the yogic practices for one month for the duration of one and half hour in a day from 6.00am to 7.30 am. The control group people were not given any special practices during the study period. The subjects in the both groups were undertaken the blood pressure reading, pulmonary function test and thyroid test (TSH, T₄, and T₃). The results of this study were analyzed by the student's t-test. After the yoga therapy every subject underwent the test showed the significant development in the pulmonary function and the systolic blood pressure among the experimental group compared to control group.

Keywords: Yoga therapy, lung functions, thyroid.

ISCA-ISC-2015-15PES-07-Oral

Body Composition and Motor Fitness between North Eastern Regional State Football Players

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Abstract: To study Body composition and motor Fitness differentiate between the six state football players of north eastern states of INDIA, on view to unfold the significance of these underlying variables like, age, height, weight and



BMI in body parameters and Fat %, BMR, Fat Mass, Fat Free Mass, Total Body Water body as the composition variables with 30 m dash (sec) ,6x10 m (sec) SBJ (m) Sits ups (1 min) VJ(cm) B andR (cm) 800 m(min) as Physical fitness parameters. 118 male football players of North Eastern regional states i.e. (Manipur, Nagaland, Arunachal Pradesh, Assam, Meghalaya and Mizoram) of INDIA, participated in the Dr. T. Ao Football Tournament 2010 held at Imphal, constitute the subject. The age, weight and Height of the footballers were measured by standard procedure. The subjects were measured Body Composition by using Tanita Body Composition Analyzer TBF-300A to assess the level of body composition factors such as BMI, %Fat, FFM, BMR, TBW. The motor fitness parameters 30 m dash, 6x10 m shuttle Run, SBJ (m) Sits ups (1 min) VJ(cm) Bend and reach, 800 m. the tests were administered during their respective centers. The result from the study reveals that the physical characteristics, body composition and motor fitness levels of these male football players of North Eastern regional states (Manipur, Nagaland, Arunachal Pradesh, Assam, Meghalaya and Mizoram) of India, were almost similar except body fat $\%(20.2 \pm 4.6)$ and fat mass $(9.6 \pm 3.5 \text{ kg})$ of Nagaland footballers were higher than the footballer from Manipur, Arunachal Pradesh, Assam, Meghalaya and Mizoram. And further compared with the 2014 world cup foot ball players on Age ,height ,weight and BMI.The result was found that the age, height and weight at the level of 0.05 significance with north eastern regional footballer of India

Keywords: BMI, % Fat, FFM, TBW, motor fitness

ISCA-ISC-2015-15PES-08-Oral

Different forms of Yoga and its Suitability in Modern Society

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Abstract: Yoga is a physical, mental, and spiritual practice or discipline that aims to transform body and mind. One of the best ways to improve mobility, core strength, and balance is Yoga. Yoga is a popular activity for athletes, children, and seniors. Yoga can be modified to suit all levels of fitness. Because there are a number of different types of yoga, it is important to know a little bit about each before deciding what type of yoga works best for an individual. It is important to know a little bit about each before deciding what type of yoga works best for an individual. Description of different types of yoga including Ashtanga, Hatha, Bikram, Anusara, Iyengar, Kundalini, Power, Viniyoga, Restorative, Sivananda, Svaroop, Jivamukti, Ananda, Bhakti, Karma, Jnana, Kriya, Raja, Swara yoga etc. are given in the present review. Suitability to the individual should be the criteria to select a type of yoga for practice. The need of the individual and his capability to perform yogic practice should be given prime importance while selecting the type of yoga. Deriving benefit in the form of health and wellness should be the goal of any type of yoga. Appropriateness of different forms of yoga in the modern society is discussed in detail.

Keywords: Yoga, types of yoga, benefits of yoga, health, wellness.

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16. Educational Sciences

ISCA-ISC-2015-16EduS-01-Oral

Effectiveness of e-Learning Strategy on Achievement of Slow Learners in Science

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Abstract: The present experimental study was undertaken with two objectives in view. i. to apply e-learning strategy in teaching and learning of class X science subject and ii. to measure the effectiveness of e-learning strategy with special reference to slow learners. Two matched groups of slow learners were constituted for the purpose of this experiment and a normal group comprising average and above average students was also formed in order to assess how far e-learning strategy enabled the slow learners to cope with normal students. The experiment was conducted for a period of three months at the rate of one hour per day in the evening hours and five units in the Xth standard science subject were covered. The control group and the normal group were taught through traditional lecture method while the experimental group learnt the subject through e-learning strategy. The obtained results show that the e-learning strategy was more effective than the traditional lecture method in teaching and learning of science at secondary level and it enabled the slow learners of the experimental group to cope with normal students to a considerable extent.

Keywords: e-learning -on-line learning- technology based learning- web based learning -computer based learning - synchronous e-learning- asynchronous e-learning- slow learners- achievement in science.

ISCA-ISC-2015-16EduS-03-Oral

Academic Learning Time Resource Management for Mastery Learning

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Abstract: Time, undoubtedly is considered as a basic resource for learners upon which much attention has not yet been paid in our country though it is always said that the time gone never comes back. Thus, obviously it is a non-renewable resource and Academic Learning Time is the key concept for ensuring mastery learning even for prospective teachers. On enhancement of duration of time span of academic learning, better achievement could be ensured. On the basis of this basic assumption, it has been attempted to enhance the duration of all teacher education programmes in India mandatorily from the current academic session by National Council for Teacher Education, the statutory controlling and recognizing authority. Here, in this paper, an attempt has been made to highlight the concept of Academic Learning Time Resource (ALTR) and to understand how it may ensure better learning leading the serious learners ultimately to the target achievement of mastery level. But for implementation of any such practice in our rigid educational system, a flexible and more permissive pattern is required to be followed at all levels, in which rigidly of curriculum and summative type of evaluation practices may required to be modified or relaxed and learners choice, interest and attitude may be given more weightage. As a result of this study conducted on matched group of prospective teachers following a quasi experimental design, it was observed that higher success rate is recorded due to concentration of higher scores in the above average category of achievement and at the same time, the prospective teachers placed in the experimental group achieved significantly higher than that of their control group counterpart.

Keywords: Academic learning time resource, teacher education, mastery learning

ISCA-ISC-2015-16EduS-04-Oral

Understanding the Science of Vedic Chanting: A Multidisciplinary Approach

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Abstract: Chanting of the Veda Mantras, Vedocharanam, is a unique oral discipline in India, Bharatam. It involves scientific applications of measured time scales, acoustics, trained memory, conscious and controlled efforts of the speech apparatus, brain and neural-system, alert and steady mind, and the chanter's unbroken stream of consciousness. Hence to understand the scientific basis of Vedic chanting a multidisciplinary approach is necessary. This paper provides a multidisciplinary approach to study and research chanting of the Veda Mantras. Physiology of articulation, dynamics of the Script Language (Samskrutam) and the four levels of System Language (Chatvari Vak), 10 methods of formatting applied by the Rishis to ensure non-corrupt perpetuation of the huge bulk of well organized sound vibrations of the



Suktas, are brought to fore with demo. With/without the medium of Agni (Sacrificial Fire) the Mantras are chanted individually or in congregation to serve various purposes like purification, healing and harmonious living. These are categorized in the paper.

Keywords: Vedic chanting, script language (Samskrutam), system language (Chatvari Vak), multidisciplinary approach, Agni.

ISCA-ISC-2015-16EduS-06-Oral

Fostering Inclusiveness in the Era of Globalisation in Indian Higher Education

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Abstract: Education is most important factor to progress the country Education is important not only for the full development of one's personality, but also for the sustained growth of the nation. India's higher education system is the third largest in the world, next to the United States and China. Globalization is fusion of Indian education with international standards. India is also following the global phenomenon. As part of globalization, the economic reform packages were introduced in India in the beginning of 1991. The education sector; relative priority assigned to higher education has been on the decline. It is to be realized that higher education institutions play an important role in setting the academic standard for primary and secondary education. They are also responsible for not only providing the specialized human capital in order to corner the gains from globalization, but also for training inside the country, provide policy advice, etc. Globalization, liberalisation, privatization and foreign direct investment are expected to have a positive influence on the volume, quality and spread of knowledge through increased interaction among the various states. The paper tries to analyze the impact of globalization on Indian higher education and fostering inclusiveness. The study is based on secondary data. Various survey reports and publications are used to gather information. We can say that the impact of globalization on Indian Higher Education could be termed as mixed-blessings. Developing countries have, little competitive potential, in the global arena. The globalization is a very serious issue, and it must be examined fully, in the perspective of nation building and social-set up. Globalization should take, hand in hand, the concept of cultural and social transmission, tolerance, brotherhood, compassion, mutual understanding and respect for all. India is facing a paradoxical situation; as system of Indian higher education is slow, to respond to globalization.

Keywords: Globalization, privatisation, inclusiveness, higher education.

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17. Commerce, Law and Management

ISCA-ISC-2015-17CLM-03-Oral

Environmental Pollution and Laws in India (A Socio-Legal Analysis)

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Abstract: Environment in totality is known as what constitutes our existence. It includes all the living and non living things of this world. The environment provides conditions to live and development and growth to all living things. Living things live in coordination of other living and non living things of the world. The environment consists of the interactions among plants, animals, soil, water, temperature, light, and other living and non-living things. Pollution is the introduction of contaminants into the natural environment that causes adverse change in its nature. Contaminants are the elements which makes adverse effect on its surrounding living and non living things i.e. environment. The enormously growing population is the chief cause of the environmental pollution. To feed this population unplanned agriculture, blind deforestation and large scale industrialization led to the environmental pollution. It is very difficult to stop environmental pollution because one has to see the developmental aspects of living beings. Law is the very powerful instrument to regulate everything in this world. Law is the system or set of rules which a particular country or community which recognizes as regulating the actions of its members and which it may enforce by the imposition of penalties. This enormously growing environmental pollution can be regulated by law only. There are various laws in India to curb and regulate environmental pollution. These laws are not sufficient to curb pollution in India. The Paper is an attempt to explain the environmental pollution and assessment of environmental pollution curbing laws and provides suggestion as to how law should be or amended so that sustainable development goes on without environmental pollution and degradation.

Keywords: Environmental, pollution, laws, analysis.

ISCA-ISC-2015-17CLM-04-Oral

Legitimacy of land Acquisition law's and rights of Farmers

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Abstract: Artical 31 Right to property has been dismissed from part 3 of Indian Constitution and by 44th amendment of Constitution land reform laws has added as a Constitutional right in part 12 of Constitution. The main object of artical 31a is laws providing for acquisition of estates, takeover of corporation etc, have been saved by artical 31a against challenge on the ground of alleged infringement of artical 14 or artical 19. The land which was acquiring under land acquisition act 1894, compensation was given for that land, but by above mentioned act, it was not possible to decide that compensation was reasonable or not. That's why there had to need of continuous amendments in this law. If doesn't provide appropriate compensation and provide the protection of land acquisition laws under section 31a of constitution then it will be violation of fundamental rights under section 14 and 19. The main goals of this research paper are mentioned below: i. How to decide the reasonable compensation so that when the land of farmer which is acquires by the government then their rights doesn't violate. ii. It is to decide that he/she is getting reasonable compensation or not under "The right to fair compensation and transparency in Land Acquisition, Rehabilitation and Resettlement act 2013". iii. It is to evaluate that there is violation of farmer's right occurs or not in land acquisition laws even if violation occurs then I mention the required solutions to remove it.

Keywords: Land acquisition, compensation, affected family, agricultural land, cost of acquisition, person interested.

ISCA-ISC-2015-17CLM-05-Oral

The Concept of Tribal Subplan for Tribal Development in Maharashtra, India

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Abstract: The present paper aims at the evaluation of the tribal development of Maharashtra. Maharashtra, one of the states in India, has spread over 307713 km² area and out of this, the tribal belt spans 16.5% area. As per 2001 census, the tribal population is more than 09.00% of the total population of Maharashtra. There are 36 districts in Maharashtra: Dhule, Nandurbar, Jalgaon, Naskik, Thane, Chandrapur, Gadchiroli, Gondia, Nagpur, Amaravati, Yavatmal are known for tribal inhabitation. The tribes like, Bhilla, Gond, Pawara, Thakar and Mahadev-koli etc have been residing in Maharashtra. Since 1975-76, the Integrated Tribal Development Project office has been functioning to contribute to the over-all development of Tribal Population. In order to take tribal schemes to the grass root level, this office has taken initiative for Tribal Sub Plan (TSP). The State Planning Commission makes provision of outlay for various tribal



development schemes. Out of this outlay, 60% goes to District Schemes. The remaining 40% is being used for the welfare of tribal people through various departments. For the tribal development the State Planning Commission has made provision of 4177.48 crores in 2013-14 and it was 265 crores in 1993-94. The initiatives to develop tribes are being revaluated. The basic facilities like potable water, health, electricity, roads, education etc are prioritised under this plan. The special attention is given for the development of primitive tribes under Tribal Sub Plan in Maharashtra. The respective orders are given to cater to individual beneficiaries of primitive tribes. The government employees, working in TSP area, are motivated by the State Government by giving Motivation Allowance. The paper not only takes an overview of the Tribal Sub Plan but looks at it from analytical point of view.

Keywords: Census, Integrated Tribal Development Project, Outlay, Tribal Belt and Tribal Sub Plan

ISCA-ISC-2015-17CLM-06-Oral

Lead Time Control -Key Success for Scientific Achievement

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Abstract: Provision of adequate and timely supply of material to scientists is of prime importance for carrying out meaningful scientific research as well as for meeting the targets set for completion of various in house and sponsored projects in labs Institutions. On the other hand, any public procurement should not only be made in fair and transparent manner but should also have to fall in line with the canons of financial propriety. Therefore a good purchase procedure should strive to achieve both these ends. The researcher after a study of 50 samples under the governance of various bodies or directly under the Government of India found out that there are more or less the same stages of procurement in each institute except for the powers to authorities. The procurement of material in the Government institutes studied by the researcher can be summarized as - Budget position of project/organization, Planning of purchase of equipment, machinery, furniture, etc. for the current financial year and forward the forthcoming financial year, Receiving of Indents and requisitions, Verifying stock records, Consideration of the indents by the respective Officer / Committee, Tendering and processing of quotations, Evaluation of the tenders/ quotations by the respective Officer / Committee as per the system of the organization, To obtain the financial concurrence and auditing the proposals, Submission of the proposals to the competent authority for sanction, Placement of orders, Follow-up for orders, Arrival of the goods and custom clearance, Physical verification of materials, Acceptance/Rejection, Stores Accounting, Installation in case of equipment, Payment formalities. Lead Time and Cost Control in Biotech R&D Purchase is major factor for the success of scientific goal. Lead time is defined as the time elapsed between the receipt of a requisition and the receipt of goods required, It includes the time to understand the need, time to place an order time for the vendor to manufacture, time for transportation from vendor's plant, and time for inspection to approve the item. Since there is a direct relationship between inventories and the lead-time, it is necessary to reduce the lead-time with the help of an organization and methods study. If the powers of delegation have not been increased to cope with high inflation, then approval of higher authorities may be necessary to trigger off purchase orders, thereby increasing the lead time. It is necessary to study the three components of the lead-time, namely internal administration, external lead time i.e. delivery period from the party and releasing of payment. Study by Yale University has showed that only 3% of people set specific and measurable goals for what they want to achieve in life. Twenty years later they found that those 3% amassed a combined income that was three times bigger than all the 97% that didn't set goals. The ability to manage time is an often-overlooked skill, but a skill that is vital to achieving goals. In our day-to-day activities, we go through the process (consciously or subconsciously) of setting goals and identifying the relevant steps, only to be side tracked or distracted by the lack of time to achieve all the goals we have set for ourselves. For this we need to develop or enhance our skills and ability to successfully manage our time with respect to achieving our goals. Ultimately reducing the lead time in procurement process in government sector will enable the scientist to compete globally to reach in their desired goal or target.

Keywords: Lead time (L), Stages of Procurement (SP).

ISCA-ISC-2015-17CLM-07-Oral

A study on Corporate Governance (web-based-disclosure) practices in Indian Corporate Sector

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Abstract: This study examines the web-based corporate governance disclosure practices adopted by Indian corporate sector. For the inter sector investigation a sample of 60 companies from 6 different corporate sector (Banking, Automobile, Power, Iron and steel, Information and Technology and Engineering) is taken into consideration. The analysis of result reveals that best corporate reporting is provided by banking sector followed by Automobile and IT sector. Very few



companies provide annual reports for more than five years. 95% of sample companies has disclosed the mandatory information, however the information from the investor point of view is not properly reported by the sample companies. It is also found that most of the companies are not regular in updating their websites. The study suggested that more importance should be given for updating the web sites regularly by providing current, relevant and up to date information. The study also suggest that the director reports, auditors reports, annual reports and the major changes or decision taken by the company in last 5 years must be kept in archive for the better comparison of performance of company. The paper also suggests that companies performance with over all sector performance must be disclosed in the web-based reporting practise.

Keywords: Corporate Governance, Web-based-disclosure, corporate performance, corporate practices.

ISCA-ISC-2015-17CLM-01-Poster

Valuation of the Goodwill of a Business

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Abstract: The transfer of the ownership of a business firm is a common phenomenon in trade and industry. In this course the valuation of a business becomes the prime task. For this purpose the valuation of the goodwill also comes into play. No one would consider selling the goodwill i.e. the firm's name and its special advantages while still trying to run the old business and no one will probably buy goodwill on the condition that the previous firm will continue to exist. In its narrow meaning goodwill is only the value of the reputation of the firm including that of the management. But in its wide meaning goodwill includes the value of future profits arising from whatever source or reason such as technical know-how, near-monopoly position etc. Goodwill is an intangible asset but not fictitious. The tangible asset may sometimes be less valuable than the goodwill. So, the valuation of goodwill is an important thing. Side by side the same is a disputed thing also. The transferor will try to show a higher value of the goodwill. On the other hand, the transferee will raise different questions and points with a view to lowering the value of goodwill. In these presents we have expressed our views on some of the issues pertaining to evaluation of the goodwill. From our practical experience we have found them to be the main aspects on which difference of opinion is cropped up while evaluating the goodwill. So, the issues are discussed here with some illustrations, as deemed proper, to make the analysis more meaningful.

Keywords: Trade and industry, ownership of business, valuation of goodwill, intangible asset, future profit.

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18. Library Science

ISCA-ISC-2015-18LS-01-Oral

Students' perceptions of social networking tools (SNTs) of higher education in Bangladesh: special reference to Facebook

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Abstract: The prime objective of this study is to find out the perceptions of social networking tools (SNTs) by the LIS students of Dhaka University. The study will also reveal the usage pattern of computer, internet and Facebook as well. A structured questionnaire will be used as data collection instrument and almost 250 students of LIS department will be under the survey. The findings will be clearly identify the usage pattern of computer and internet and also identify the positive and negative impact of Facebook on Dhaka University students. The findings of this study will also pertinent to researchers and professionals of library and information science discipline globally.

Keywords: Social networking tools, Facebook, LIS students, University of Dhaka, Bangladesh.

ISCA-ISC-2015-18LS-01-Poster

Mobile Technology: Use of Information and Communication Technology (ICT) in Library Services

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Abstract: Today is the age of information, so ICT had made the whole universe a global village. ICT has prior use at each and everywhere in human life and all works of literate person. The development of ICT has changed the users' expectations of the libraries in different way. This paper describes the strategy of an organizations, to enable in improving its processes, activities, resources and high quality value added information services to its users. This paper discussed about use of mobile and web application in library and information services. Viz. Circulation, Web OPAC, Sending text messages, new arrivals, News and Events etc. It covers all informative and innovative features and limitations of application of mobile devices in LIS.

Keywords: Mobile, ICT, library.

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19. Language, Literature and Culture

ISCA-ISC-2015-19LLC-01-Oral

Questioning the fetish-'ism': De-'ism'ization of Theory from the Western Pages to the Practical World

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Abstract: In the hyper-active post-industrialization era, human existence is consistently governed by the multitudinous, galactic abyss of the philosophical and theoretical paraphernalia which has been invading and interfering since the mid of the nineteenth century. The evolution of theory can be esteemed as a literary transgression or an intellectual interruption cascading from one generation to another and making an effort to enrich every possibilities of the global human race. It has not only nourished a rational environment but also nurtured a highly advanced society where the traditional issues of existence cease to exist. In the present socio-cultural, economic and political scenario theory has implemented the inter-disciplinary and intra-disciplinary machineries to slice through the geographical borders, across the domestic walls into the coffee houses, lecture theatres or the round-table conferences. But, unfortunately its practical implications has failed to both globalize and glocalise. Rather, it is embossed in a suffocative way within the linguistic creativity of a highly acclaimed individual or is verbally wasted away in the oral discourses. In fact, people seem to have developed an epidemical inclination towards suffixing 'ism' with any regular words and masqueraded as theory. Despite, intellectual advancements the lack of hypotheticality cannot be ignored. The following paper makes an attempt to investigate, explore and question the value of philosophizing and theorizing in the present era.

Keywords: hyper-active, multitudinous, galactic, paraphernalia, glocalise, hypotheticality.

ISCA-ISC-2015-19LLC-05-Oral

गुजरात के आदिवासी जाति में कला, संस्कृति और वैज्ञानिक अभिगम

कुसुम वी. गणवित

महिला कला महाविद्यालय, हिम्मतनगर, गुजरात, भारत

सारांश: गुजरात एक ऐसा प्रदेश है। गुजरात के लोग विश्व में फैले हुए हैं। यहाँ के आदिवासी लोगों की संस्कृति की पहचान कुछ और है। यहाँ की कला के कुछ लम्हें देखें तो भारतीय उत्सवों में भी आदिवासी कला का प्रदर्शन हुआ है। जीवन में कला, संस्कृति और विज्ञान तीनों का पहलू एक दूसरे के साथ का समन्वय है। कला और संगीत जीवन के साथ जुड़े हुए हैं। संगीत के उपादानों में लकड़ी या कुछ वनस्पति में से बने हुए संगीत के साधन को देखा जाए तो एक वैज्ञानिक से कम नहीं है आदिवासी लोग। ताड़ के पत्ते, बांस, लौकी जैसे फल में से भी संगीत के कुछ साधन बनाये हुए आज भी मौजूद हैं। आज भी लोग उसको बजा के झूमकर जीवन के उत्सव को मनाते हैं, बिना यंत्र से। कहीं से सीखकर लाये होंगे हमें यह सोचना चाहिए। संस्कृति, कला और विज्ञान यह उद्देश्य का संशोधन मेरा तात्पर्य है।

खोज शब्द: वनस्पति के उपादान, कला, संस्कृति, मानव मूल्यों।

ISCA-ISC-2015-19LLC-06-Oral

भारतीय आदिवासी संस्कृति में वैज्ञानिक मूल्य

दिनेश के भोया

महिला कला महाविद्यालय, हिम्मतनगर, गुजरात, भारत

सारांश: सुसंस्कृत समाज से पहले विश्व में आदिवासी लोगों का अस्तित्व मौजूद था। विश्व हो या, भारतीय संस्कृति। संस्कृति की पहली नींव डालने वाले आदिवासी लोगों ने कुछ नए तरीके से जीवन को देखना, या जीना सीखा होगा। इसीलिए तो सबसे पहले सामाजिक व्यवस्था का निर्माण हुआ आदि परंपरा में भी संस्कृति थी और आज भी है। लेकिन संस्कृति के साथ-साथ विज्ञान को भी देखा जाए तो पहाड़ियों में बसे हुए लोगों में शिक्षण नहीं था, लेकिन सोच जरूर थी। जिस प्रकार देखा जाए, तो आदिवासी लोगों में शिकार करना, हिंसक पशुओं से बचना, सर्दियों, धूप और बारिश जैसे कुदरती संकट से कैसे बचना और सुरक्षित रहना इतनी सोच या ज्ञान तो पहले से ही था। अपनी सोच से विविध कहा और नई सोच अपनाकर कैसे जीवन को सलामत रखा जाता है। वे लोग इन्जीनियर, डॉक्टर या वैज्ञानिक तो थे नहीं फिर भी अपनी तंदुरस्ती और जीवन को रक्षित रखा। वही सोच आगे विज्ञान का रूप



धारण कर के चारों ओर संशोधन की दिशा में ले गये। आदिवासी लोगों ने संस्कृति के साथ विज्ञान को भी कैसे आगे बढ़ाया, यह मेरे संशोधन का तात्पर्य है।

खोज शब्द: कला, जीवनीपयोगी उपादान, साधन, औषधिय का उपयोग, तंदुरस्ती की रक्षा।

ISCA-ISC-2015-19LLC-08-Oral

Postcolonialism: Edward Said and Gayatri Spivak

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Abstract: Postcolonialism is a term largely used to refer to all the cultures affected by the imperial process from the time of Colonization to our own time. Postcolonial *ism* means the ongoing issues and debates between East and West since the colonial process started. It attempts to examine and analyse the aftermath of colonization; that of restoring the identity of the Independent oriental nations by removing misconceptions about the orientals. It includes literature of the nations such as – Canada, Australia, New Zealand, Nigeria, Kenya, India, Pakistan, Jamaica and more countries which were once colonized by British. These countries are also called Third World Countries. Marxism and Poststructuralism have been a major influence on the thinkers from Fanon to Gayatri Spivak. Postcolonialism tries to decenter/deconstruct the Eurocentrism or Eurocentric beliefs. Basically Postcolonialism involves the following points: i. Edward Said's concept of 'Orientalism' and Gayatri Spivak's concept of 'Subaltern', ii. Reading texts produced by the writers from countries with a history of colonialism, iii. Reading texts produced by those who have migrated from countries with a history of colonialism, iv. Rereading the texts produced during colonialism in the light of theories of colonial discourse. This paper will focus on Edward Said's 'Orientalism' and Gayatri Spivak's concept of 'subaltern'. Drawing my interest in Said, Foucault, and Gramsci this paper examine how the western texts have represented the East, the Orient or the Subaltern characters. The texts referred in this paper are informed by my reading of them in postgraduate courses and reflect my area of interest. Thus the selected texts should not be treated as paradigmatic of postcolonialism or orientalism. The texts referred in this paper are: *The Tempest* by William Shakespeare *Robinson Crusoe* by Daniel Defoe, *The Outsider* by Albert Camus, *Heart of the Darkness* by Joseph Conrad, *A passage to India* by E.M. Foster.

Keywords: Postcolonialism, orientalism, subaltern, hegemony, power, discourse, identity, race, colonizer/colonized, white/black, Europe/Third world countries

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20. Social and Humanity Science

ISCA-ISC-2015-20SH-01-Oral

Social Media Conflicts: A New Perspective

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Abstract: Many studies were conducted to investigate how social media positively affect our social, political and personal lives. However, recently many other studies start investigating how social media contains a lot of political, social and, in some cases, inner conflicts. Moreover, some studies focused on the conflicts that appeared in users' personal life as a result of using social media. This study will employ the secondary analysis technique to re-analyze the previous studies that are relevant to social media conflicts. It will help in having a comprehensive perceptive of social media effects in our societies.

Keywords: Social media, conflict, negative effect.

ISCA-ISC-2015-20SH-04-Oral

Sustainable Environment and Development of Society

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Abstract: The concept of development is dynamic, multi-dimensional and has evolved during the second half of twentieth century. In the post World War II era, the concept of development was regarded as economic growth which is measured in terms of temporal increase in gross national product (GNP) and per capita income or per capita consumption in a country or in a region. When even the developed countries having high economic growth, experienced infrastructural rise in poverty because of its unequal distribution. So, in 1970s, the phrases such as redistribution with growth and growth and equity were incorporated in the definition of development. While dealing with the questions related to redistribution and equity and it was realized that the concept of development cannot be restricted to the economic sphere alone. It also includes the issues such as improving the well-being and living standard of people, availing of the health, education and equality of opportunity and ensuring political and civil rights. By 1980s, development emerged as a concept encapsulating wide-spread improvement in social as well as material wellbeing of all in a society. In Environment Geography, study of Human-Environment relationship described through various ideologies mainly- Environmental Determinism, Possibilism and Neo-Determinism.

The notion of sustainable development emerged in the wake of general rise in the awareness of environmental issues in the late 1960s in Western World. It reflected the concern of people about undesirable effects of industrial development on the environment. The publication of 'The Population Bomb' by Ehrlich in 1968 and 'The Limits to Growth' by Meadows and others in 1972 further raised the level of fear among environmentalists in particular and people in general. This sets the scenario for the emergence of new models of development under a broad phrase 'sustainable development.'

In 1992, the UN Conference on Environment and Development was held in Rio de Janeiro, taking forward many themes prefigured at the UN Conference on the Human Environment held in Stockholm in 1972. The main agreement was Agenda 21, a forty-one chapter document setting out priorities and practices for all economic and social sectors, and how these should relate to the environment. The principles of sustainable forms of development that encouraged minimizing harm to the environment and human health were agreed. However, progress has not been good, as Agenda 21 was not a binding treaty on national governments, and all are free to choose whether they adopt or ignore such principles. The Rio Summit was followed by some international successes, including the signing of the Convention on Biodiversity in 1995, the Kyoto Protocol in 1998 and the Stockholm Convention on Persistent Organic Pollutants in 2001. The ten years after the Rio World Summit on Sustainable Development was then held in Johannesburg in 2002, again raising the profile of sustainability, but also failing to tie governments to clear actions and timetables. Over time, the concept of sustainability has grown from an initial focus on environmental aspects to include first economic and then broader social and political dimensions.

Many efforts at economic and monetary valuation of the environment have flourished over the past several decades because they address several additional specific needs that are increasingly evident in environmental policymaking.

First, the importance of the divergence between social valuation of resources and their incomplete (or non-existent)



valuation in the market is increasingly apparent. How can we begin to address the problem of global warming, for example, if the externalities of industrial pollution are so poorly measured and understood, and consequently devalued in the policy arena, compared with the measurable jobs and income that are created?

Second, as the human population expands and many formerly abundant resources are increasingly scarce – clean water and clean air, wilderness, open space, even silence – accounting for, and valuing, the public good dimensions of these resources has become increasingly important in prioritizing their survival in policy debates. How else, outside of moral suasion, will the scarcity value of public goods be understood and taken into account?

Third, as the demand for economic valuation has expanded since the 1960s and 1970s, specific valuation methods and estimation procedures have also improved significantly, permitting a more accurate – though still frequently problematic – estimation of economic and monetary values of environmental resources and associated services.

Keywords: Redistribution with growth, growth and equity, redistribution and equity, material-wellbeing, agenda 21, kyoto protocol, stockholm convention on persistent organic pollutants, rio world summit on sustainable development, monetary valuation of the environment.

ISCA-ISC-2015-20SH-05-Oral

Inheritance Law of Minority Women of India and Bangladesh and Power Politics

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Abstract: Indian Muslims and Bangladeshi Hindus are minority in their respective countries. Because of the minority status, their laws are different from the civil laws of the country. The prevalence of personal law in these countries often affects the women of their respective communities adversely. This paper talks about the property rights of Muslim women of India and Hindu women of Bangladesh. Muslim women of India face inequality in matters of property. One example is given here: when a man dies while his father is alive, the widow and the children of the man won't inherit any property of the father-in-law. There are other unequal property laws prevailing in the Muslim community of India. Similarly Hindu women of Bangladesh face the same fate. In Bangladesh, Dayabhaga School is followed in Hindu Family Law. According to this School, Hindu women have no right to inherit in Bangladesh. They are deprived of their parent's or husband's property. Bangladeshi Muslim property rights have been changed to a great extent to bring women some relief and similarly Indian Hindu women witnessed the change of property rights. This shows that the prevalence of personal laws is not the only cause of oppression in these countries. Politics also play a major role in oppressing these minority women. This paper will discuss the deprivation of minority women in matter of inheritance of both India and Bangladesh and the vote bank politics that is supplementing the patriarchy for its own power gains. There is no concrete work in this particular field so the literature survey includes mainly the works of organizations which work in this field.

Keywords: Inheritance, law, minority, women, power, politics.

ISCA-ISC-2015-20SH-06-Oral

Degradation of Wild Life in Kumbhalgarh Sanctuary (Special Reference to Desuri Region, India)

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Abstract: Kumbhalgarh sanctuary is a famous wild life habitat and tourism place in south west Rajasthan. This region is well known for its bio-ecosystem, bio diversity environment and tourism. In this research paper, the degradation of bio-diversity is analyzed in Desuri region of Kumbhalgarh sanctuary. During analysis many strong spatial and administrative reasons are identified, which are responsible for the degradation of wild life. After the analysis of described problems appropriate solutions are suggested in this Research paper. Objectives: To analysis the factor, responsibilities for the degradation of wild life. To find out the ways, which can lead us to conserve wild life and develop tourism. Hypothesis: Conservation of rich diversity in Kumbhalgarh sanctuary. Environment conservation and development. Development of tourism in sanctuary. Methodology: This research paper is based on secondary data gained from forest department, views and knowledge gathered from spatial people and administration. This analysis contains maps, table, questionnaires and graphs.

Keywords: Degradation, wild life, Kumbhalgarh Sanctuary.



ISCA-ISC-2015-20SH-07-Oral

India's Quest for Energy Security: In Search of New Options in 21st Century

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Abstract: Energy security question has become very crucial to India's foreign policy in recent times. India's growing dependency on external energy sources has made a multi-dimensional effect on its economic and political sphere. The conventional sources of energy are gradually reducing and old sources are also uncertain. India's rapidly growing energy demand and growing concern about economic and environmental consequences call for effective and through energy governance in India. India has the world's second largest population of 1.24 billion in 2011. In the era of globalization Indian economy has tilt towards open market economy. With normal gross domestic product (GDP) of USD 1847 billion, India was the tenth largest economy in the world in 2011. After the adaption of economic reform (1991) its economic growth rate has been rapidly increased. The rapidly growing consumption of petroleum products and electricity has compelled India to search the alternative destinations of energy sources. The Central Asian countries, African countries and Venezuela (a Latin American country) have become the new destination. Along with this India is also seeking for nuclear fuel supplier countries to mitigate its enormous energy crisis. Its own oil, natural gas and coal reserves are very much limited. That is why, at present energy security takes a central position in government policy making. However, government of India has adopted Integrated Energy Policy (IEP) in 2008, which is the first comprehensive energy policy by the Indian government and overseas. This paper will try to critically analyze various aspects and options of India's energy security.

Keywords: Energy, policy, economy, oil, security, overseas.

ISCA-ISC-2015-20SH-09-Oral

Diversification and Resource Use Efficiency in Agriculture: A case study of District Solan of Himachal Pradesh, India

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Abstract: The paper deals with the issues like diversification and resource use efficiency in agriculture in district Solan of Himachal Pradesh. Agricultural diversification in India is gradually picking up momentum in favour of high value food commodities mainly due to increase in income. 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 the present study district Solan of Himachal Pradesh is specifically and purposely selected keeping in view its increasing emergence as a prominent and successful diversified agrarian pocket of the state. The magnitude of diversification is estimated using diversification indices. To ascertain the resource use efficiency Cobb- Douglas production function is used. Result of the study reveals that diversification has taken place at all levels, but the farmers of the more diversified category are getting less than unity returns to scale.

Keywords: Diversification and Resource Use Efficiency in Agriculture: A case study of District Solan of Himachal Pradesh.

ISCA-ISC-2015-20SH-10-Oral

Wild edible plants Used by tribals of North-east Chhattisgarh (Part - I), India

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Abstract: The present study was carried out in the North – east Chhattisgarh to document the diversity, indigenous uses and availability status of wild edible plants. The tribes of this region are dependent up to a large extent on wild resources for their food and other daily needs. The region is rich in wild edible plant resources. A total of 80 species belonging to 65 genera and 40 families were documented from the study area. Out of the recorded species 29 were herbs, 11 shrubs, 25 trees and the rest 15 were climbers. Among the documented plants, 15 were abundant, 44 common and 21 uncommon to this area. Plant parts such as leaves, shoots, young twigs, roots, rhizomes, tubers, flowers, fruits, seeds, etc. are used for food by the tribal people. The study will be helpful in developing a comprehensive data base on wild plant resources, strengthening the food security in area and in conserving the traditional knowledge for the prosperity of the remote areas.

Keywords: Wild edible plants, Tribes, Chhattisgarh, India



ISCA-ISC-2015-20SH-11-Oral

Measuring Social Exclusion on the Basis of Development Programmes: Construction of Scale and Exclusion Index

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Abstract: Social exclusion is one of the greatest threats of our contemporary world. It is a process that revolves around societal institutions to exclude, discriminate against, isolate and deprive groups or individuals on the basis of identities such as caste, ethnicity, religion, gender, location of residence, academic status, income etc. in various spheres of society, polity, and economy. This work evolves a measure to quantify the extent of social exclusion in the sphere of development programmes and develops an index of social exclusion from development programmes. Different statistical and mathematical tools have been used to construct the measure. Constructed scale is tested over a sample of 320 households chosen through multi-stage stratified random sampling to examine its reliability. Sample data are used to find the level of exclusion of each household on the basis of this measure. With the help of different statistical and econometric tools the scale is also used to examine the nature of social exclusion from development programmes in India. The analysis found different social and economic characteristics statistically significant to exclude different groups and individuals from the process of development. This scale can be used in a greater spectrum to quantify the qualitative concept of social exclusion.

Keywords: Social exclusion, social characteristics, social spheres, domains of exclusion, indicators, binary dummy variables, normalisation, Cartesian space, Euclidian measurement, index, multi-stage stratified random sampling, OLS regression, hypothesis testing, Cronbach's Alpha,

ISCA-ISC-2015-20SH-12-Oral

Innovative method of Air Pollution Testing

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Abstract: Air pollution and climate change are closely connected. Thus efforts are made to calculate the pollutants and illustrate some effects of air pollution which is also responsible for global warming. Emissions of oxides of Nitrogen, Carbon, Sulphur, Chlorofluorocarbon, etc. are accelerating day by day in different parts of developing and even from underdeveloped countries. These pollutants are capable of making holes in ozone layer which may lead to hazardous situations. Overall, these effects significantly offset each other suggesting that air pollution policy has a relatively small net effect on the global mean surface temperature and sea level rise. However, in depth study is needed for the effects of air pollution policies on overall demand for fossil fuels and organic carbon aerosols on climate. Many different adverse effects have been linked to exposure to air pollution, including an increased risk of cardiopulmonary disease and a reduction in life expectancy of a year or more for people living in different cities. Some of these effects occur at very low concentrations that were previously considered safe. It is reasonable to assume that a reduction in air pollution will lead to considerable health benefits. An innovative method of air pollution testing can be done locally with very low cost teaching learning materials.

Keywords: Pollutant, chlorofluorocarbon, ozone hole, sea level rise, global warming.

ISCA-ISC-2015-20SH-13-Oral

The Status of KAP for Infancy Nutrition Vs. Technological Development among RanaTharu Schedule Tribes

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Abstract: The tribal section of Indian population is characterized as isolation in ecology, demography, economy, politics, family structure, culture, tradition, social behavior, health and nutrition etc. The Tharu Tribe is the most popular tribe of Indian and Nepal. They are indigenous people living in the Terai plains on the border of Nepal and India. The population of Tharu in the state of Uttar Pradesh in 83544 and 85665 in Uttarakhand. They are mostly populated in Champaran district of Bihar and in Udham Singh Nagar district of Uttarakhand, Kheeri, Peelibheet, Gonda, Balrampur, Gorakhpur, Bahraich, Shravasti district of Uttar Pradesh. The Tharu are recognized as a schedule tribe by the Govt. of India and



constitution of India gives many special rights in all fields of development because they are the primary victims of backwardness. In spite of the above the Tharu life is very 'eco-friendly', the quality of life is deeply related with nature, culture and traditional rituals. Due to traditional infants care practice based on traditional rituals, infections, anaemia, nutritional deficiency and other diseases are very much common due to unhygienic living, unbalanced diet among pregnant women and lactating mothers and their infants, that is a alarming issue to policy formulation and implementator. The Supreme Court also found it a serious issue and given direction by order passed for infants, children, pregnant women and lactating mothers. But the ground reality still as it is. This paper aims to analyze the status of knowledge, attitude and practices (KAP) for infants care practices vs. technological advancement among Rana Tharu families. The paper was prepared at Bhoorh village of Khatima development block of district Udham Singh Nagar state Uttarakhand (India). The validation cohort n=100 (all child bearing women). The academic status of respondents was better; graduate; 14%, intermediate; 27; High School 21% below high School; 17% and rest; 21% illiterate. The knowledge for infancy care practices among 37% women. The source of their achieving knowledge during study period (academic institutions) regarding health, hygiene and nutrition. The attitude towards healthy infants care practices found only 16% among respondents. For practices for infants care it was found negligible because of the adamant of traditional taboos and ritual present utmost in this society. A cent-percent rejection of modern clinical services among this community and bound to take these clinical services either by magico-religious or traditional practitioner termed as 'bharare'. All the deliveries were carried at home that was carried by traditional dais, bharare, and old women. There were a sad story for disabled and abnormal babies that were killed at the time of birth and that baby considered as a symbol of Rakash. For twins, some times accept the babies twins. Therefore, this society's quality of life is based on traditional beliefs, rituals and taboos. Prohibitions were very much common. Every working was carried by a magico religious priest and the quality of life of such society termed as primitive society. On the other hand, the technological development was found marvelous. Every house was pucca and well designed with equipped by T.V., cable, bridge etc. The agriculture equipment tractor, harvester, thresher etc. are also very much common in this society. The household transportation was carried by bike and cars that were very much common. Therefore this society needed very much attention for social, psychological, health, clinical and nutrition awareness programmes that should be adopted in their quality of life for attitude and practices in mother and child care services.

Keywords: Status, KAP, Infancy, Nutrition, technological, development, Rana Tharu Schedule Tribes.

ISCA-ISC-2015-20SH-15-Oral

Dr. Babasaheb Ambedkar's views on Science and Technology

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Abstract: This paper deals with Dr. Babasaheb Ambedkar's views on science and technology. It highlights the reasons of development of scientific temperament in Dr. Babasaheb Ambedkar. The influence of Buddhism on Dr. Ambedkar was profound not as a religion but as a scientific and moral order for better life. It was due to his exposure to the modern western scientific education that he could appreciate and assess Buddhism in scientific way. He promoted idea of science and technology. He established educational institutes such as Bahishkrit Hitkarini Sabha in 1924, Peoples Education Society in July 1945 which promoted idea of imparting education in India. He was very much in Favour of industrialization for growth of Indian economy. Dr. Babasaheb Ambedkar was very serious about budgetary provisions for the welfare of the people. Damodar valley project was his multi-propose project it was not only for preventing floods in Damodar, but would also have the object of irrigation, navigation and production of electricity. In the period 1943-46 he actively participated in discussion for evolving policy of government on issue of water and power. A major achievement of Dr. Ambedkar while he was Labour Minister in the Viceroys Executive Council was the formation of two powerful organizations. The one was Central Waterways, Irrigation and Navigation Commission which is presently known as Central Water Commission and Central Electricity Authority. He was a true worshiper of scientific knowledge. He wanted modern science and technology to be used for the welfare of the people.

Keywords: Science, technology.

ISCA-ISC-2015-20SH-17-Oral

Customs among Tharu tribe of UP (India) regarding to Colostrum's and Pre-lacteals

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Abstract: The fundamental right of the child is the breast milk. It is believed that the pre-lacteals are the substitute for colostrum. It is the traditionally accepted culture in India but they feed their children in most unhygienic method, either



they used finger or spoon or cotton. In discarding of colostrum and introducing the pre-lacteals to their babies, their traditional beliefs and misconceptions are observed. A cross-sectional study was conducted on Tharu tribal population at 16 villages in tarai border of Uttar Pradesh. Data was collected from 169 lactating Tharu women, age range between 15-45 years through interview method. Adequate knowledge should be given to the mothers in regarding colostrum's and effects of pre-lacteal feedings.

Keywords: Breast milk, Pre-lacteals, Traditional beliefs.

ISCA-ISC-2015-20SH-18-Oral

A comparative study of changing Family Composition, Structure and Practices in urban area of Bhopal City, MP, India

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Abstract: The present study was conducted in Bhopal district of Madhya Pradesh. The aim of research study was to assess the changing Family Composition, Structure and Practices in urban area of Bhopal City. Purposively 80 families of middle socio-economic strata were selected for the study. A survey was conducted using a self-structured questionnaire with close ended questions, to collect the data regarding changing Family Composition, Structure (Changing role, power and status, Changes relationships and Practices (Changing marriage patterns and other family practices). Data was analyzed in terms of mean, frequency and percentage. Findings reveal that 81.25% families were nuclear, Role, power and status was given according to age of person in family (86.25%). There were families having normal (37.50%), good (31.25%), very good (8.75%), poor (22.50%) dyadic relationship with their extended families, Families having good (25.00%), average (46.25%), very good (5.00%), poor (23.75%) dyadic relationship with their kinship reference group, Families with monogamy (100.00%), endogamy (73.25%), exogamy (26.25%) marriage practices, families were in favor of arranged (41.25%), arranged love (28.75%) and love (30.00%) marriages, families in favor of marriage after 25 years (51.25%), marriage between 21-25 years (40.00%), marriage between 18-21 years (8.75%), families following marriage rituals of marriage (100.00%), families in favor of financial exchange during marriage (96.25%) and families against of financial exchange during marriage (3.75%), Families having their own residence and lineage system (100.00%), families following democratic (61.25%), authoritative (33.75%), permissive (5.00%) disciplinary system, families giving preference to their family member for Guardianship and custody of their children (86.25%) and families, taking help of neighbor, community center for Guardianship and custody of their children (13.75%), families, taking the responsibilities of rearing and bearing of their own children (100.00%), families able to fulfill (91.25%) and families unable fulfill their familial needs sometimes (8.75%), families very careful about health and hygiene of their family members (90.00%), were less caring about health and hygiene of their family members (10.00%), families planned regular saving for present and future of their family members (85.00%), families irregular in saving for present and future of their family members (15.00%). families were supporting their working/ non working members of their family (100.00%).

Keywords: Comparative, study, changing, family, composition, structure, practices, urban area.

ISCA-ISC-2015-20SH-19-Oral

Scenario of on Street Parking Demand: A Case Study of Kolkata City, India

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Abstract: Parking is an essential requirement of the transportation system. The availability of parking is related to the price, location and the type of parking spaces followed by infrastructure of these spaces and enforcement of regulations. Parking spaces are required by residents, employees, customers and visitors and the movement of traffic. Therefore Kolkata is one of the fast urbanising countries in the world and standard of living of the residents of Kolkata has increased dramatically and it has resulted in an unprecedented increase in personalised mode of vehicles. These huge numbers of personalised vehicles require a storage system at the end of travelling hours, which is called parking. However there are two categories of car parking which have been observed in the city and it includes on street and off street parking. On street parking is most commonly observed in the city of Kolkata and further it has been said that illegal on street parking leads to traffic congestion and it emits huge amount of vehicular pollution. Department of Transport, Government of West Bengal and Kolkata Traffic Police have been taken various initiatives and provisions to mechanise on street car parking legally and make a balance between the demand and supply of parking in the various on street parking spaces in the city. B.B.D Bag, Esplanade area, Park Street, Gariahat and other adjoining commercial areas which



include South City Mall, Mani Square Mall, Quest Mall, Metropolis Mall, Lake Mall are the main places for on street car parking in the city. Kolkata Municipal Corporation and Kolkata Traffic Police have been implemented several parking fees to maintain these car parking spaces systematically. Therefore in this paper an attempt has been made to point out various aspects of parking characteristics such as location, area, duration of parking, accumulation and volume in the parking spaces followed by some guidelines and provisions which will surely make better Kolkata city in future.

Keywords: On street parking, traffic congestion, infrastructure, commercial area, personalised vehicles.

ISCA-ISC-2015-20SH-20-Oral

No-Refusal Taxi Drivers as a Subaltern Resource Group in Kolkata City, India: An Empirical Case Study

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Abstract: In Kolkata, taxi is considered to be four wheelers vehicle and it is one of the best ways of transport vehicle by which passengers are usually selected this mode of transport for covering the taxi cab distance within a stipulated time. Almost 3 years date backs, there was no no-refusal taxi for the beneficiaries of the passengers in Kolkata city. Now, there are two type of taxis which are most commonly observed which means refusal and no-refusal taxi. Refusal taxis are mostly refused the passengers during peak hours when the passengers are usually required these yellow cab taxis for reaching to their destinations. However No-refusal taxi drivers usually could not be able to refuse any passenger because of stringent governmental rules and notified regulations. While it has been observed among simplified taxi drivers, they are frequently refused the passengers for some obvious reason such as lunch or dinnertime, small distance as well as traffic congestion etc. In that case these refused passengers wish to complain report to the police against these taxi drivers because West Bengal Traffic Police has already notified some rules against of these refusal. In addition to that incident, police could punish them by claiming money or notified fine as well as taking some confidential bribe. In order to removing the problem of refusal, Transport Department, Government of West Bengal has initiated and implemented new No-refusal taxi during last two years date back. Therefore, these taxi drivers are also deprived by Kolkata Traffic Police incorporating by lower down meter, high amount of penalty, unconditional governmental rules as well as more hike penalty than the specified fine in the governmental rules. In this condition, the taxi drivers don't even have any recovery suggestion or solution. As a subaltern resource, the taxi drivers are also deprived by the administration system, government as well as by the passengers. Therefore in this research paper, several objectives have been incorporated to identify the group of people who are engaged in this profession followed by making an assessment on taxi drivers and their problems and to know, whether they are deprived or not and what are the reasons behind that. Therefore an empirical case study has been done on the passengers as well as drivers to know the key problem of this dichotomy of refusal as well as no-refusal problem regarding taxis in Kolkata. On the other hand, several articles, secondary data, as well as few questionnaires are being solved by the taxi drivers of Kolkata which has been shaped this research paper more empirical. Several cartograms have been done based on those primary survey data and secondary data as well as several photographs have been snapped out by the author to make this research paper more scientific. Finally, In this research paper an attempt has been made to point out the problems as well as find out some solutions of these economically deprived as well as socially deprived group of people means these taxi drivers in Kolkata city.

Keywords: Passengers, no-refusal taxi, refuse, penalty, deprived.

ISCA-ISC-2015-20SH-23-Oral

Economic viability assessment of wind energy in Nepal

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Abstract: Nepal's electricity supply is heavily dependent on hydropower with around five percent contribution of fossil fuel in national grid and fifteen percent of total electricity access from micro/mini hydro and solar PV persisting huge gap in energy demand and supply. Considering global attention of scaling up renewable energy technologies, trend of wind energy development and continuous energy crisis in the country economic viability assessment of wind energy is becoming one of the key areas of research. This paper aims to conduct cost benefit analysis of wind energy in two locations of Nepal comparing with alternative energy options. Daily wind resource data of Mustang and Dang districts measured at 30 meter or above height for the period of at least one year will be analyzed to assess the wind energy potential in those locations. Cost and benefit of wind energy will be evaluated comparing with national grid and local mini-grid like micro hydropower, solar photovoltaic and diesel operated energy system.

Keywords: wind energy, cost-benefit, economic viability, assessment, comparative analysis, energy cost



ISCA-ISC-2015-20SH-24-Oral

Establishment of Auto-functional Green Movement: A Venture at Grass-root level

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Abstract: Modern civilization mostly suffers from problems which arise from three fronts: environment, employment and agriculture. We have got to grasp the first two problems to a great extent. But people hardly know the gravity of the crisis in agriculture as a whole. 2014 was declared to be the International Family Farming Year for the protection family farming. Family or small farming is the most viable form of agriculture from the perspectives of environment, economics and employment. Nowadays it has started going to be wiped out from the scenario of civilization. For adequately addressing the three crises at one go, proposal for Auto-functional Green Movement (AGM) or Self-employment through Green Movement (SGM) has been formulated. The main idea of the movement is to: (i) make family farming sustainable by harnessing human as well as natural capitals, (ii) human capital mobilized through an intermediary body chosen through consensus, which would organize vital services to cover shortcomings of individual efforts, (iii) natural capital in the form of individually owned and collectively looked after wealth viz. fruit trees, cattle and fish, (iv) make village life viable without injecting subsidy and (v) all these would be done by developing a three-shared movement. People all over the globe have so far raised voices for pursuance of natural farming as one of the solutions to the problem of family or small farming. If the problem is so huge, its solution cannot be simple and one sided only. Natural farming is good from almost all standpoints - hygiene, environment and employment. But the technology of natural farming can never be materialized without a conducive social and spiritual engineering too. We have experienced the blessings and curses of the Green Revolution. Again we are hearing about the promises and risks of the Second Green Revolution. Now let us usher in an Evergreen Revolution through social engineering by exploring the beauty and strength of relationship with human and natural world. The aims and objectives of this venture are to obtain experience for the blessings and curses of Green Revolution. Again we are hearing about the promises and risks of Second Green Revolution. Now let us usher in an Evergreen Revolution through social engineering as envisaged in AGM / SGM by connecting everyone of a small community in a modus operandi of a Three-Shared Participation.

Keywords: Green movement, modern civilization, social and spiritual engineering, conducive, envisaged, three shared participation.

ISCA-ISC-2015-20SH-02-Poster

Language Development: Why it is Important and How to Impact it

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Abstract: In the preschool period mental development is characterized by the rapid expansion of cognitive abilities. A number of cognitive capacities critical to child's overall intelligence begin to develop during this period. This includes early development of concepts, attention, relational abilities and perceptual maturation. The concepts that a child Journal of Educational and Social Research develops are many basic concepts in children's cognitive development include those rational concepts that children use to describe what they see, hear and feel. A child's ability to understand and use these concepts is considered essential not only to school learning but also to following verbal instructions. To access the learning abilities of pre-scholars. One hundred students (fifty were selected from rural and fifty from urban area) were selected on random basis from district Hisar. Age was 3-5 of the respondents. McCarthy scale was used to collect the data. Mean, SD test was used to analyze the data. The result showed that the improvement in language development as the increase age because children at age 5 years had better scores than the younger counterparts. Comparison over location revealed that respondents from urban area were better in there language development than rural respondents. Urban children surpassed are a rural counterpart in language development.

Keywords: Pre-school, children, language development.



1. Agriculture, Forestry and Horticulture

ISCA-ISC-2015-1AFH-25-Oral

Let's strive on Natural Agro-Technology to Eradicate Global Crisis

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Abstract: The implementation of a three shared movement in the agricultural sector. Due to the mass destruction of our natural environment through the use of over chemicalized products on plants, animals for high production, degradation by industrialization and expensive housing projects, and wide call for Global warming, and poverty and to prevent future hunger crisis, the practice of natural technology through the rural communities and eventually Urban centers where every member of an individual household is entitled to own an economic plant is a one-way remedy to the global crises in agriculture, the environment, and poverty eradication. By practicing natural farming whereby family farming groups are being formed in about 500 to 1000 in small communities or 1000 to 1500 persons per group in large rural communities. This is so because the most impoverished population comes from our rural farm communities. They are known as the family farmers. Statistics have proven that this group of farmers produce more than half of the world's food and how is it possible that they remain poor? And this situation be changed? The process whereby every individual is entitled to an economic plant will help to protect our ecology and reunite our society. The Auto-Functional Green Movement for Social, Economic and Ecological Harmony by proff Jyotirmoy Goswami is an appropriate solution towards eradicating poverty—a step forward to closing the wide gap between the poor and the rich. Cameroon has taken the lead in implementing this project in five out of the ten regions of the country. Southwest, Northwest, Center, East, and the Litoral Regions respectively where the local inhabitants and a wide range of the government officials saw a need to put in place this practice. Some farm areas already are seriously practicing natural farming. They have turned away from the use of chemical fertilizers to natural technology of agriculture where nothing is a waist. Organic (natural) agriculture is a necessity of the day. Of course it's sustainable too. But unless it's matched with an organic society, it will never sustain! Auto-functional Green Movement will just do that! (a) By including everyone at a grassroots small community, (b) through a three-shared system. In our country everyone can get one-third of the production of at least 10 trees. The intermediary forum or the club will get one-third of the production of all the trees planted by them. The landowners, be them the government, the society or any individual, will get one third of the production of the trees on their respective lands. Natural technology is an endless cycle. Let's help the rural communities and the world at-large.

Keywords: Let's strive, natural, agro-technology, eradicate, global, crisis.

2. Animal, Veterinary and Fishery

ISCA-ISC-2015-2AVF-05-Poster

Mitigation Strategies to Crop Damage by Nilgai (*Boselaphus tragocamelus*) in Shekhawati Region of Thar Desert, India

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Abstract: This paper deals with mitigation strategies of Nilgai in Shekhawati Region of Thar Desert during 2012 and 2013. According to present study Nilgai is strictly vegetarian and is a well known herbivore, also a common antelope found in open scrub /forests where little vegetation exists and in and around wildlife sanctuaries in Rajasthan but avoid dense forest. Farmers want to get rid of this unconventional mammalian crop pest. The farmers make efforts to reduce the crop predation of Blue-bull but these are not a long time and confirm solution. Some important views outcome during study, crop protection measures are used by the farmers, which are observed and suggested for management strategies. It is observed that when food availability is insufficient they easily jump 6-8 feet barbed fencing, stone wall, fencing with high soil and thorny plants as well as passes under the fencing. Mostly it raids the fields early in the morning, evening and at night it may raid as solitary bull, duo bulls or cows and in a herd of about 4-21 individuals of all the age classes. It is observed round the year around Rabi crop field and only in August – October near the Kharif crop. Nilgai use repeatedly one crop land. The most people in the affected area hire a man namely 'Bavaria' (a man of caste 'Naik') by paying some money and wheat for selected crop field. Some people protect their crop by remaining vigilant whole night sitting on the 'machan' (A resting platform made up of four bamboos). Farmers also use pet dog to chase away Nilgai from crop field.

Keywords: Nilgai, Get Rid, vigilant, mammalian crop pest.



ISCA-ISC-2015-2AVF-23-Oral

Biodiversity of Mites in Poultry dust at Rajnandgoan District in Chhattisgarh, India

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Abstract: Mites dwelling in house dust have become recognized as a source of allergens in human being as well as animals. Here the biodiversity of poultry dust and variation in different seasons study was carried out. About 120 samples were screened for sixteen months from poultry farm located at Ghorda, about 12 kilometers away from Rajnandgoan district, state Chhattisgarh. Simple pick up method for qualitative, and centrifugation method for quantitative estimation of mites was performed. Two species of mites *Dermanyssus gallinae* (35 %) and *Ornithonyssus bursa* (10 %) revealed in between June 2013 to November 2014. The temperature and relative humidity directly affected the mite incidence. Poultry dust mites found peak in autumn season during the study year, when temperature was around 25* and relative humidity ranged between 75* to 85*. Protonymphs and Duetonymphs larvae of chicken mite's incidence were also found.

Keywords: Allergy, species, poultry mites, environmental parameters, poultry workers.

3. Biological Sciences

ISCA-ISC-2015-3BS-32-Oral

Biological Activities Study of Different Lichens from Hills around Kathmandu and Pokhara, Nepal

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Abstract: Lichens are a group of composite organisms formed by the symbiotic relationship between the cyanobacteria or algae or both and fungi. Naturally occurring compounds can have an advantage in the therapeutic application over the synthetic compounds in a sense that they can have little side effects in comparison to the synthetic ones. In this study, a total of 84 lichen specimens were collected and identified from varying altitudes around the Kathmandu and Pokhara which were later identified to be as 61 different species belonging to 19 different genera. Methanol fractions of 16 specimens and dichloromethane (DCM) fraction of 21 lichens specimens showed comparable antioxidant activities with commercial standards (BHA, Butylated hydroxyanisole, $IC_{50}=4.9\pm 0.9 \mu\text{g/ml}$) even at crude level. Similarly, DCM fraction of 17 lichens showed potential antimicrobial activity against a gram positive bacterium (*Staphylococcus aureus*) and DCM fractions of 45 lichens showed potential antimicrobial activity against a gram negative bacterium (*Klebsiella pneumoniae*). And, DCM fraction of three lichens showed antifungal activity against *Candida albicans*. Likewise, methanol fraction of 39 lichens and DCM fractions of 74 lichens showed strong toxicity against brine shrimp larvae. Such results indicated that lichen could be potential sources of bioactive natural products which could be commercialized after necessary further research.

Keywords: Biological, activities, study, different lichens, hills.

4. Chemical Sciences

ISCA-ISC-2015-4CS-17-Poster

Modeling equilibrium Adsorption of Phenols onto Flyash Using QSAR

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Abstract: Experimentally determining adsorption behavior of organic chemicals have been found costly, time-consuming and very tedious. As more than 100,000 chemicals are currently in common use and new chemicals are registered at a rate of more than 1000 per year, it is obvious that our human and material resources are insufficient to experimentally obtain their adsorption data. A large number of works are being carried out to find out alternative methods to estimate accurately and rapidly the adsorption coefficients of phenols and other classes of organic pollutants. Presently efforts are made to develop error free nonempirical models imminent to all models based on empirical variables. Thus molecular topology has been found to be the most successful structural property for describing and predicting adsorption coefficients.



This study investigates the ability of multivariate linear regression to estimate the adsorbability onto flyash of phenols in aqueous media by a quantitative structure-activity relationship. Equilibrium adsorption data from experiments and molecular connectivity indexes by quantum mechanical methods using molecular modeling software constituted a training data set of phenolic compounds. Molecular connectivity has been identified as important solute properties that affect adsorption of phenols on flyash. The connectivity indexes are demonstrated to correlate extremely well with the flyash adsorption coefficients of phenols. With these individual linear models, coefficients of determination (R^2) values ranging from 0.61 to 0.84 are obtained. With the mechanistic approach used in developing this predictive model, a strong relation with adsorption mechanisms is established, improving the interpretation and, ultimately, acceptance of the model.

Keywords: Flyash, adsorption, molecular connectivity, quantitative structure-activity relationship, water treatment, organic chemicals.

ISCA-ISC-2015-4CS-24-Oral

Neutral Red immobilized Graphite felt anodic Microbial Fuel Cell for wastewater treatment and Generation of Electricity

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Abstract: Microbial Fuel cell (MFC) can be a great demand for waste water treatment in future. Alternatively, the increasing demand of energy can be fulfilled by this technique in the future if the performance of MFC is improved. In this paper, a MFC was constructed by using graphite felt immobilized with neutral red as anode and a platinum coated platinum wire as cathode. Anolyte used was municipal wastewater and catholyte was phosphate buffer pH 7. The wastewater contained 1.457mg/l of Ammonical Nitrogen, 33.363mg/l of COD, 0.537mg/l of total Phosphorus, 0.105mg/l of reducing sugar and 0.139 mg/l of Nitrite nitrogen. The mixed culture of organism dominantly present in the wastewater was used in MFC. The COD of wastewater was reduced by 69.96% when MFC was run for days. The maximum power generated was found to be 24.45w/m³ when 1% H₂O₂ was supplied as a source of oxygen in the cathode compartment. The result was found to be effective when cellulose acetate was used as membrane compared with the Nafion membrane. The result indicates microbial fuel cell technology to be a new approach for wastewater treatment as it produces sustainable clean energy by minimizing COD level.

Keywords: Microbial fuel cell, wastewater treatment, electricity generation, mixed microbial culture.

ISCA-ISC-2015-4CS-25-Oral

Modeling of Experimental Adsorption Isotherm Data for Phenols

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Abstract: Phenols are listed as priority pollutant by United State Environmental Protection Agency (USEPA). The major sources of phenolic waste are petroleum refineries, petrochemical, steel mills, coke-oven plants, coal gas, synthetic resins, pharmaceuticals, paints, plywood industries and mine discharge. Phenols may enter underground or surface waters due to spills from the industries or industrial products and people may be exposed to the chemical by drinking the polluted water or during the utilization of the water for other purposes. The exposure of the phenol can cause serious health problems to the human beings including diarrhea, dark urine and hemolytic anemia. Adsorption is considered to be one of the most effective green technologies widely used in global environmental protection areas. Modeling of experimental adsorption isotherm data is an essential means for predicting the mechanisms of adsorption, which will lead to an improvement in the area of adsorption science. In this study, two isotherm models, namely: Langmuir and Freundlich are employed to correlate three sets of experimental adsorption isotherm data, which are obtained by batch tests in our laboratory. The linearized and non-linearized isotherm models are compared and discussed. In order to determine the best fit isotherm model, the correlation coefficient (r^2) and standard errors (S.E.) for each parameter are used for evaluation of the data. The modeling results for linearized and non-linearized isotherm models are decided on the basis of higher r^2 values and smaller S.E.

Keywords: modeling, isotherm data, linear, non-linear, standard errors (S.E.)



8. Environmental Sciences

ISCA-ISC-2015-8EVS-24-Oral

Nilgai (*Boselaphus tragocamelus*): Crop Predator in Thar Desert, India

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Abstract: The present paper deals with observations of the study conducted on Nilgai in Shekhawati Region in Indian Thar Desert during 2012 and 2013. The Nilgai is the biggest Asian antelope. Nilgai is strictly vegetarian and is a well known herbivore. It is often browses on shrubs and small trees and grazes on grasses and herbs. It is primarily grazer and also observed as feeder. The major crop damage on crops of 'Rabi' and 'Kharif' was caused not only by feedings but also due to trampling during movements, resting and fighting between two male at the time of breeding. Nilgai is regarded as a serious mammalian crop pest due to eating less but destroying more by trampling and cause crop damage. The area of study gives high production of crop. Farmers want to get rid of this unconventional mammalian crop pest. The crop damage by Nilgai is large due to their increasing number, deforestation, lack of open vegetation area. The increased population number was reported in crop field in Rajasthan. Nilgai raids on cultivated crop because shrubs and trees found in this area do not provide sufficient food. The estimated crop damage is minimum 15% and maximum 45% but sometimes it reaches up to 80 - 90% in particular crop lands due to fighting between two male as well as over grazing.

Keywords: Nilgai, Thar desert, crop damage, trampling, serious pest.

ISCA-ISC-2015-8EVS-25-Oral

Effects of Global Warming

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Abstract: The abnormal increase in the concentration of the greenhouse gases is resulting in higher temperatures. We call effect is global warming. The average temperature around the world has increased about 1°c over 140 years, 75% of this has risen just over the past 30 years. The more frequent severe weather conditions which result from global warming in the form of storms, tornadoes, tsunamis, floods, droughts, rising sea level, weather extremes and risks to human health and society. This problem can be solved only if same judicious steps are taken, including improvements to energy efficiency and vehicle fuel economy, increases in wind and solar power, hydrogen produced from renewable sources, biofuels (produced from crops), natural gas and nuclear power.

Keywords: Green house, global warming, temperatures, human health.

9. Forensic science

ISCA-ISC-2015-9FMDN-07-Poster

Effect of Yoga Hand Mudra for controlling High Blood Pressure

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Abstract: Hypertension or high blood pressure is a common clinical presentation worldwide. High blood pressure control is important to reduce many disease complications such as kidney failure, heart diseases and stroke. Apart from medications, yoga hand mudra is an effective supplement to medical healing for several clinical conditions like blood pressure, asthma, stress, obesity and heart diseases. Our study focus was on yoga hand mudra and its beneficial effect for controlling high blood pressure. Randomly 34 subjects were included in the study, out of which 15 were diagnosed as hypertensive and 19 as normal. Yoga hand mudra was tried out on patients suffering from high blood pressure aged between 35-65 years. Blood pressure and heart rate measurements of the subjects were recorded before and after performing yoga hand mudra. The systolic and diastolic blood pressure was reduced significantly ($P < 0.001$) after practicing the yoga hand mudra. The yoga hand mudra was found to be effective in normalizing high blood pressure in a novel way. This mudra is helpful in emergency situations where medical help is not available immediately. It can also reduce further medical deterioration of patient's clinical condition.

Keywords: Blood pressure, hypertension, Yoga hand mudra, stress, hand gesture.



ISCA-ISC-2015-9FMDN-16-Oral

Psychological Autopsy- Its use in lifting the veil of Heinous Offences

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Abstract: The term psychological autopsy indicates reconstruction of all circumstances, thoughts under which a person was, before his death. After reviewing or reconstructing these gathered informations, it is very easy for investigating agencies to reveal the truth lying behind his equivocal death. Obviously, it's a tedious and extremely sensitive matter to recollect and thereafter to reconstruct the whole truth behind a person's death because of many factors involved in it, like; interviews of family members of deceased, documents and other material. Moreover, if this procedure is relating to study the reasons behind person's involved in heinous crimes like terrorism then, to perform such research and study become more tedious. Still there is no crystal clear psychological theory, which can prove the logic behind a person to become terrorists and that too a suicide bomb. Many reasons came out by different researches like; psychological aspects, feeling of revenge, greed of reward, terrorists organizations as motivators, family approval and last but not the least they consider it as martyrdom rather than a suicide. In spite of all the difficulties and risk factors involved, this process can be use as a weapon of peace to minimize or to stop our generations to indulge themselves in such vicious acts.

Keywords: Psychological autopsy, terrorism, martyrdom, equivocal death

ISCA-ISC-2015-9FMDN-17-Oral

Ethical Challenges in Hospital Duty of Nurses: Qualitative Study

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Abstract: This study aimed to explore nurses' experiences of ethical challenges in their hospital duty. Phenomenological hermeneutic approach was adopted. Twelve nurses involved in patient care for more than five years and working in the five government hospitals of Kathmandu, Nepal were selected purposively as the study participant. After receiving ethical approval, data was collected through in-depth interview. The interview was in Nepali language and was audio taped with written permission of the participants. The recordings were downloaded to a personal computer. The data was transcribed and analyzed thematically. The four main themes emerged were 1) negligence in caring situation 2) suffering of patient 3) risk of transmitting infection 4) medication error. Nurses perceived negligence when health professionals ignore duty and responsibility of patient care. They perceived patient suffering because of inadequate care, caused by insufficient health human resources and caring materials. Nurses expressed that ineffective application of infection prevention strategy in caring situation placed high risk of transmitting infection to both patients and health professionals. Medication error in caring situation was perceived as more stressful situation that gives burden to their patients. Nurses in their hospital duty experience ethically challenging situations regardless of their effort to provide quality care. There is need of awareness creation in order to prevent and control these challenges.

Keywords: Ethics, ethical challenges, hospital duty, nurse, nursing.

ISCA-ISC-2015-9FMDN-18-Oral

Lived Experiences and Health Problems among Elderly Residing in Urban Areas, Lalitpur, Nepal

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Abstract: Multi-morbidities among old age people is increasing in all settings particularly in urban settings. This objective of this study is to explore lived experiences of elderly regarding their health problems who were residing in their homes in Lalitpur metropolitan city. Hermeneutic phenomenology approach was adopted. From survey respondents 12 elderly were selected purposively. Data were collected by researcher herself through in-depth interviews having grand tour and probed questions in Nepali language. Collected data were audio taped, transcribed and analyzed based on Giorgi's data analysis methods. Before data collection ethical approval was obtained from of Institute of Medicine. Experienced health problems were diabetes, hypertension, chronic respiratory problems, cardiac problems, gastritis, fall injury, hearing and vision deficit. Furthermore elderly with less age group were more dependent in performing their intermediate activities where as elderly of oldest old age were mostly dependent in performing some of their activities of self care. Psychological health problems like loneliness, mild cognitive impairment were also identified among some elderly while few of them



were suffering maltreatment at their homes. Multi morbidities, functional impairment, loneliness, mild memory impairment and elder maltreatment are discerned health problems which need to be addressed promptly in national policies with promotion of social engagement for elderly particularly in urban areas.

Keywords: Elderly, health problems, hermeneutic phenomenology, Lalitpur city, lived experiences.

ISCA-ISC-2015-9FMDN-19-Oral

Antibiotics to Cure or Harm: Concept of Antibiotic Resistance among Health Professional Students

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Abstract: Antibiotic is a wonder drug used for the treatment and control of microbial infections and resistance to such drug is a major global health issue due to its extensive and improper use. Health professional students being easy to mould and should be made aware to focus on the social aspects of antibiotic management especially the knowledge, attitude and practice so that in future they can aware and help the general population regarding the judicious use of antibiotics. A cross-sectional study was carried out in two health institutions of Birgunj, Nepal. Data was collected through convenient sampling technique, using a pre-tested structured questionnaire. A total of 176 respondents belonging from Nursing and Dental backgrounds were included in current study. It was found that 87.5% of the respondents start antibiotic usage with consultation of doctor, whereas, 84.7% of respondents said that indiscriminate and injudicious usage of antibiotics can lead to increased adverse effect on human body. About 98.3% respondents suggested getting more education about antibiotic. Moreover, 61.9% of respondents completed full course of treatment while they were ill. Surprisingly, 19.69% of respondents were unsure about the causes of antibiotic resistance. Respondents said that awareness programme of antimicrobial resistance is one of the major solutions for the growing problem of antimicrobial resistance.

Keywords: Antimicrobial resistance, antibiotic usage, nursing and dental students.

ISCA-ISC-2015-9FMDN-20-Oral

A case of three Deltas in a Fingerprint

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Abstract: Fingerprints begin forming at about the 6th to the 13th week of gestation. Innumerable number of factors determines the print pattern in the womb, including the density of the amniotic fluid surrounding the fetus, the size of the fetus, the friction in the womb, the location in the womb among others. Once developed, remains constant throughout life. Basically there are three main patterns; the Loop, which rise up and loop back around, continuing on the same direction it started from and it accounts for about 70% of all fingerprints, Arches looks like waves that rise and fall on the same fingerprint pattern, accounting for 5% while the Whorl appears as circular patterns accounting for 25%. The loop has only one delta, the Arch no delta with the Whorl pattern having two deltas. In the case presented here, a young man 30 years, who is physically fit and normal without any clinical observable condition apart from a developmental defect of the right thumb which makes it different from the left thumb. From the ten fingerprint patterns taken with the aid of a scanner from the subject, only the abnormal right thumb of the subject with whorl fingerprint pattern has three deltas which is unconventional to the traditionally broadly known only two deltas seen in all whorl patterns in fingerprints. Fingerprint deltas are only present in loops and whorls. There are basically four types of fingerprint whorls. The plain with two deltas, Central pocket with two deltas, the double loop whorls with two deltas and accidental whorls which has two or more deltas. Theoretically, less than 1 in 1000 people have extremely rare fingerprints. The three deltas in a fingerprint whorl pattern may exist in accidental whorls, but no mention is made of it in plain whorls which thus make this case perhaps the first ever known plain whorl with three deltas. This minutiae is uncommon in normal patterns. In the related case, the thumb of this young man is abnormally developed enwomb and has a whorl pattern with three deltas. It is imperative this pattern is taken into consideration when evaluating or interpreting fingerprint, though the number may be statistically minor, it is still essential this is taken into account in manual and especially automatic fingerprint identification software development and evaluations.

Keywords: Unconventional fingerprints, three deltas fingerprints, fingerprints analysis, fingerprints whorl with three deltas.



ISCA-ISC-2015-9FMDN-21-Oral

Knowledge regarding Dengue among the Health science students of Dengue hit region of Nepal

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Abstract: Dengue fever (DF) is the most rapidly spreading mosquito-borne viral disease in the world. Two-fifth of the world's population is at risk from dengue. Nepal was regarded DF free until 2004. Since then dengue virus has rapidly expanded its range even in mountain regions of Nepal, and frequent outbreaks are recorded where majority of cases reported in three districts of the Terai region adjoined to Indian border i.e. Chitwan, Nawalparasi, and Rupandehi. The aim of this paper is to assess Knowledge on dengue infection among health science students of one of the dengue hit region of Nepal. It was a cross-sectional study conducted among medical and dental students of Chitwan medical college, Bharatpur Nepal in September 2015. Pretested questionnaire was used to collect the needed information. The extent of knowledge of an individual student on Dengue was measured on the basis of the given response to 11 objective questions. The correct response to each question was given the score '1' and incorrect or not-sure response the score '0'. The level of knowledge was categorized into 3 levels by mean \pm 1 SD. The cutoff point of the poor, moderate and good knowledge were $<$ mean-1SD, mean \pm 1 SD and $>$ mean+1SD respectively. Overall, one-fifth respondents had good level of knowledge on Dengue where nearly one-tenth of respondents were having poor level of knowledge. There was no significance difference on level of knowledge among various categories of health science students. High proportion of Medical students have moderate to low level of knowledge on dengue. It signifies the need of awareness raising programme to all sphere of population irrespective to their profession and literacy level.

Keywords: Dengue fever, medical, dental, mosquito, knowledge.

ISCA-ISC-2015-9FMDN-22-Oral

Development and Status of Nursing in Nepal

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Abstract: Nursing, a highly charming profession for Nepalese females today was perceived as a low type of service by the conservatives and male dominated society in the past. It was until period of 1973-1976 when the then Princess Prekshya Rajya Laxmi Devi Shah enrolled in a nursing training which greatly convinced the society in accepting the profession positively. With the advancement of health education and service systems and technology, the nursing service started to be felt as crucial in health service and its education was gradually incorporated as a formal program in health education. The scenario has greatly transformed from the production of eleven nurses from the first nursing institute School of Nursing established in 1956 in Lalitpur district to the present number of 59,051 registered nurses and versatile nursing programs run by several colleges and institutes under the affiliation of four universities, one health institute and one council. Despite the fascinating aspects, the problems like increasing cost of nursing education, decrease in quality education, lack of satisfactory job opportunities, initial volunteer and free service, low and untimely payment of salary have equally arose the levels of dissatisfaction. As a result, the trend of going abroad for both quality and cheap education, and high paying jobs have been observed in last two years.

Keywords: Nepal, nursing, education, service.

ISCA-ISC-2015-9FMDN-23-Oral

Antibiogram typing of Urinary Pathogens among Patients Visiting Tertiary Hospital, Dharan, Sunsari, Nepal

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Abstract: Urinary tract infection is commonest bacterial infection that occurs in all populations and ages; however, most common in women. The objectives of the study are to determine the prevalence of significant bacteriuria among the UTI patients and to assess the trend of multidrug resistance pattern among positive isolates. Urine samples were collected aseptically from March to August 2014 and cultured in bacteriological media by semi quantitative standard loop method.



Identification of the significant isolates was done by standard microbiological techniques. Antibiotic susceptibility testing was done by Kirby Bauer disc diffusion method. Data were analyzed by SPSS version 16 and Microsoft Office Excel 2007. Out of 752 samples, significant growth was seen in 13.96 %, among which higher percentage was due to gram negative rods. Highest number of significant bacteriuria belonged to age groups (21-30). Females had higher percentage of significant bacteriuria compared to males. Of the total antibiotics used, most (98.5%) gram negative isolates were sensitive to Chloramphenicol followed by 97.9% Gentamicin and Tobramycin and all isolates were (100%) resistant to Amoxicillin. All the gram positive isolates were 100% sensitive to Gentamicin and Azithromycin. Multidrug resistance was observed in 89.52% of the total bacterial isolates. The MDR was higher in female than male. In this study the most common causative organism for UTI was E.coli in which most of them were MDR. Higher resistance was seen to Amoxicillin. These results suggest for a continual evaluation and regular monitoring of antimicrobial agents for the empirical therapy of community and hospital acquired UTIs.

Keywords: Midstream urine, significant bacteriuria, UTI, MDR,

10. Family, Community and Consumer Sciences

ISCA-ISC-2015-10FCC-05-Oral

A Conceptual Review on women Entrepreneurship Development and Poverty Alleviation in India

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Abstract: Ensuring sustainable livelihoods and alleviating poverty remain serious challenges for policy makers worldwide and in India too. Global economy in general and Indian economy in particular is poised for accelerated growth driven by entrepreneurship. Women entrepreneurship development for poverty alleviation combining motivation, training, and counseling, are already well known as an effective tool for growth and poverty reduction. This conceptual paper indicates and emphasizes the women entrepreneurs as the potentially emerging human resource in the 21st century to overcome the economic challenges in Indian perspective. By reviewing different research articles, research journals and case studies the researcher talks about the status of women entrepreneurs and also analyze the factors which motivate women to start their own venture and the problems faced by them. The paper examines that despite emphasis and importance given to development of women entrepreneurship, the pace is slow. This may be due to the various problems such as Problem of Finance, Limited Mobility, Lack of Education, and Male dominated society, Low risk-bearing ability, Social recognition etc. Due to these the enterprises of women face several problems in finance, marketing and expansion. The paper concludes that women entrepreneurship is essential for rapid and sustained economic growth of India but there is urgent need to change the mindset of the average conservative Indian society, support and cooperation by society members, relaxations in government policies schemes in promoting economic empowerment of women and entrepreneurship as a path-way for fighting poverty.

Keywords: Poverty alleviation, entrepreneurship development, women entrepreneurs, problems, economic empowerment.

11. Material Sciences

ISCA-ISC-2015-11MatS-07-Poster

EDX Studies of Graphene Oxide reduced using Metal Acetates

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Abstract: Since its discovery in 2004, Graphene has become centre stage attention of scientists, researchers and industry worldwide. Graphene can be produced by mechanical exfoliation of graphite. But the problem is production of graphene sheets at large scales although graphite is available in abundance. A promising route for production of large quantities is a reduction of Graphite oxide (GTO) synthesized using Hummer's method by oxidation and intercalation of Graphite layers. Graphite oxide contains oxygen-based groups in abundance and can be exfoliated into graphene oxide (GO) nano sheets using ultrasonic devices. Graphene Oxide is used to produce graphene like structure by reducing the oxide groups and obtain Reduced Graphene Oxide (rGO) by chemical and thermal reduction. Many chemical have been used for this purpose most of which are hazardous. Thermal reduction requires reflux reactions at high temperatures. This paper studies the synthesis of reduced graphene oxide by reduction process using different metal acetates from graphene oxide



synthesized by Hummer's method. EDX, XRD and FTIR studies were performed to study the characteristics of reduced Graphene Oxide (rGO).

Keyword: Graphene oxide, reduced Graphene oxide, EDX, Hummer's Method, Metal acetate.

ISCA-ISC-2015-11MatS-12-Oral

Biodegradable Copolyester Composites with Wheat Stalk Microfibrillated Cellulose

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Abstract: In this work, microfibrillated cellulose (MFC) was extracted from a series of thermo-chemical and mechanical treatments on agricultural waste, the wheat stalk. The MFC was then compounded with poly (butylenesadipate-co-terephthalate), PBAT, a biodegradable polymer, via melt mixing followed by compression moulding. The samples were analyzed by Fourier transform Infrared spectroscopy (FTIR), tensile testing, microindentation technique, and thermogravimetric analysis (TGA) as well as differential scanning calorimetry (DSC). The degradation behaviour of the composites was measured by two different methods: soil degradation and microbial degradation. The results showed that the polymer was homogeneously compounded with the cellulosic filler. The composites possessed rather good thermal stability, but low ductility as shown by reduction in elongation at break (see Fig. 1). The composites were found to be easily degradable either by microbial attack or under soil burial.

Keyword: Biodegradable, copolyester, composites, stalk, microfibrillated, cellulose.

12. Mathematical and Statistical Sciences

ISCA-ISC-2015-12MSS-11-Oral

Factor-type Estimator for Estimating Population Variance

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Abstract: To estimate the population total or mean of study variable Y, the use of auxiliary variable X is most frequent phenomena in practice. Ratio, product, difference and regression estimator are useful for more efficient estimation of the parameter in question in presence of auxiliary information. Such all estimators are considerable when variables X and Y correlated. It is clear that under suitable conditions efficient estimation of the variance of the estimator of the population total or mean of the characteristics Y is also possible using such estimation techniques. The use of auxiliary information has been widely discussed in sampling theory. Auxiliary variables are used in sampling theory to and the improved sampling designs and to achieve higher precision of the estimates of some population parameters such as mean, variance of the study variable. The use of auxiliary information can be made on both designing stage and estimation stage. In survey sampling literature, a great variety of techniques using the auxiliary information by means of ratio, product and regression methods have been used. Particularly, in the presence of multi-auxiliary variables, a wide variety of estimators have been proposed, following different ideas, and linking together ratio, product or regression estimators, each one exploiting the variables one at a time. In this paper we have proposed factor-type estimator using known values of some population parameters of the auxiliary variable to estimate the population variance of the study variable. The expression for the bias and mean squareerror (m.s.e.) of the proposed estimator has been derived up to first order of approximation. A comparison has been made with some well known estimators and it is shown that the proposed estimator is better than the other estimators. An empirical study has been carried out on an artificial population.

Keywords: Ratio estimator, dual to ratio estimator, auxiliary information, bias, mean square error.

ISCA-ISC-2015-12MSS-20-Oral

Magnetogasdynamic Plane Shock in three Dimensional Flow

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Abstract: In this paper, we study the reflection of plane shock wave in magnetogasdynamics. In this study we achieve



a very high pressure and temperature state by a reflected shock wave. We consider the plane geometry and solve the three dimensional, time- dependent system of hyperbolic equations by Rusanov difference scheme.

Keywords: Shock reflections, azimuthal magnetic field, Rusanov difference scheme.

13. Pharmaceutical Sciences

ISCA-ISC-2015-13PCS-04-Poster

To Prepare the Nimesulide Microsphere by using Gelatin (4% and 6%) Encapsulated HPMC (0.025%) and Compare the Evaluations of the Prepared Microspheres applying Various Techniques

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Abstract: Microspheres are colloidal drug delivery system; used for multifarious and advantageous over conventional dosage forms for small size (less than 100 μm) achieves target specificity. Microspheres prepare from variety carrier materials (gelatin, albumin). Gelatin is proteineous biodegradable polymer obtained from partial hydrolysis of collagen derived skin connective tissue and animal bones. Gelatin microspheres used as efficient carrier system for novel drug delivery. Gelatin microspheres chemically, physically stable, non-immunogenic, biodegradable, and capable of accommodating variety of drug molecules in relatively non-specific fashion. They rapidly removed from vascular system by phagocytosis, potentially localized in reticulo-endothelial system, found within cytoplasm of tumor cells.

Keywords: Microspheres, gelatin, biodegradable, colloidal, collagen.

ISCA-ISC-2015-13PCS-13-Oral

Immunomodulatory studies on Triterpenoids from *Scoparia dulcis* Linn.

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Abstract: Glutinone (1), coixol (2), friedelin (3), glutinol (4), and betulinic acid (5) were isolated from the plant *Scoparia dulcis*. Their structures were identified using mass and 1D- and 2D- NMR techniques. All the compounds were tested for their immunomodulatory potential in oxidative burst assay. Compound 1 showed potent inhibitory effect on the release of reactive oxygen species (ROS) from zymosan activated cells from whole blood ($\text{IC}_{50} = 4.3 \pm 0.6 \mu\text{g/mL}$) compared to standard drug ibuprofen in whole blood ($\text{IC}_{50} = 11.2 \pm 1.9 \mu\text{g/mL}$) as well as it also showed inhibition of ROS produced from isolated PMNs ($\text{IC}_{50} = 5.0 \pm 0.3 \mu\text{g/mL}$). Compound 1 when further tested for its effect on pro-inflammatory cytokines TNF- α , IL-1 α and on nitric oxide (NO), was found to have inhibitory effect on the production of TNF- α (19 \pm 1.0 %) at a single moderate concentration of 25 $\mu\text{g/mL}$. On the other hand a weak inhibitory effect of this compound was also observed on the production of IL-1 α and NO production. Whereas, compounds 2-5 showed no effect ($\text{IC}_{50} = >100$) on the release of ROS from zymosan activated cells.

Keywords: *Scoparia dulcis*, glutinone, immunomodulatory, reactive oxygen species (ROS), pro-inflammatory cytokines.

ISCA-ISC-2015-5CIT-04-Oral

Traffic Road sign detection and recognition using Geometric shapes and Background color: Laying a foundation to use augmented reality (A.R.) In autonomous vehicle navigation and decision making

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Abstract: The world is growing at a fast pace and research is widespread in each and every area. One Such Field is



Automotive Industry. There are many Techniques which are currently being utilized for Navigation and Road Safety. Here in this paper, we have proposed a methodology with Augmented Reality as a new technique which acts as a navigation aid in autonomous vehicles. Automatic detection of traffic signs plays a vital role in navigation. This paper proposes a system in which the automatic recognition of traffic signs can be done by extracting the geometric features of a particular sign. The input image of the traffic sign from the camera is used to categorize the shape of the sign, and then on the basis of background color along with the properties of geometric shapes present, the sign is recognized. A simple yet definitive and optimized algorithm in which geometric shape based, color based recognition and image identification techniques together with Augmented Reality has been employed.

Keywords: Augmented reality, pseudo autonomy, navigation, road safety, and traffic road sign detection.

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Factors Influencing Assertiveness of Prospective Teachers of the University of Colombo, Sri Lanka

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Abstract: This study aimed to measure assertiveness of the prospective teachers of the Faculty of Education, University of Colombo and to determine the factors influencing assertiveness. The sample comprised of 100 female undergraduates representing all three media of instruction; Sinhala, Tamil and English. They were selected using a stratified sampling technique. The original and the translated versions of Rathus Assertiveness Schedule consisted of 30 items were used to measure assertiveness. Ex-post facto survey design was used. Analysis of data was done descriptively as well as inferentially using chi square test for association. Findings indicated that approximately two third of the students were seemed to be possessing assertive behaviour. Compared to non-assertiveness in both Sinhala and Tamil media groups, majority of the participants in English medium group was found to be categorized as having non-assertiveness. Among the factors that influence assertiveness of students, medium of instruction and father's occupational levels were found to be statistically significantly associated with assertiveness. The study recommended carrying out a longitudinal survey on assertiveness of students before and after they are enrolled to the Faculty of Education to determine whether the lowered level of assertiveness is because of English as a medium of instruction and to introduce specific courses aiming at enhancing the acquisition of assertiveness skills.

Keywords: assertiveness, demographic variables, bachelor of education, prospective teachers, medium of instruction.



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