International Conference On Recent Trends In Chemical Sciences

January 12-13 ,2017

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Department Of Chemistry,
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Editors:-

1) Dr. Mahendra Vyas

2) Dr. Manoj Singh Shekhawat

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CONVENER MESSAGE

Dear Colleagues,

First of all, I should like to express my sincere thanks to all of you for participating in this international conference on recent trends in chemical sciences, the venue for which is Bikaner, India.

In recent years, enormous progress has been made in developing new composites throughout the world. This meeting will truly serve as international forum for scientist, researchers, academician and equipment suppliers to embrace and share a diverse range of basic studies, techniques and experience.

Almost two hundred and fifty abstracts have been received from participants from all over the country.

I wish you all a warm welcome to Bikaner, a highly successful conference, and a most pleasurable stay in Bikaner.

Respectfully Yours,
Dr. Mahendra Vyas
Convener, ICRCS-2017

EDITORS MESSAGE

Dr. M S Shekhawat

It gives me immense pleasure to welcome you all attendees to **International Conference on Recent Trends in Chemical Sciences**. The specialty of this conference stems from the fact that the participant are came from top most research institutes and universities. With a committed voluntary workforce, a humongous amount of effort went into the preparations pertaining to this event and I would like to thank them all for contributing their time, money, sweat and energy towards this cause.

It has been very heartening to observe all the committees working in unison towards making this convention a great success. We should also be striving for making everyone feels proud of our achievements.

I am so honored to be the co-convener for this international conference and welcome you all to Bikaner to have a great time and entertainment.

Best Wishes

Dr. M S Shekhawat

Co-Convener, ICRCS-2017

Conference Program Scheduel

12th January 2017 (Thursday)

8:15-10:15 AM	Breakfast and Registration	Faculty House,Vet. Auditorium
10:15-11:00 AM	Inaguration Ceremony	**Chief Guest** :- Prof. A.K Gahlot Vice-Chancellor RAJUVAS Bikaner. **Guest Of Honour** :- 1) Dr. H.P. Vyas (Former Director SSPL ,New Delhi) 2) Prof. A.K. Prasad (University Of Delhi) 3) Dr. M.S. Shashidhar (Sr.Scientist ,National Chemical Laboratory ,Pune) **Patrons**:- 1)Dr. J.P. Bhamu (Principal,Govt.Engineering College Bikaner) 2)Dr. S.K. Bansal (Principal,College of Engineering & Technology Bikaner)
11:00-12:00 PM	Keynote Lecture Session	**Session Chair:-** Prof. Rajpal Sharma **Invited Speaker:-** 1)Prof. A.K. Prasad 2) Dr. M.S. Shashidhar
12:00-12:30 PM	Tea Break	
12:30-1:30 PM	Invited Lecture Session-1st	**Session Chair**:- Prof. A.K. Prasad **Invited Speakers:-** 1)Prof. Rajpal Sharma (Punjab Universty) 2)Prof. Ashu Rani(University of Kota) 3)Prof. Dalip Kumar (BITS ,Pilani)
1:30-2:30 PM	**LUNCH**	
2:30-3:30 PM	Poster Session-1st (1-75)	**Session Judges** :- 1) Dr. R.P Mathur (Govt.Dungar College Bikaner) 2) Dr. H.K Pandey(Govt.Dungar College Bikaner) 3) Dr. R.K.Purohit(Govt.Dungar College Bikaner)
3:30-4:00 PM	Tea Break	

4:00-5:30 PM	Poster Session-2nd (76-150)	**Session Judges**:- 1) Prof. Ashu Rani 2) Prof. Dalip Kumar 3) Dr. Rama Gupta
5:30-7:00 PM	Cultural Programme	
7:00	**Dinner**	

Conference Programme Scheduel

13th January 2017

8:30-9:30 AM	Breakfast (Faculty House)	
9:30-11:30 AM	Invited Lecture Session 2nd	**Session Chair:**- Dr. M.S. Shashidhar **Invited Speakers:-** 1)Prof. N.B. Patel (Veer Narmad South University ,Gujrat) 2)Dr.Kapil Arya (Sr.Scientist CSIR,New Delhi) 3)Prof. M.M. Saxena(M.G.S University ,Bikaner) 4) Dr. N.K Bhojak(GCRC, Bikaner)
11:30-12:00 PM	**Tea Break**	
12:00-1:00 PM	Poster session-3rd (151 on wards)	**Session Judges:-** 1)Prof. N.B Patel 2) Dr. Kapil Arya 3) Prof. M.M. Saxena
1:00-2:00 PM	Lunch	
2:00-3:30 PM	Invited Lecture Session 3rd	**Session Chair:**- Dr. N.K Bhojak **Invited Speakers:-** 1)Dr. J.L Jat (Central Uni.,Lukhnow) 2) Dr. Vijay Devra(University of Kota) 3) Dr. Deepika Chaudhary (UOR,Jaipur) 4) Dr.S.C.Moi (NITK,Surathkal) 5) Dr.R.K.Purohit(Govt.Dungar College Bikaner)
4:30-5:00 PM	**High Tea**	

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017_Khandy_ICRCS2017	Electronic Structure and Magnetic Properties of Half-metallic Perovskites: BaPaO3 and BaUO3	Shakeel Ahmad Khandy, Tahir Mohiuddin Bhat, Saleem Yousuf, Ishtihadah Islam and Dinesh C Gupta
018_Farheen_ICRCS2017	The Optical and structural properties of Graphene nanosheets and Tin oxide nanocyrstals composite	Farheen, Azra Parveena and Ameer Azam
019_Chandel_ICRCS2017	Structural, Morphological and Optical Studies of F Doped SnO2 Thin Films	Tarun Chandel, Vikas Thakur , Shailendra Kumar Dwivedi, M. Burhanuz Zaman and Poolla Rajaram
020_Jariwala_ICRCS2017	Structural and Electrical Properties of Ultrathin SiXC (X = 4, 5, 6) Nanowires: A First Principles Calculation	P. H. Jariwala, Y. A. Sonvane, Sanjeev K. Gupta and P. B. Thakor
021_Sharma_ICRCS2017	Theoretical Prediction Of The Performance Of Proton Exchange Membrane Fuel Cell With Effects Of The Thickness And Conductivity Of The Membrane	Arvind Sharma and A. K. Nagar
022_Bhargava_ICRCS2017	Structural,Optical and Dielectric properties of Graphene Oxide	Richa Bhargava and Shakeel Khana
023_Praveen_ICRCS2017	Variation in Band Gap Energy and Electrical Analysis of double Doped Cobalt Ferrite	Azra Parveen, Shraddha Agrawal and Ameer Azam
024_Mahdi_ICRCS2017	Microstructural and Optical Properties of CdS Nanoparticles Synthesized by Sol Gel method	Hadeel Salih Mahdi, Azra Parveena, Shraddha Agrawal and Ameer Azam
025_Agrawal_ICRCS2017	Electrical and thermal properties of Ca and Ni doped Barium Ferrite	Shraddha Agrawal , Azra Parveena and Ameer Azam
026_Sahoo_ICRCS2017	Charge Transfer and Optical Properties of Trifluoromethyl Substituted Benzodithiophene (TFMBDT): A Theoretical Study	Smruti Ranjan Sahoo, Sridhar Sahu and Sagar Sharma
027_Ahmed_ICRCS2017	Natural Convection In Annular Cone: Influence Of Radius Ratio	Salman Ahmed N.J, Sarfaraz Kamangar, Abdullah A.A.A. Al-Rashed , T.M.Yunus Khan a)
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029_Ahmad_ICRCS2017	Heat Transfer In a Conical Porous Medium Due To Inner And Top Surface Heating: Effect Of Radius Ratio	N. Ameer Ahamad , T.M.Yunus Khan
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031_Athani_ICRCS2017	Heat Transfer Prediction In a Square Porous Medium Using Artificial Neural Network	Abdulgaphur Athani, N.Ameer Ahamad, Irfan Anjum Badruddin
032_Ahmed_ICRCS2017	Thermal Non-Equilibrium In Porous Medium Adjacent To Vertical Plate:	Salman Ahmed N.J, Sarfaraz Kamangar, K.S.Nazim Ahamed,

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089_Deepika_ICRCS2017	Study of Temperature Dependent Electrical Properties of Se80-xTe20Bix(x=0,3,6) Glasses	Deepika and Hukum Singh
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093_Ansari_ICRCS2017	Synthesis, Characterization and Catalytic Application of Iron Schiff base Complex in Suzuki-Miyaura Cross-Coupling Reaction	Rasheeda M. Ansari, Badekai Ramachandra Bhat
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101_Ahamad_ICRCS2017	Radiation Effect On Heat Transfer In Porous Annulus	N.Ameer Ahamad and Abdulgaphur Athani
102_pal_ICRCS2017	Phytomedicine: Alternative Treatment Option For Advanced Cancer	Sanjoy Kumar Pal
103_Shivran_ICRCS2017	Preparation of 1-Ethyl-3-methylimidazolium tetrafloroborate Doped Lithium Silicate Glasses With Enhance Conductivity by Sol-Gel Process	Rajinder Shivran, S. C. Sivasubramanian, Anshuman Dalvi
104_Thakur_ICRCS2017	Thermal Behaviour of GdCo1-xMnxO3 Cobaltates	Rasna Thakur, Rajesh K. Thakur and N.K. Gaur
105_Sarwan_ICRCS2017	Pressure Induced Phase Transition of Semiconducting Alloy TlxGa1-xAs	Madhu Sarwan and Sadhna Singh
106_Ahmed_ICRCS2017	Heat and Mass Transfer in Vertical Porous Medium Due To Partial Heating	Salman Ahmed N.J,T.M.Yunus Khan, N. Ameer Ahamad, Sarfaraz Kamangar
107_Agarwal_ICRCS2017	A Comparative study : Greener vs Conventional synthesis of 4H-Pyrimido[2,1-b]benzothiazoles via Biginelli reaction	Shikha Agarwal and Divyani Gandhi
108_Meena_ICRCS2017	Biosynthesis of Silver Nanoparticles from (Tea Leaves') for Organic Pollutants Degradation	Rajesh Kumar Meena and Neelu Chouhan
109_Tapdiya_ICRCS2017	Micro Structural Analysis and Magnetic Characteristics of Rare Earth Substituted Cobalt Ferrite	Swati Tapdiya*, Sarika Singh, Shobha Kulshrestha and A.K. Shrivastava
110_Shrivastav_ICRCS2017	Multisite Ion-Pair Receptor Technology: A versatile approach for recognition of toxic cationic and anionic species	Dr. Rahul Shrivastava
111_Shakeel_ICRCS2017	Synthesis and Structural Characterization of Transition metal doped MgO: Mg0.94Mn0.01TM0.05O (TM = Co, Ni, Cu)	Shakeel Ishtihadah Islam, Dinesh Varsheney and Shakeel Ahmad Khandy
112_Adhikari_ICRCS2017	Corrosion inhibition properties of hedge plants extracts against mild steel in acidic environment	Dr. Utpal Adhikari
113_Tiwari_ICRCS2017	Polythene glycol (PEG) as a Reusable Solvent System for The Synthesis of 1,3,5-triazines via Aerobic Oxidative Tandem Cyclization of Benzylamines and N-substituted Benzylamines with Amidines under Transition Metal-Free Conditions	Abhishek R. Tiwari and Prof. Bhalchandra M. Bhanage
114_Tapdiya_ICRCS2017	Micro Structural Analysis and Magnetic Characteristics of Rare Earth	Swati Tapdiya*, Sarika Singh, Shobha Kulshrestha and A.K.

	Substituted Cobalt Ferrite	Shrivastava
115_Verma_ICRCS2017	Green Synthesis, Characterization and Applications of Novel Supramolecular Complex of Cobalt (II)	S.K. Verma, Raja Ram, K.K. Verma and N. Bhojak
116_Pandey_ICRCS2017	Aerobic Degradation of Petroleum Hydrocarbons in Soil by Microbial Consortium	Pooja Pandey, Hardik Pathak , Saurabh Dave
117_Ganwanil_ICRCS2017	The Oxidation State Of Iron And Manganese In Polymetallic Nodules From the Central Indian Ocean Basin	Girish Ganwanil, Beena Bhatial,Samay Singh Meenal, R.P. Tripathi
118_Joshi_ICRCS2017	1,3,5-triazine Derivatives As Anticancer Agent : A Molecular Docking Study	Arpita Prasantini Joshi, Anuj Tripathi and Chetti Prabhakar
119_Bhardwaj_ICRCS2017	Electronic Study of CeHg Intermetallic Compound	Purvee Bhardwaj and Sadhna Singh
120_Kumar_ICRCS2017	Conducting Polymer Poly(3-Methylthiophene) Active Material Used As Electrode In Electrochemical Supercapacitors With Polymer Based Electrolytes	Yogesh Kumar, Mohd. Sadiq, Shiv Shankar Gaur, B. Rupini
121_Kaur_ICRCS2017	Electrochemical Degradation of Congo Red Dye From Aqueous Solution Under Amperostatic Conditions	Harpreet Kaur* and Rajvir Kaur
122_Singh_ICRCS2017	Analysis Of Optical And Electronic Properties Of Various Structures Of Cu-Doped CrC Using DFT	Ankur Singh, Mona Devi and *Dr. Sacheen Kumar
123_Gupta_ICRCS2017	Investigation of Photoluminiscence and Dielectric Properties of Pure and Fe Doped Nickel Oxide Nanoparticles	Jhalak Gupta and Arham S. Ahmed
124_Palla_ICRCS2017	Double Diffusive Convection in a Porous Medium due to Partial Heating at Bottom of Vertical Plate	Khalid M. Palla, Mohammed Fahimuddin Mulla, Abdullah A.A.A. Al-Rashed
125_Fahimuddin_ICRCS2017	Effect of partial heating at mid of vertical plate adjacent to porous medium.	Mohammed Fahimuddin Mulla,Khalid M.Pallan, Abdullah A.A.A. Al-Rashed
126_Khaleed_ICRCS2017	Heat and Mass Transfer in a Porous Medium Due to Upper Half Heating of Vertical Plate	Khaleed.H.M.T, Mohammed Fahimuddin Mulla, Khalid.M.Pallan
127_Khaleed_ICRCS2017	Heat Transfer in Porous Annulus: Effect of Aspect ratio	Khaleed.H.M.T, Khalid M.Pallan, Mohammed Fahimuddin Mulla
128_Faimuddin_ICRCS2017	Influence of Radius Ratio on Heat Transfer in Porous Annulus	Mohammed Fahimuddin Mulla, Khalid M.Pallan, Khaleed H.M.T
129_Faimuddin_ICRCS2017	Soliton beam scattering from ZnO Nanostructure film deposited on Silica Substrate using Inverse Scattering Transform Method	Preeti Naruka, Shivangi Bissa
130_Aseri_ICRCS2017	Assessment of heavy metals in sewage water of different areas around Bikaner city	ANURADHA ASERI and SUSHMA JAIN
131_Mandal_ICRCS2017	AC Impedance Spectroscopy of NASICON type Na3Fe2(PO4)3 Ceramic	Biswajit Mandal*, A K Thakur
132_Tiwari_ICRCS2017	Enhancement in Light Harvesting	D.C.Tiwari, Shailendra Kumar

	ability of Photoactive Layer P3HT: PCBM using CuO Nanoparticles	Dwivedi, Pukhrambam Dipak and Tarun Chandel
133_Madan_ICRCS2017	GREEN & SUSTAINABLE NANOCATALYSED SYNTHETIC ROUTE FOR AN EXPLORATION OF KNOEVENAGEL CONDENSATION	Yogita Madan
134_Choudhary_ICRCS2017	Physicochemical and Quantum Mechanical Studies of Potential Antimicrobial Diorganotin (IV)phenoxyacetohydroxamates as Bioactive Molecules	Vineet Kumar Choudhary*, Abhishek kumar, Bhanu Priya and Neeraj Sharma
135_Yadav_ICRCS2017	α-L-Rhamnosidase from Aspergillus terreus MTCC - 3374 use as debittering agent in orange fruit Juice Industry	Sarita Yadav* and and Sudha Yadava
136_Zaman_ICRCS2017	Synthesis and Characterization of Spin-coated Ternary Cu2SnS3 Thin Films	M Burhanuz Zaman*, Tarun Chandel and Poolla Rajaram
137_Dubey_ICRCS2017	Synthesis, Characterization and Anti-inflammatory activity of benzo[b]thiophene based Hydroxytriazenes derivatives.	Rakesh K Dubey
138_Paliwal_ICRCS2017	Facile Hydrothermal Synthesis and Characterization of Novel CoNi2O4 Hexa-nanocones and CoNi2O4-Graphene Heteronanocomposites	Mahesh Kumar Paliwal and Sumanta Kumar Meher
139_Jain_ICRCS2017	Management Of Temple Flower Waste By Vermicomposting And Its Effect On plant growth	Nisha Jain
140_Sharma_ICRCS2017	Synthesis and Complexation Studies of PTA included Schiff bases	Vidushi Sharma, Senthilkumar Muthaiah* and J.K.Kapoor
141_Rahman_ICRCS2017	Optical Properties of Titanium-di-oxide (TiO2) Prepared by Hydrothermal Method	Kazi Hasibur Rahman*, Sayari Biswas, Asit Kumar Kar
142_Yousuf_ICRCS2017	Mechanical and Thermodynamic Properties of New Zr2NiAl Heusler Alloy	Saleem Yousuf, Tahir Mohiuddin Bhat, Shakeel Ahmad Khandy, Srishti Singh and Dinesh C Gupta
143_Sharma_ICRCS2017	Ionic liquid assisted convenient one-pot synthesis of structurally diverse dihydrochromenopyrimidine-2-thiones, dihydopyrimidopyrimidine-2-thiones and dihydroarylpyrimidine-2-thiones derivatives	Kailash Sharma, Sulochana Sharmab, Mahendra Kumar
144_Gangwar_ICRCS2017	Study of Electronic & Optical Properties of ZnO & La Doped ZnO Using DFT In MedeA Software	Rahul Gangwar , Shefali and Dr. Sacheen Kumar,Research Scholar (M.Tech)
145_Thakur_ICRCS2017	Removal of Hazardous Rhodamine B Dye by Using Chemically Activated Low Cost Adsorbent: Pine Cone Charcoal	Anita Thakur* and Harpreet Kaur
146_Kaur_ICRCS2017	Adsorption of Amido black 10B from aqueous solution using natural plant as adsorbent	Rajvir Kaur* and Harpreet Kaur
147_Ray_ICRCS2017	Chemical Reactivity of Hydrogenated Boron-Lithium Clusters (B20Li4H8): A Theoretical Study	Shakti Shankar Ray, * and Sridhar Sahu
148_Vandana_ICRCS2017	The Effect Of Paracetamol On 5-Fluorouracil And Bovine Serum Albumin Interaction: A Biophysical	Vandana and Samanwita Pal

	Study	
149_Sinhha_ICRCS2017	Demonstrating a green emitting Y4MoO9: Er3+/Yb3+ upconversion phosphor for optical thermometry and optical heating	Shriya Sinha and Kaushal Kumar
150_Singh_ICRCS2017	Synthesis and Photoluminescence Properties of CaTiO3:Dy3+ Perovskite Nanophosphors for Lighting Applications	Dhananjay Kumar Singh* and J. Manam
151_Panda_ICRCS2017	PREPARATION OF FLY ASH BASED ZEOLITE FOR REMOVAL OF FLUORIDE FROM DRINKING WATER	Laxmidhar Panda ,Biswabandita Kar and Subhakanta Dash
152_Gondia_ICRCS2017	Spectroscopic Investigation and Luminescent Properties of Schiff base Metal Complex for OLED	Navneet Kumar Gondia*, Jyoti Priya & S. K. Sharma
153_Mohapatra_ICRCS2017	Simulation Of Multilayer Metal-Dielectric-Metal Device For Surface Plasmon Resonance Sensor	Saswat Mohapatra and Rakesh S. Moirangthem
154_Khader_ICRCS2017	Effect of BaTiO3 Doping on the Magnetic Properties of Ni0.75Cu0.25Fe2O4-BTO Composites	S.Abdul Khader, T.Sankarappa
155_Parveez_ICRCS2017	Structural, Dielectric and Conductivity Studies of Transition Metal Ions Doped ZnO Nanoparticles by Combustion Method	Asiya Parveez, Rajeev Ranjan Sinh , Firdous Nayeem, Mohamed Sharif., Arka Chaudhuri, S.Abdul Khader
156_Poonia_ICRCS2017	Optical band gap and Urbach energy analysis of 10ZnO-(20-x)Bi2O3-60SiO2-10K2O-xNd2O3(where x= 0.5,1,0.1,5) glass system	Monika Poonia, Beena.Bhatia
157_Sadhu_ICRCS2017	CHLORPYRIFOS INDUCED HISTOLOGICAL CHANGES IN THE LIVER OF AN AIR BREATHING FISH CHANNA GACHUA	D N SADHU AND QAISUR RAHMAN
158_Rahman_ICRCS2017	EFFECTS OF HEAVY METALS ON BEHAVIOUR AND RESPIRATORY RESPONSES IN AN AIR BREATHING MURREL FISH CHANNA GACHUA	QAISUR RAHMAN AND D N SADHU
159_Sandhu_ICRCS2017	EFFECT OF ARSENIC ON CERTAIN BIOCHEMICAL PARAMETERS IN LIVER TISSUE IN AN AIR BREATHING FISH CHANNA GACHUA	D N SADHU AND QAISUR RAHMAN
160_Rahman_ICRCS2017	ADAPTIVE CHANGES IN RESPIRATORY MOVEMENTS IN AN AIR BREATHING MURREL FISH CHANNA GACHUA EXPOSED TO ENDOSULFAN	QAISUR RAHMAN AND D N SADHU
161_Sudsuha_ICRCS2017	Preparation and characterization of polymer Clay Nanocomposite	Amit kumar Sudhansu, Prakash Singh, Vishal Modi
162_Sharma_ICRCS2017	Inhibiting effect of Sodium Benzoate in autoxidation of S(IV) in aqueous solution	A.K. Sharma, H. Sharma1, R. SenRashmi Sharma and D. S. N. Prasad
163_Kumari_ICRCS2017	Blue upconversion emission studies in Gd2(MoO4)3:Tm3+ phosphor for lighting application	Anita Kumari*, Abhishek Kumar Soni and Vineet Kumar Rai

164_Prajapat_ICRCS2017	Thermal and Biological evolution of Fe(III)-Sulfanilamide complexes synthesized by Green strategy	Garima Prajapat, Uma Rathore, Rama Gupta and N. bhojak
165_Soni_ICRCS2017	Effect of Li+ Ions in Tm3+-Yb3+ Codoped Y2WO6 Phosphor For Improved Upconverter	Abhishek Kumar Soni*, Anita Kumari, Abhishek Dubey and Vineet Kumar Rai
166_Sharma_ICRCS2017	Biomass Energy: Global Potential For Sustainable Future	Anu Sharma, Gayatri Sharma
167_Sharma_ICRCS2017	Recovery and Recycling of Solid Waste in Present Scenario	Gayatri Sharma,Anu Sharma
168_Maurya_ICRCS2017	Synthesis and Upconversion Emission Studies of NaYF4: Er3+/Yb3+ Phosphor Nanoparticles	S. K. Maurya* S. P. Tiwari, A. Kumar and K. Kumar
169_Nayeem_ICRCS2017	Structural, Dielectric and Conductivity Studies of ZnFe2O4-NiO Composites Using Combustion Method	Firdous Nayeem, Rajeev Ranjan Sinha, Asiya Parveez, Mohamed Sharif.S, N.V.Giridharan and S.Abdul Khader
170_Pareek_ICRCS2017	Prioritizing and Time Management in the Laboratory and Work place	Dr Preeti Pareek
171_Parveez_ICRCS2017	Effect of Ni+2 Doping on Magnetic Properties of Nano MgFe2O4 by Combustion Method	Asiya Parveez, M.S.Shekhawat, N.V.Giridharan and S.Abdul Khader
172_Kumari_ICRCS2017	Nondestructive Evaluation of Degradation of Papaya Fruit using intensity based algorithms	Shubhashri Kumari* and Anil Kumar Nirala
173_Gupta_ICRCS2017	Synthetic, spectroscopic and structural aspects of Trimethylantimony(V) complexes with oximes containing heterocyclic ring system	Anjali Gupta and Pooja Rana
174_Rana_ICRCS2017	A theoretical study on Cerium-Nickel intermetallic compound	Pooja Rana and Anjali Gupta
175_Sharma_ICRCS2017	Investigations on Photo-electrochemical Performance of Boron doped ZnO Nanorods Synthesized by Facile Hydrothermal Technique	Akash Sharma, Mohua Chakraborty , R. Thangavel
176_Kumar_ICRCS2017	Quality Assessment Of The Ground Water Of The Villages Of Sirsa District (Haryana).	Parul Kumar, Pankaj Rohewal, Dr. Sushma Jain
177_Mehla_ICRCS2017	ANALYSIS OF WATER QUALITY OF AROUND THE NEI LIMITED . GUNSI, NEWAI,TONK(Raj.) INDIA PRE-MONSOON SEASON, MAY 2013	Satish Kumar Mehla
178_Vyas_ICRCS2017	Atmospheric black carbon Aerosols scattering & absorbtion coefficient parameters Over Western Indian Thar Dessert Location	B.M. Vyas , Anil Kumar Satoliya & M.S. Shekhawat
179_Choudhary_ICRCS2017	LiOtBu Promoted Intramolecular [3+2]-dipolar Cycloaddition Reaction-A Rapid Access to Benzo-pyrano Pyrazoles	Deepika Choudhary, Vineeta Khatri and Ashok K. Basak
180_Singh_ICRCS2017	Rare earth substitution on structural and optical behaviour of CdSe thin films	Sarika Singh, A.K.Shrivastava
181_Joseph_ICRCS2017	Synthesis, structural characterization and biological evaluation metal complexes of pyrazoline derivatives	J. Joseph* , K. Nagashri and M. Sirajul Muneera
182_Sahay_ICRCS2017	Concentration Dependent mechanical	Suman Sahay*, Mukesh Kumar

	properties of Nickel incorporated Diamond like carbon(Ni-DLC) thin film	Pandey*, Asit Kumar Kar
183_Biswas_ICRCS2017	Optical Properties of Titanium-di-oxide (TiO2) Prepared by Hydrothermal Method	Sayari Biswas*, Kazi Hasibur Rahman, Asit Kumar Kar
184_Nagashri_ICRCS2017	Synthesis, structural characterization and biochemical evaluation copper complexes of hydroxyflavone derivatives	K. Nagashri and J.Joseph
185_Ahmed_ICRCS2017	Effect of Temperature on Microstructural, Optical and Dielectric Properties of Pure SnO2 Nanoparticles	Ateeq Ahmed*, P. Tripathi, M. Naseem Siddique and Tinku Ali
186_Kumar_ICRCS2017	SrBi4Ti4O15 Aurivillius Phase Thin Films by Pulsed Laser Deposition using Nd:YAG Laser	Ashutosh Kumar and Ajay D. Thakur
187_Sharma_ICRCS2017	Laplace Adomian Decomposition Method to study Chemical ion transport through soil	Ajay Sharma, Ashu Rani and Arun Kumar
188_Meghwansi_ICRCS2017	Microbial Lipase Mediated Green Synthetic Processes	Dr. Gautam Kumar Meghwanshi
189_Gautam_ICRCS2017	Adsorptive Removal Of Heavy Metals By Hydrothermally And Chemically Modified Fly Ash	NIDHI GAUTAM *ASHU RANI
190_Maurya_ICRCS2017	Upconversion Emission Studies of Y2O3: Tm3+/Yb3+ Phosphor Nanoparticles as a Temperature Sensor	S. K. Maurya*, S. P. Tiwari, A. Kumar and K. Kumar
191_Rajoriya_ICRCS2017	Imidazolium based ionic liquid immobilized on activated fly ash: efficient and recyclable catalyst for esterification reaction	Priyanka Rajoriya, Ashu Rani
192_Karsolia_ICRCS2017	Heterogeneous Catalyst For Biodiesel Synthesis With High Catalytic Performance	Deepak Karsolia ,*Ashu Rani
193_Ahmed_ICRCS2017	Raman and UV-visible absorption Spectra of Sn1-xVxO2 (x = 0.00 and 0.05) Nanoparticles	Ateeq Ahmed*, M. Naseem Siddique, P. Tripathi and Tinku Ali
194_Yadav_ICRCS2017	Analyzing Effect of Gas Flow Rate on Electrical and Sensing Properties of Conducting Polymer based Gas Sensor	Anju Yadav, Ajay Agarwal
195_Kumar_ICRCS2017	Fourier Transform Infrared Spectroscopic Characterization of BSCCO superconductors	ROHITASH KUMAR
196_Meena_ICRCS2017	Biosynthesis of Silver Nanoparticles from (Tea Leaves') for Organic Pollutants Degradation	Rajesh Kumar Meena* and Neelu Chouhan
197_Ghandhe_ICRCS2017	Synthesis and Dielectric Properties of L-Tyrosine amino acid doped TGS crystals	Anita Rajkumar Ghandhe and Basavaraja Sannakki
198_Tazwar_ICRCS2017	Synthesis And Characterization Of Copper Nanoparticles Using Ascorbic Acid As Reducing And Capping Agent	Gajala Tazwar, Niharika Nagar, Naveen Mittal, Vijay Devra
199_Bharti_ICRCS2017	Environmental Pollution and monitoring in Antarctica	Dr. Pawan Kumar Bharti
200_Barbar_ICRCS2017	Structural properties of Pr doped Zn-Mg Ferrite	S. K. Barbar, Sahi Ram, Shailndra singh
201_Mandawta_ICRCS2017	Synthesis of Ag@ZnO/AgCl	Niranjan Kumar Mandawata,

	nanocomposites by one-pot refluxing method and optical properties	Rajesh Kumar Meenaa, Neeta Gurbania, Kahksan Ansaria, Neelu Chouhan
202_Nagar_ICRCS2017	Synthesis of Fe2O3 Nanoparticles, Structural and Optical Properties	Asha Nagar, Rajesh Kumar Meena*, Roopa Kumari, Pinky Nagar, Abhina Kumari, Aradhana Rathore, Shubham Malav and Neelu Chouhan*
203_Singh_ICRCS2017	Regio- and stereoselective synthesis of novel spiropyrrolidine /thiapyrrolizidines using deep eutectic solvent as a efficient reaction media	Aakash Singh and Ruby Singh
204_Singh_ICRCS2017	PEG-SO3H catalyzed, environmentally benign synthesis of novel spiro[acenaphthylene-thiazine]diones under sonication in aqueous medium	Ruby Singh
205_Ahmed_ICRCS2017	Characterization of Lipases Isolated from The rmotolerant Bacteria of Thar Desert	Ajaj Ahmed & Gautam Kumar Meghwanshi
206_Gawale_ICRCS2017	4-methyl-2H,5H-pyrano based 2-hydroxy-4H-pyrido[1,2-a]pyrimidin-4-one fluorescent brightening agents– synthesis, photophysical properties and dyeing studies	Yogesh Gawale, Nagaiyan Sekar
207_Tripathi_ICRCS2017	Preliminary Studies On Nano Composite based gel Polymer Electrolyte	Mukta Tripathi , Anuj Kumar and S. K. Tripathi
208_Sachdeva_ICRCS2017	Reactivity Of Etoricoxib Based On Computational Study Of Molecular Orbitals, Molecular Electrostatic Potential Surface And Mulliken Charge Analysis	Ritika Sachdeva*, Abhinav Soni#, V.P. Singh*, G.S.S. Saini
209_Chopra_ICRCS2017	APPLICATION OF PARTICLE SWARM OPTIMIZATION FOR ECONOMIC LOAD-DISPATCH SOLUTION	Dr. Tarun Chopra a, Keshari Chand Purohitb
210_Chopra_ICRCS2017	PERFORMANCE ENHANCEMENT OF ECONOMIC LOAD-DISPATCH USING GREY WOLF OPTIMIZER TECHNIQUE	Dr. Tarun Chopra , Keshari Chand Purohit
211_Sachdeva_ICRCS2017	Reactivity Of Etoricoxib Based On Computational Study Of Molecular Orbitals, Molecular Electrostatic Potential Surface And Mulliken Charge Analysis	Ritika Sachdeva*, Abhinav Soni#, V.P. Singh*, G.S.S. Saini
212_Singh_ICRCS2017	Synthesis, Characterization and Biological Studies of Cu(II) and Zn(II) Metal Complexes of Schiff base derived from 4-Amino-3-mercapto-6-methyl-5-oxo-1,2,4-triazine	Kiran Singh and Ritu
213_Rajkamal_ICRCS2017	Chloramine T mediated facile synthesis of 1,2,4-triazole derivatives bearing benzothiazolyl and pyrazolyl moieties as pharmacologically active molecules	Raj Kamal*, Vipan Kumar, Ravinder Kumar
214_Sharma_ICRCS2017	Role of Polytungstometalate as Photocatalyst for Removal of Brilliant green	Daksha Sharmaa*and Rakshit Ameta
215_Lokhande_ICRCS2017	Solvent Extraction and	Pradnya Lokhande

	spectrophotometric determination of Copper (II) using 2 – hydroxy 1-naphthaldehyde thiosemicarbazone (HNT) as an analytical reagent	
216_Sahu_ICRCS2017	Study of Modified Electron Band Dispersion and Density of States Due To High Frequency Phonons in Graphene-On-Substrates	Sivabrata Sahu , H.S. Gouda , G. C. Rout
217_Vijayshree_ICRCS2017	Raising Awareness About Environment Through Ecotourism	Vijay shree and Rina Saha
218_Ramesan_ICRCS2017	Effect of Chemically Modified and Unmodified Pumice Particles on the Mechanical and Dielectric Properties of Poly (vinyl alcohol)/ Poly (vinyl pyrrolidone) Blend	M. T. Ramesan, T. K. Manojkumar, P. P. Pradyumnan, and G. Mathew
219_Saha_ICRCS2017	Removal of Toxic Metals from Drinking Water : Few Technologies	Rina Saha and Vijay shree
220_Gahlot_ICRCS2017	Investigation of Photochemical Smog In Bikaner City	Mohit Gahlot, DevashreeRathore, JyotiKatariya and KaluramSihag
221_Chopra_ICRCS2017	ANFIS BASED METHODOLOGY FOR FAULT DIAGNOSIS OF POWER TRANSFORMER	Dr. Tarun Chopra , Manish Vyas
222_Chopra_ICRCS2017	INTELLIGENT TECHNIQUE FOR FAULT DIAGNOSIS PERFORMANCE IMPROVEMENT	Dr. Tarun Chopra a, Manish Vyas
223_Kaur_ICRCS2017	Adsorption Of CO And O2 Molecules On Li Metal Adsorbed Graphene: Search For Graphene Based Gas Sensors	Gagandeep Kaur, , Shuchi Gupta, Keya Dharamvir
224_Sharma_ICRCS2017	COMPARATIVE STUDY OF OXIDATION OF INOSITOL BY TERIARY BUTYL CHROMATE AND TERTIARY AMYL CHROMATE	Amrita Sharma $ K.K.Tiwary
225_Mondala_ICRCS2017	Structural & optical Investigation In Er3+ Doped Y2MoO6 Phosphors	Manisha Mondala, Vineet Kumar Raib
226_Lamba_ICRCS2017	Biological Important Co(II) Ternary Complexes Derived From 2-Substituted Benzothiazoles and Amino Acids	Narendra Pal Lamba
227_Singh_ICRCS2017	Chemical sensing study of acid on iron pthalocyanine pyridine thin film	Sukhwinder Singh
228_Sharma_ICRCS2017	FTIR Study Of RhB In some Solvents	Amit Sharma
229_Suthar_ICRCS2017	Study of thermodynamic and transport properties of binary liquid mixture of diesel with biodiesel at 298.15K	Shyam sunder suthar & Suresh Purohit
230_Janagal_ICRCS2017	Study of particle size distribution of china clay of Nagaur district, Rajasthan , India	Subhash Chandra Janagal, Manoj S. Shekhawat, M.S. Shekhawat
231_Maru_ICRCS2017	Variations in “physio-chemical parameter of waste water” CET & ECB of Bikaner District	Komal Maru, Kunika Ramawat & Ritika Pugalia

Invited Speakers:-

1. Modified Sugars as Precursors for Novel Nucleosides, Amphiphiles and Pseudorotaxanes

Ashok K Prasad

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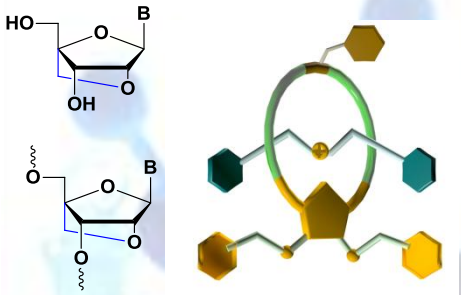
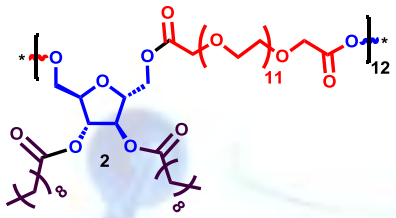
E-mail: ashokenzyme@gmail.com

The use of biocatalysts in the modification of sugars has become an attractive alternative over conventional chemical methods due to their selectivity and high efficiency. We have successfully used lipases for the synthesis of sugar modified bicyclic nucleosides. Further, we have used the modified sugar precursor for the synthesis of amphiphiles, chiral crown ether analogs and corresponding [2]pseudorotaxanes.



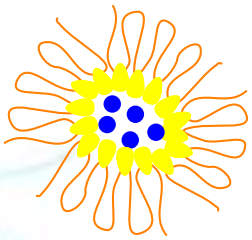
LNA-monomers

[2]pseudorotaxanes



PEG 600

50 % acylation
C-10 alkyl chain



Drug Nanoformulation

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Organic reactions in solid state: Mechanism of acyl transfer reactions in molecular crystals.

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Invited Talk

Synthesis and single crystal X-ray structural studies of Copper(II) complexes

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Abstract

Coordination chemistry- the clothing of metal ion, is a branch of Inorganic chemistry which encompasses chemistry, biology, environment and material science having a direct relevance to life of a human being [1]. And supramolecular chemistry- looking beyond a molecule has developed as a full fledged discipline out of coordination chemistry and consist of two facets: crystal engineering and molecular recognition [2]. It involves role of non-covalent interactions like hydrogen bonding, π...π stacking etc. in stabilizing supramolecular assemblies.

Copper is one of the essential element of life. Its deficiency or excess causes diseases such as Parkinson, Alzimer, Wilson. Therefore, the synthesis and characterization of small molecule copper(II) complexes is a topic of immense interest to inorganic chemists so as to understand the role of copper in biological system and its applications in synthesis, chirality transfer, spin cross-over etc. [3]. With this in mind, this talk will present our recent findings in developing synthetic methodologies and single crystal X-ray structural studies of copper(II) complexes of carboxylates/ sulfonates/ NSAIDs with various nitrogen-donor ligands [4].

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Heterogeneous Acid and Base Catalysts for Industrially Important Organic Transformation

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Abstract

Heterogeneous catalytic technology has emerged as one of the most demanding approach in green synthesis and engineering to address the environmental concerning challenges and plays a vital role in the economic development and growth of chemical industries. Presently environmental legislations are emphasizing chemical industries to adopt new catalytic technologies and to avoid use of traditional hazardous mineral acids and bases as catalysts. A major emerging challenge in use of heterogeneous catalysts is to increase production along with reduction in waste formation, release of toxic emissions and above all water consumption. With intrinsic advantages like ease of separation; catalyst reuse; flow in reactor operation have attracted the chemical industries to adopt new catalytic technologies over homogeneous catalyzed reactions. Solid acid and base catalysts can be categorized on the basis of Brönsted and

Lewis sites present on their surface while the other parameters such as strength and number of these sites and the morphology of the support (e.g. suface area, pore size, pore volume) also plays a key role for development. In solid acid catalysts, generation of pure Brönsted and Lewis acidic sites always has been a challenge because Brönsted acidity often produces from Lewis acid-base complexation . For solid base catalysts, generation of basic sites takes place by removal of H2O and CO2 from the catalytic surface by pretreatment at high temperature for exposure of the surface O atoms of metal oxide responsible for basicity of the catalyst.
The present talk focuses on development of innovative solid acid and base catalysts using few solid waste materials viz. fly ash , volcanic ash and lime stone slurry. The catalysts are characterized for their chemical, morphological, structural and surfacial properties and applied in industrially important esterification, benzylation, acylation, condensation reactions using thermal, microwave and vapor phase reactors. Various activation techniques such as ball milling, microwave and high temperature heating, chemical impregnation, gelation and surface deposition have been used to enhance catalytic attributes of supported catalysts. All the catalysts are found atom efficient, cost effective and recyclable.

Organoiodines-Promoted Construction of Bioactive Heterocycles

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Organoiodine reagents have shown broad synthetic utility in various oxidative transformation and rearrangement reactions for the construction of highly functionalized molecules. In recent years, organoiodine reagents have emerged as versatile and environmentally benign and sustainable reagents alternative to transition-metal catalyzed transformations [1]. The advent of these reagents has provided a range of organic transformations namely oxidations, oxidative cyclizations, carbon-carbon & carbon-heteroatom bond formations and C-H functionalizations under mild reaction conditions [2]. Additionally, iodine-based reagents serve as useful synthetic tool due to their low toxicity, high stability, ready availability, easy handling, and unique reactivity similar to that of a series of heavy metals such as lead(IV), cadmium(IV), mercury(II) and thallium(III)-based agents [3]. Organoiodine reagents have also been widely explored in the total synthesis of various biologically active natural products including quinones, flavanoids, alkaloids and bisindoles. Heterocycles, especially the nitrogen containing natural products have attracted attention of many research groups working in medicinal chemistry due to their diverse biological activities including antimalarial, antiviral, antibacterial, antifungal, antidepressant and antitumor[4]. Inspired by the remarkable advantages of organoiodine reagents and quest to identify novel bioactive heterocycles, we have discovered interesting organoiodine-promoted transformations resulting in the formation of diverse heterocyclic frameworks [5]. Preparation of different nitrogen containing five- and six-membered heterocycles involving organoiodine reagents will be discussed in the conference presentation.

Microwave assisted synthesis of pyridine based analogous as a green chemistry approach: Their biological evaluation

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Abstract:
Microwave assisted organic synthesis (MAOS) approach is a nonconventional technique of organic synthesis, which is more advantageous over conventional synthetic approach. In these conscious days of deteriorating environment, it is welcome addition to the list of green chemical synthetic methods. This method is also energy saving in this era of energy crisis as nobody want conventional tedious methods for driving a chemical reaction. Microwave-assisted heating under controlled conditions has been shown to be an invaluable technology for medicinal chemistry and drug discovery applications since it often dramatically reduces reaction times, typically from days or hours to minutes or even seconds. Many reaction parameters can be evaluated in a few hours to optimize the desired chemistry. Hence, compound libraries can be rapidly synthesized, so that the lead identification and lead optimization in the pharmaceutical research become an easier and efficient. The problem associated with waste disposal of solvents has been overcome by solvent less synthesis under microwave irradiation. Moreover, the biological activity of the compounds depends on structure of molecule and it has been observed that heterocyclic compounds are more biological active as compared to others. Pyridine and its derivatives are the important chemical compounds with tremendous applications in medicinal field. The pyridine is found to have a large number of biological activities those including antiviral, anticancer, antimicrobial, antidiabetic, antitubercular, antidote, antileishmanial, antioxidant, antichagasic, antithrombin, anticoagulant etc along with most of the traditional biological activities. Pyridine is also a very active neutraceutical found in the form of vitamin B3 i.e., Pyridoxine, which attracts attention of synthetic Chemists for the synthesis of newer biological active candidate. Another important aim of this study is to develop and

to apply more efficiently, environmentally benign strategies for future sustainable growth of reaction pathways, as the environmental protection has become a global concern. Under the framework of green chemistry, an efficient procedure for the synthesis of pyridine analogous contributing various heterocyclic moieties such as, triazine, benzothiazepin, pyrazole, etc., via microwave irradiation to offer newer analogous of pyridine with improved potency that compared with standard drugs, is described in this study. The comparative study of non-conventional microwave induced synthetic approach with conventional heating approach has also been done. Spectral characterization of final synthesized compounds was carried out using FTIR, ^{1}H & ^{13}C-NMR and mass analysis. All the synthesized compounds were screened for their different biological potential The implementation of Microwave assisted organic synthesis that has lower environmental impact forms a part of Green Chemistry.

Newer pathways in green chironanotechnology

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Abstract:-Principals of green chemistry increasing the concerns about environmental issues of scientist. The research for newer recyclable heterogenous catalyst to replace conventional toxic and corrosive catalytic process widely attract the attention of chemist.Mesoporous materials confined with chiral organocatalyst have attracted wide attention of researchers due to their unique physiochemical properties and high applicability, especially in the field of catalysis. The porous morphology of mesoporous materials may be considered as a hook onto which organic groups with different functionality may be anchored, allowing for the control of both reactivity and selectivity in organic catalytic processes. Such a molecular building block approach towards heterogeneous asymmetric catalysis will represent a major advance in chirotechnology owing to both its tunability as well as reusability. Confinement in heterogenous materials boosts catalyst performance of chiral catalysis in asymmetric hydrogenation due to nanoscale proximity of reactants.

Asymmetric reactions can be driven more effectively by modified organo catalyst confined inside zeolite mateiral. Confinement of chiral organocatalyst inside the zeolite materials are far more effective catalysts for asymmetric reactions of spiroindole moieties than particles adsorbed on exteriors or conventional support materials with higher ee value ever since reported in literature.

Novel Biosensor: Theory, Observations and Applications

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Sensitization is the primary feature of living beings. All organisms plants or animals posses and represent sensation in one or other way. Biosensors are analytical devices incorporating a biological sensing element. They harness the exquisite sensitivity and specificity of biology in conjunction with physicochemical transducers to deliver complex bioanalytical measurements with simple, easy-to-use formats. Biological activities in different compounds are found with a significant extent and has been reported extensively in various inorganic complexes. If a non living material comes in contact of living being particularly during germination or in embryonic state, there are certain changes which takes place in the non living system / material, this include the encapsulation of sensation. Our group has coined and reported this unique phenomenon termed as Bhojak’s effect and designed new kind of Biosensors based on this phenomenon and materials . In this paper few applications of this effect is being elaborated.

Ultrafast Dynamics of Hydrogen Bond Breaking and Making in the Excited State

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Abstract: Intermolecular hydrogen bonding, a site specific interaction, affects chemical reactivity of the solute in many chemical and biological systems. Hydrogen bond breaking and making dynamics is of utmost importance to understand these properties in condensed phase.Organic molecules with a single hydrogen bond accepting site, namely, Fluoren-9-one and9-Anthracenecarboxaldehyde, have been used as probes for investigation of the dynamics of hydrogen bond in its lowest excited singlet (S_1) state using subpicosecond time-resolved visible pump – IR probe spectroscopic technique.

Photophysical properties and excited state dynamics of molecules are sensitive to intermolecular hydrogen bonding in protic environment. An organic chromophore with a single hydrogen bonding site, such as a carbonyl group, is an ideal probe to monitor hydrogen bond dynamics by directly probing the stretching frequencies of the C=O group in real time following photoexcitation.Fluoren-9-one (FL) has a single hydrogen bond accepting site (C=O group) and forms 1:1 and/ or 1:2 hydrogen bonding complexes with the hydrogen bond donating solvents through association with either or both of the available lone pair of electrons on the oxygen atom of the carbonyl group, respectively.[1] FL molecule has been used as a probe for investigation of the dynamics of hydrogen bond in its lowest excited singlet (S_1) state using subpicosecond time-resolved visible pump – IR probe spectroscopic technique. In hexafluoroisopropanol (HFIP), a strong hydrogen bond donating solvent, formation of FL-alcohol hydrogen bonded complex in the ground electronic (S_0) state is nearly complete with negligible concentration of free FL molecule in solution. Therefore, appearance of the absorption band due to the C=O stretch of free FL molecule immediately after photoexcitation of FL in HFIP solution provides the confirmatory evidence regarding photodissociation of the hydrogen-bonded complex. However, presence of the hydrogen bonded complex of the excited FL molecule and the solvent has also been evident following photoexcitation. Time-resolved IR spectroscopic data reveals two major relaxation processes occurring following photoexcitation of FL in HFIP, namely, vibrational relaxation in both the free and hydrogen bonded forms of the S_1 state of FL molecule and hydrogen bond reorganization process in the hydrogen bonded complex of FL in the S_1 state. The latter process has been shown to follow bimodal exponential dynamics. Similar S_1 state lifetimes of both free and hydrogen bonded FL molecule suggests establishment of a dynamic equilibrium between these two species during its excited state lifetime. Studies in two more weaker hydrogen bond donating solvents, namely, trifluroethanol (TFE) and perdeutarated methanol (CD_3OD), although, reveal similar dynamics, quantitative estimation of hydrogen bond reorganization time has not been possible.

We also used another probe molecule, 9-Anthracenecarboxaldehyde (9ACD), tostudy the effect of solvent polarity and hydrogen bonding interaction on the excited state dynamics using combination of femtosecond transient visible and infrared spectroscopy. Time resolved transient absorption (TA) spectroscopic studies in the visible region revealed that 9ACD undergoes ultrafast intersystem crossing (ISC) process in non-polar cyclohexane with a lifetime of about 20 ps. In aprotic solvents, this deactivation pathway remains invariant, irrespective of polarity of the solvents. Interestingly, in strong hydrogen bonding solvents, like 2, 2, 2-trifuoroethanol (TFE), deactivation through ISC channel becomes insignificant. Steady-state and femtosecond time resolved infrared (TRIR) experiments revealed that strong intermolecular hydrogen bonding interaction lowers the energy of the S_1 state with respect to that of the T_1 state and hence reduces the ISC efficiency in TFE. Important facts revealed in this study are: Firstly, no evidence has been obtained regarding breaking of intermolecular hydrogen bond following photoexciation of the hydrogen-bonded complex. Secondly, Hydrogen bonded complex in the S_1 state is longer lived and highly fluorescent as compared to that of a nonhydrogen bonded S_1 state as observed in aprotic solvents.

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Direct Synthesis of O-Protected Vic-Amino Alcohols

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vic-amino alcohols are well represented in numerous bioactive compounds, natural products and pharmaceuticals as well as being essential building blocks in organic synthesis and drug design. Herein, we report the direct one pot synthesis of O-protected vic-amino alcohols from structurally diverse olefins utilizing O-(2,4-dinitrophenyl)hydroxylamine (DPH) in the presence of a di-rhodium catalyst in acetonitrile. This unique process installs an N-amino and another nucleophile (protected hydroxyl) to simple or substituted olefins in a single step. The substrate scope and mechanism will be discussed.

SPECIAL LECTURES:-

1. LiOtBu Promoted Intramolecular [3+2]-dipolar Cycloaddition Reaction- A Rapid Access to Benzo-pyrano Pyrazoles.

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Abstract: LiOtBu promoted intramolecular [3+2]-dipolar cycloaddition reaction of in-situ generated diazo compounds from N-tosyl hydrazones and tethered alkynes is reported. The transition metal-free method generates benzo-pyrano pyrazoles in good to excellent yields in short reaction time. Most of benzo-pyrano pyrazoles could be isolated without column chromatography.

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2. Microbial Lipase Mediated Green Synthetic Processes

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The lipase from *Pseudomonas aeruginosa* is an exceptionally versatile catalyst of immense industrial importance. Due to their specificity and robustness they find applications in a wide variety of industrial processes/ commodities like detergent formulations, oleo-chemicals, agro-chemicals, pharmaceuticals, textiles, leather, tea, paper & pulp and bioremediation. In this paper few applications of lipase from an indigenously isolated strain of *Pseudomonas aeruginosa* are presented to emphasize the possibility of replacing the conventional **chemical processes** by **eco-friendly enzyme based processes**. The use of these processes at commercial scale will result in establishment of *"Green Technology"* that would conserve the environmental biodiversity.

The *Pseudomonas aeruginosa* strain studied in this investigation is an alkalistable, 1, 3-regiospecific lipase, having broad substrate specificity with activity and stability in wide pH and temperature range and in different organic solvents. These properties qualify this lipase as a robust enzyme. Thus, it was felt worthwhile to investigate this enzyme for the following important industrial applications.

Food Industry

(i) Synthesis of flavour and fragrance precursors
(ii) Synthesis of biosurfactants
(iii) Synthesis of antioxidants

Oleochemical Industry

Synthesis of glycerides
Optimization of synthesis of partial glycerides of lauric acid under solvent free condition

It is important to highlight here that the applications mentioned above could be done *chemically* also, but the wastes generated are *hazardous* for the *flora* and *fauna* of the environment.

3.Mitigation of radiation and heavy metals induced biochemical alterations in mice by herbals

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Several workers have extensively worked out the radiation and metal induced toxicity and have reported the toxic and carcinogenic effects of metals in human and animals. It is well known that these metals play a crucial role in facilitating normal biological functions of cells as well. One of the major mechanisms associated with heavy metal toxicity has been attributed to generation of reactive oxygen and nitrogen species, which develops imbalance between the pro-oxidant elements and the antioxidants (reducing elements) in the body. In this process, a shift to the former is termed as oxidative stress. The oxidative stress mediated toxicity of radiation and heavy metals involves damage primarily to liver (hepatotoxicity), central nervous system (neurotoxicity), DNA (genotoxicity), and kidney (nephrotoxicity) in animals and humans.
The present review illustrates an account of the current knowledge about the effects of heavy metals (mainly lead, mercury, and cadmium) induced oxidative stress as well as the possible remedies of metal(s) toxicity through natural/synthetic antioxidants, which may render their effects by reducing the concentration of toxic metal(s). Herbal radiation protection is an important strategy to protect living being against deleterious effects of radiation and heavy metals. Earlier the synthetic chemical substances, which could minimize the biochemical changes in the living system after exposure to ionizing radiation and heavy metals were looked into. Medicinal plants are the local heritage with global importance. World is enclosed with a rich wealth of medicinal plants. Herbs have always been the principal form of medicine in India.
Several Indian medicinal plants (*Emblica officinalis, Aloe vera, Moringa oleifera, Ocimum sanctum, Rosemarinus officinalis, Tinospora cordifilia* or plant derived compounds have been reported to be effective in countering the harmful effects of radiation and heavy metals in different experimental models of radiation injuries were evaluated for their possible role in radiation countermeasure strategy.
The different biochemical parameters viz. total proteins, glycogen, acid & alkaline phosphatase activities, phospholipids, DNA and RNA were noticed in the form of decrease or increase in the different organs (liver, kidney, jejunum, testes and brain). After combined treatment of radiation and heavy metals the more severe alterations in the biochemical parameters were noticed showing synergistic effects. An early onset of recovery and less severe changes in the herbal drugs treated groups may be an indication of protection provided by the herbal drugs.
Key words: Radiation, Heavy metals, Herbals

4.Synthesis And Characterization Of Copper Nanoparticles Using Ascorbic Acid As Reducing And Capping Agent

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Metallic nanoparticles are of great interest due to their excellent physical and chemical properties such as high surface to volume ratio and high thermal conductivity. Copper nanoparticles have also been considered as an alternative for noble metals in many applications such as heat transfer and microelectronics. Chemical reduction of copper salts by L-ascorbic acid is a new and green approach in which L-ascorbic acid is used as reducing and capping agent in aqueous medium. The effects of reactant concentration and reaction temperature on morphology of dispersed copper nanoparticles were studied. The formation of copper nanoparticles in dispersion was monitored through the analysis of absorbance spectra by UV-Visible Spectrophotometer at different stages during the process of synthesis. The study revealed that L-ascorbic acid plays an important role of protecting the copper nanoparticles to prevent oxidation and agglomeration and they have good stability for application.

PAPERS FOR POSTER PRESENTATION.

POSTER ID- 001_Kunti _ICRCS2017
Effect of oxygen pressure on blue light emitting TiO_2 thin films deposited by PLD

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In this work, the structural, morphological and optical properties of TiO_2 thin films grown on fused quartz substrate at different oxygen partial pressure by pulsed laser deposition were investigated. TiO_2 anatase phase was observed from the X-Ray diffraction (XRD) patterns of deposited films. Surface morphology investigation reveals that grain size of the films increases with oxygen pressure. Energy band gap of the films was found about 3.9 eV. TiO_2 thin films exhibited blue emission under the excitation of 360 nm wavelength. Deconvolution of the photoluminescence (PL) peaks was performed in order to study the defect states present in TiO_2 thin films. The photometric diagram shows that the films exhibited intense blue emission that can be used for blue LED application.

POSTER ID- 002_Kunti _ICRCS2017

Post-annealing effect of on photoluminescence properties of TiO_2-SiO_2 composite thin film prepared by PLD

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TiO_2-SiO_2 composite thin films with rutile structure were grown on quartz substrates by pulse laser deposition (PLD) technique using TiO_2-SiO_2 composite target in vacuum at base pressure 10^{-6} mT and substrate temperature 750 ℃. The films were post-annealed in the different temperature from 750 ℃ to 1150 ℃ in the presence of air. Grazing Incidence X-ray diffraction (GI-XRD) was performed in order to study the crystalline properties. The surface morphology of the films was studied by atomic force microscopy (AFM) and Field Effect Scanning Electron Microscopy (FE-SEM). Crystallite size and particle size were increased with the increase of annealing temperature. Energy band gap of the films was measured using absorption spectra. Intense PL emission in the blue region centered at 440 nm was observed for the as-deposited thin film. Post-annealing causes the quenching of the emission in the visible region at 950℃.

POSTER ID- 003_Raut _ICRCS2017

Gamma Ray Energy Buildup Factors for Nanomaterial using Geometric Progression (GP) Method

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Gamma ray energy-absorption and exposure buildup factors for $Y_3Al_5O_{15}$ nanomaterial were calculated using the geometric progression (G-P) fitting formula up to penetration depths 40 mfp (mean free path) for the energy range 0.015-15.0 MeV. The variation of EABF (energy-absorption buildup factor) and EBF (energy-exposure buildup factor) are studied as a function of penetration depth and photon energy. The calculated EABF and EBF are useful in radiation dosimetry.

POSTER ID- 004_Manisha _ICRCS2017

Effect of Calcination Temperature on Structural, Morphological and Optical Properties of CuO Nanostructures

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Abstract

Cupric oxide (CuO) has been studied as a p-type semiconductor material with narrow band gap. CuO nanoparticles are of great interest due to its potential applications in a wide variety of areas including electronic and optoelectronic devices, such as microelectromechanical systems,field effect transistors , electrochemical cells, gas sensors and , magnetic storage media , field emitters, heterogeneous catalyst, supercapacitors, lithium ion battries and because of its good photoconductivity and photochemical properties CuO nanoparticles can also be used as an excellent material for optoelectronics and solar cells.The physical and chemical properties of CuO nanostructures are strongly dependent on the sizes, shapes, compositions, and structures of the nanocrystals. CuO have received much attention over the past few years because it has a wide range of properties that applications. Moreover, existing technologies are also being modernized with CuO nanostructures.

In the present study, we reported the effects of annealing temperature on structural, morphological and optical properties of CuO nanostructures synthesized by simple Sol-gel method (which is easeful,flexible,cost effective and pollution free method) at different reaction temperature varying from 100-500^{0}C. Here we are utilizing Cupric Chloride as a starting material and Potassiumhydroxoide as a stabilizing agent. The synthesized nanoparticles are characterized for structural properties by XRD and SEM and the optical properties are carried out through UV–visible, Photoluminescence and Raman spectroscopy.The XRD and SEM images are utilized to examine the crystalline quality as well as the morphological studies of CuO nanostructures. Moreover, XRD pattern at different temperature are found to be nearly similar and confirms a monoclinic structure.We have analysed that the properties of samples had great dependence on the temperature.The crystallization increases with increasing temperature.A significant increase in the band gap is observed with increasing the calcination temperature.

Therefore, different dimensions and shapes nanostructured CuO materials have attracted immense interest for diverse applications.

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POSTER ID- 005_Banerjee _ICRCS2017

Mechanism Of Prolonged Storage Dependent Change In Morphological And Optical Properties Of Zinc Oxide Nano Powder

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ZnO plays an important role in many technological aspects of semiconductors. Because of its interesting properties, it has attracted a great deal of attention for a wide range of applications. In this work, the direct

precipitation method was employed for the synthesis of ZnO nanoparticles at different concentration of reactants i.e. zinc acetate and sodium hydroxide for the synthesis of zinc oxide powder with different crystal structure, size, and morphology. The sole aim of these experiment was to investigate the reasons for obtaining different morphologies and optical properties of zinc oxide nanoparticles and the effect of prolonged storage of zinc oxide over a span of 1.5 year in a desiccator on these properties and the complete theoretical explanation of results obtained. The reactant raw materials used in this experiment were zinc acetate dihydrate as a zinc source and the NaOH whose concentration was varied from 0.1 mol to 0.4 mol. Here we present the experimental conditions, including thorough theoretical explanations of the results of the different optical properties such as change in photoluminescence emission spectra from blue to white after prolonged storage in desiccator inside the laboratory. So, we can conclude that with prolonged storage even the highly stable and crystalline zinc oxide nano powder introduces new deep trap levels which are responsible for the change in the optical emission from blue to white. These proves the fact that even without any noticeable change in morphology deep trap levels get introduced by itself with the passage of time and which cannot be controlled anyway.

POSTER ID- 006_ Awasarmol_ICRCS2017

Photon interaction study of organic nonlinear optical materials in the energy range 356 keV to 1330 keV

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In this study, the mass attenuation coefficient (μ_m) and other related radiological parameters of organic nonlinear optical materials such as Crystal Violet and N,N'- Dimethylurea has been calculated and compared with the values obtained from the WinXCOM program in the energy range 356 keV to 1330 keV. It is observed that there is a good agreement between theoretical and experimental values. From the present work, it is observed that the variation of obtained values of all parameters strongly depends on the photon energy; it decreases or increases due to chemical composition and density of the sample. These samples have been studied extensively using transmission method with a view to utilize the material for radiation dosimetry. The mass attenuation coefficients (μ_m), total atomic cross sections ($\sigma_{t,\,a}$), total electronic cross sections ($\sigma_{t,\,el}$), effective atomic numbers (Z_{eff}) and molar extinction coefficients (ε) of two sample materials have been carried out and transmission curves have been plotted. The transmission curve shows the variation of two sample materials decreases with increasing photon energy. The results of this present study can be useful in diagnostic imaging, radiation dosimetry and other technological applications.

POSTER ID- 007_Ranjan _ICRCS2017

Free Standing Graphene Oxide Film for Hydrogen Peroxide Sensing

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A modification of Tour's method is used for preparation of free standing film of Graphene Oxide (GO). Using suitable optimization of parameters in the recipe, graphite residues can be eliminated to a large extent. We used the free standing film of GO for detecting toxic gases whose presence in excess can be fatal to humans. We report here 0the results on hydrogen peroxide sensing.

POSTER ID- 008_Kumar _ICRCS2017

$SrBi_4Ti_4O_{15}$ Aurivillius Phase Thin Films by Pulsed Laser Deposition using Nd:YAG Laser

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Abstract. We have synthesized the pure Aurivillius phase material in bulk by solid state route and in thin films by using pulsed laser deposition (PLD). Powder XRD and grazing incidence XRD (GIXRD) were used for phase purity confirmation. Thicknesses of the films were calculated from the x-ray reflectivity (XRR) curves. We show controlled thickness deposition of these natural superlattice films which can be used for various applications.

Introduction:

The Aurivillius phase materials[1] have a general formula $(X_2O_2)^{2+}$-:$(A_{n-1}B_nO_{3n+1})^{2-}$ in which perovskite like blocks $(A_{n-1}B_nO_{3n+1})^{2-}$ are separated by $(X_2O_2)^{2+}$ motif, where X is generally Bi^{3+}, A is Lanthanides or a group II elements, B is a transition metal (e.g., Ti^{4+}, Nb^{5+}, W^{6+} etc.) and n represents the order of BO_6 octrahedra between $(X_2O_2)^{2+}$ layers. They have attracted considerable attention due to their very interesting properties which has tremendous potential for several promising applications: (i) easy candidate system for band gap engineering[3] due to large number of constituents and layer which is useful for various optoelectronic applications[4], (ii) good superionic conductors[2], (iii) potential candidates as catalysts for water splitting reaction (artificial photosynthesis), (iv) ferroelectric[3] as well as high temperature superconductors and (v) Thermoelectric (TE).

In particular, the structural properties of these materials reveal that they are having a very large unit cell which can be used to enhance phonon scattering to reduce the thermal conductivity. Also appropriate dopants in these materials can lead to high electrical conductivity and Seebeck coefficient making them highly desirable for TE applications. Thin films of these materials have natural superlattice and can be used to study Nernst effect & Peltier effect. In this report, we have successfully synthesized pure $SrBi_4Ti_4O_{15}$ (SBTO) bulk Aurivillius phase materials with n=4 and thin films of same has been prepared by using Pulsed Laser Deposition (PLD) system. These were characterized using x-ray diffraction (XRD) & X-ray reflectivity (XRR) studies.

POSTER ID- 009_ Tripathi_ICRCS2017
Electrical Studies On Nano Composite Gel Polymer Electrolyte For Its Application In EDLCs

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Nano composite (SiO_2) based gel polymer electrolyte (GPE) has been synthesized using standard solution cast technique. Different weight percent of SiO_2 and liquid electrolyte, ethylene carbonate (EC) - propylene carbonate (PC) - $TEABF_4$ was incorporated in polymer, poly (vinylidene fluoride-co-hexafluoro propylene (PVdF-HFP) to obtain mechanically stable gel polymer electrolyte film (GPE) having maximum conductivity of ~10^{-3} S cm^{-1} at room temperature, which is acceptable from device fabrication point of view. Potential window and

ionic transference number were also carried out to examine the potential limit and ionic characteristics of optimized GPE system. Temperature dependence behavior of electrical conductivity curve follows Arrhenius nature in the temperature range of 303 K - 373 K. Pattern of dielectric constant and their losses as a function of frequency and temperature have been studied and is being explained on the basis of electrode interfacial polarization effect. Frequency dependent conductivity spectra obey the Jonscher's power law. Further, optimized composition of GPE has been tested successfully for its application in supercapacitor fabrication with activated charcoal as an electrode material. Maximum specific capacitance of 63.5mF cm^{-2}, equivalent to single electrode specific capacitance of 26.4 F g^{-1} have been observed for the optimized GPE film.

Keywords: Nano composite, Polymer gel electrolyte, Dielectricanalysis,Supercapacitor.

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POSTER ID- 010_Bano _ICRCS2017
Temperature Dependent Analysis of Bulk And Monolayer MoS_2 : An Ab-initio Approach

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The transport properties of semiconductors are key to the performance of many solid-state devices (transistors, data storage, thermoelectric cooling and power generation devices, etc). An understanding of the transport details can lead to material designs with better performances. In recent years simulation tools based on first-principles calculations have been greatly improved, being able to obtain the fundamental ground-state properties of materials accurately. The quasi harmonic thermal properties of bulk and monolayer of MoS_2 has been computed with *ab initio* periodic simulations based of density functional theory (DFT). The temperature dependence of bulk modulus, specific heat, thermal expansion and gruneisen parameter have been calculated in our work within the temperature range of 0K to 900K with projected augmented wave (PAW) method using generalized gradient approximation (GGA). Our results shows that the optimized lattice parameters are in good agreement with the earlier reported works and also for thermoelastic parameter, i.e. isothermal bulk modulus (B) at 0 K indicates that monolayer MoS_2 (48.5 GPa) is more compressible than the bulk structure (159.23 GPa). The thermal expansion of monolayer structure is slightly less than the bulk. Similarly, other parameters like heat capacity and gruneisen parameter shows different nature which is due to the confinement of 3 dimensional structure to 2 dimension (2D) for improving its transport characteristics.

POSTER ID- 011_Kumar _ICRCS2017
Simulation of CZTS Solar Cell for performance improvement.

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Abstract. A Copper-Zinc-Tin-Sulphide (CZTS) based solar cell of Mo/CZTS/CdS/ZnO is simulated using SCAPS. Quantum efficiency and IV curve of the experimental CZTS solar cell with highest efficiency reported in literature is mapped with the simulated output of solar cell. A modification in back contact thus shottky barrier, spike type band alignment at the CZTS-n type

layer junction and higher electron mobility (owing to alkali doping in CZT)S are implement in simulation of CZTS solar cell. An improvement in the solar cell efficiency compared to the standard cell configuration of Mo/CZTS/CdS/ZnO is found. CZTS is plagued with low Voc and low FF which can be increased by optimization as suggested in paper.

POSTER ID- 012_Sonali _ICRCS2017

Synthesis and photoluminescence study in Eu^{3+}:Y_2WO_6 phosphors

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Abstract. Eu^{3+} doped Y_2WO_6 phosphors were synthesized by solid state reaction method. The photoluminescence properties of the Eu^{3+}:Y_2WO_6 phosphors were studied for different concentration of Eu^{3+} ions. The luminescence intensity is found maximum at 0.3 mol% of Eu^{3+} ions. The excitation spectra monitored at ~ 617 nm lies in the 220 – 350 nm region occurs due to charge transfer state (CTS) band of the europium-oxygen interactions, which is caused by an electron transfer from oxygen 2p orbital to an empty 4f shell of europium ions. The phosphors effectively excited by ~ 393 nm near-ultraviolet (NUV) light gives efficient red emission band (~ 617 nm) corresponding to $^5D_0 \rightarrow {}^7F_2$ transition. The concentration dependence photoluminescence study and the mechanisms behind the photoluminescence properties have been explored with the help of suitable energy level diagram. Moreover, the CIE colour coordinate lie in the near white region so the prepared phosphors can be suitably use in making visible downconverter and in making visible light display devices.

POSTER ID- 013_Solanki _ICRCS2017

Structural and Optical Properties of Hydrazine Hydrate Capped Cadmium Sulphide Nanoparticles Synthesized by Chemical Method

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CdS is an important semiconductor material of low cost photovoltaic devices. The nanoparticles of cadmium sulphidewere prepared by a chemical precipitation method. The reaction was carried out in aqueous medium with stirring at 40^0C temperature. The cadmium sulphide nanoparticles were characterized using X-ray powder diffraction (XRD) and UV-visible spectroscopy. The lattice strain, crystallite size and dislocation density were calculated using the Williamson-Hall (W-H) method. The band gap was obtained from the UV-Visible spectra of CdS nanoparticles. The XRD spectra shows that the Cds nanoparticles have hexagonal structure with crystallite size is around 3.5 nm The band gap of CdS nanoparticles is around 2.68 eV.

POSTER ID- 014_Shrotriya _ICRCS2017

Synthesis and Characterization of CuInSSe Nanoparticals via Simple and Low Cost Technique

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In this study, we reports on the preparation and study of the structural, surface morphology and optical properties of copper indium sulphoselenide (CuInSSe) nanoparticles. CuInSSe nanocrystals are prepared by a wet chemical route using low cost solution precursors for low cost solar cells. The nanoparticals are characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM)/EDAX and optical study and the results indicate that the particles crystallize in the chalcopyrite structure, single phase, showing smooth morphology in form of clusters and the optical band gap value is 1.23 eV. The average crystallite size is calculated from X-ray spectral peaks with Scherrer's formula and it is in the range 30 to 40 nm.

POSTER ID- 015_Kulshrestha _ICRCS2017

The Linear, Non-linear and Thermal properties of single crystal of LHMHCl

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The single crystal of amino acid of L-histidine monohydrochloride was grown by slow evaporation technique at room temperature. High optical quality and appropriate size of crystals were grown under optimized growth conditions. The grown crystals were transparent. Crystals are characterized with different characterizations such as Solubility test, UV-Visible, optical band gap (E_g). With the help of optical data to be calculate absorption coefficient (α), extinction coefficient (k), refractive index (n),dielectric constant (ε), optical conductivity (σop). These optical constants are shows favorable conditions for photonics devices. Second harmonic generation (NLO) test show the green light emission which is confirm that crystal have properties for laser application. Thermal stability of grown crystal is confirmed by TG/DTA. Mechanical strength of grown crystal is confirmed by Vickers hardness test.

POSTER ID- 016_Meena _ICRCS2017

Ab – **initio Study of Rare Earth Magnesium alloy: TbMg**

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The structural, electronic and magnetic properties of TbMg were analyzed by using full-potential linearized augmented plane wave method. This intermattlic is stable in structure CsCl (B2 phase) with space group Pm-3m. In electronic properties, we show the electronic band structure and density of states plots. These plots show that this alloy have metallic character because there is no band gap between the valance band and conduction band at Fermi level. The structural properties, i.e. equilibrium lattice constant, bulk modulus and its pressure derivative, energy and volume show good agreement with available data. In this paper, we also present the total magnetic moment along with the magnetic moment on the atomic and interstitial sites of TbMg intermetallic in B2 phase

POSTER ID- 017_Khandy _ICRCS2017

Electronic Structure and Magnetic Properties of Half-metallic Perovskites: $BaPaO_3$ and $BaUO_3$

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Systemic investigation of structural parameters and electronic properties inclusive of band profiles for Actinide based perovskites; $BaPaO_3$ and $BaUO_3$ have been performed. The empirical as well as DFT calculated lattice constants are in agreement with the experimental results. The critical energy values confirm that the $BaPaO_3$ has lesser migration energy than $BaUO_3$. Both, these materials show ferromagnetic and half-metallic nature with a semiconducting, direct band gap in the low spin state with 3.91 eV for $BaUO_3$ and 3.90 eV for $BaPaO_3$.

POSTER ID- 018_Farheen _ICRCS2017

The Optical and structural properties of Graphene nanosheets and Tin oxide nanocyrstals composite

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Abstract. A nanocomposite material consisting of metal oxide and reduced graphene oxide was prepared via simple, economic, and effective chemical reduction method. The synthesis strategy was based on the reduction of GO with Sn^{2+} ion that combines tin oxidation and GO reduction in one step, which provides a simple, low-cost and effective way to prepare graphene nanosheets/SnO_2 nanocrystals composites because no additional chemicals were needed. SEM and TEM images shows the uniform distribution of the SnO_2 nanocrystals on the Graphene nanosheets (GNs) surface and transmission electron microscope shows an average particle size of 2- 4 nm. The mean crystallite size was calculated by Debye Scherrer formula and was found to be about 4.0 nm. Optical analysis was done by using UV-Visible spectroscopy technique and the band gap energy of the GNs/SnO_2 nanocomposite was calculated by Tauc relation and came out to be 3.43eV.

Keywords: **XRD, SEM, TEM, Optical Properties, Fourier Transform Spectra**

PACS: 61.05.cp; 68.37.Hk; 68.37.Lp78.20.Ci; 78.67.Bf, 33.20.Ea

POSTER ID- 019_Chandel _ICRCS2017

Structural, Morphological and Optical Studies of F Doped SnO_2 Thin Films

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Abstract. Highly conducting and transparent FTO (flourine doped tin Oxide) thin films were grown on the glass substrates using a low cost spray pyrolysis technique. The films were characterized for their structural, morphological and optical studies using XRD, SEM and UV-Vis spectroscopy. XRD studies show that the FTO films crystallize in Tetragonal cassiterite structure. Morphological analysis using SEM show that the films are uniformly covered with spherical grains albeit high in surface roughness. The average optical transmission greater than 80% in the visible region along with the appearance of interference fringes in the transmission curves confirms the high quality of the films. Electrical studies show that the films exhibit sheet resistance below 10 $\Omega\ \square^{-1}$.

POSTER ID- 020_ Jariwala_ICRCS2017

Structural and Electrical Properties of Ultrathin Si_XC (X = 4, 5, 6) Nanowires: A First Principles Calculation

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Abstract. We have scrutinized structural and electronic properties of Si_XC (X=4,5,6) nanowires having a variant shape of cross-section. Properties of studied nanowires were drastically changed in compare to bulk Si and C structure. The density of charge (DOS) revealed delocalized metallic bonding for studied NWs. Number of conduction channel is slightly increased with the nanowire become bigger. All the considered nanowires are behaved as a poor metallic or semi metallic rather than semiconductor and insulator in bulk Si and C respectively.

POSTER ID- 021_ Sharma_ICRCS2017

Theoretical Prediction Of The Performance Of Proton Exchange Membrane Fuel Cell With Effects Of The Thickness And Conductivity Of The Membrane

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A mathematical model for analysis of proton exchange membrane (PEM) fuel cell using semi empirical approach is proposed. The membrane used in proton exchange membrane (PEM) fuel cell is of different materials. Membrane properties like proton conductivity, hydrophobicity and gas permeability are time dependent. The proposed model is simulated in the MATLAB environment and studied the effects of thickness and conductivity of membrane on the performance of the PEM fuel cell. The model has been validated with the experimental results trends and comparisons shows there is good agreement between the experimental data trends and the proposed model.

POSTER ID- 022_ Bhargava_ICRCS2017

Structural,Optical and Dielectric properties of Graphene Oxide

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Abstract: The Modified Hummers method has been used to synthesize Graphene oxide nanoparticles. Microstructural analyses were carried out by X-ray diffraction and Fourier transform infrared spectroscopy. Optical properties were studied by UV- visible spectroscopy in the range of 200-700 nm. The energy band gap was calculated with the help of Tauc relation. The frequency dependence of dielectric constant and dielectric loss were studied over a range of the frequency 75Hz to 5MHz at room temperature. The dispersion in dielectric constant can be explained with the help of Maxwell-Wagner model in studied nanoparticles.

Keywords: Graphene oxide, XRD, FTIR, Dielectric Constant.

POSTER ID- 023_Praveen _ICRCS2017

Variation in Band Gap Energy and Electrical Analysis of double Doped Cobalt Ferrite

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Abstract. The Ca and Cr doped cobalt ferrite nanoparticles $(Co_{0.9}Ca_{0.1})$ $(Fe_{0.8}\ Cr_{0.2})_2O_4$ were synthesized by microwave gel combustion method. Microstructural studies were carried out by XRD and SEM.Structural studies suggest that the crystal system remains spinal even with the doping of calcium and chromium.The SEM image shows the spherical morphology of surface of the sample. Optical properties of Ca and Cr doped cobalt ferrite were studied by UV- visible technique in the range of 200-800 nm. The energy band gapwas calculated with the help of Tauc relationship.Ca and Cr doped cobalt ferrite annealed at 650^0C exhibit significant dispersion in complex permeability. The dielectric constant and dielectric loss of cobalt ferrite were studied as a function of frequency and were explained on the basis of Koop's theory based on Maxwell Wagner two layer models and electron hopping.

Keywords: XRD, SEM, Dielectric Constant, Optical Properties
PACS: 61.05.cp;68.37.Hk; 78.20.Ci; 78.67.

POSTER ID- 024_Mahdi _ICRCS2017

Microstructural and Optical Properties of CdS Nanoparticles Synthesized by Sol Gel method

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Abstract Semiconductor nanoparticles of CdS are of great interest for both fundamental research and industrial development due to their unique size-dependent optical and electronic properties and their exciting utilization in the fields of light-emitting diode, electro- chemical cells, laser, hydrogen producing catalyst, biological label. We present a scheme to measure the optical properties of CdS nanoparticles using CTAB as a surfactant with the help of uv –visible absorption and perkin elmer spectrophotometer. The calcined nano powders of pure CdS were characterized for crystal phase identification by x-ray diffraction (XRD) in the 2θrange of 200–800 (rigaku miniflex ii) with cu kαradiations (λ = 1.5418a˚) operated at voltage of 30 kv and current of 15 ma. The peaks were indexed by powder-x software. The XRD pattern analysis showed that CdS composition was found to have hexagonal structure with well crystalline nature. the surface morphology and the composition of the samples were investigated by SEM (JEOL, japan). The image shows the presence of large spherical aggregates of smaller individual nanoparticles of various sizes for pure cds. to check the chemical composition of the material, energy dispersive X-ray (EDX) spectroscopic analysis was also performed which further confirmed the presence of cd and s ions in the matrix. The optical absorption spectra of CdS sample was recorded by uv-vis spectrophotometer in the range of 200 to 800 nm. The optical band gap was calculated using the Tauc relationship

POSTER ID- 025_ Agrawal_ICRCS2017

Electrical and thermal properties of Ca and Ni doped Barium Ferrite

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Abstract. Ca and Ni doped M type Barium ferrite of the composition ($(Ba_{0.9}Ca_{0.1})$ $(Fe_{0.8}Ni_{0.2})_{12}O_{19}$) were prepared by the traditional sol gel auto combustion method using citric acid as a fuel. Microstructural analyses were carried out with the help of XRD and SEM. XRD analysis is the evidence of nanometer regime along with crystalline planes of hexagonal structure. It also confirms the hexagonal structure of barium ferrite even with the doping of Ca and Ni. SEM analysis is the signature of the spherical shape and surface morphology of agglomerated form of nano-powders of doped samples. The thermal properties of samples were carried out with the help of TGA. That shows the variation of weight loss of the prepared sample with the temperature.

Keywords: Ferrites, XRD, SEM, TGA

PACS: 75.50.Gg, 61.05.cp, 68.37.Hk, 81.70.P

POSTER ID- 026_ Sahoo_ICRCS2017
Charge Transfer and Optical Properties of Trifluoromethyl Substituted Benzodithiophene (TFMBDT): A Theoretical Study

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Abstract. We present density functional study of the charge transport and optical properties of trifluoromethyl substituted benzodithiophene (TFMBDT) molecule. We found the hole reorganization energy, reduced by 0.354 eV compared to the electron reorganization energy, thus favoring the hole transport across the molecular barrier. We found the maximum tH and tL at the tilting angle 85°, to be 0.473 eV and 0.472 eV, respectively. Although, both tH and tL are found to equivalent, however, low λh can contribute to the larger hole mobility. In the TD-DFT calculation, the low energy electronic transition (H→L) was found to be accordance with the electronic HOMO-LUMO energy gap of the conjugated organic molecule. The calculated gas phase maximum absorption (λmax) of TFMBDT molecule was observed at 337.31 nm (3.67 eV) for L - (d p) e e and nm (e) for - (d p) e e w i is most asso iated wit H →L transition.

POSTER ID- 027_ Ahmed_ICRCS2017
Natural Convection In Annular Cone: Influence Of Radius Ratio

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Abstract. *The viscous dissipation in the fluid flow refers to the transformation of the kinetic energy to the internal energy due to the viscosity of the fluid. The current work investigates the effect of viscous dissipation and radius ratio on the heat transfer characteristics and fluid flow behavior in an annular cone embedded with the porous medium. It is observed that the viscous dissipation effect leads to the decrease in the heat transfer rate from the external wall of the cone to the inner region of the geometry.*

Keywords: *Porous medium, Annular cone, FEM, Viscous dissipation.*

POSTER ID- 028_Khaleed _ICRCS2017
Heat Transfer In a Conical Porous Medium Due To Inner And Top Surface Heating: Effect Of Cone Angle

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Abstract. *The present study investigates the heat transfer behavior in a conical porous annular cylinder subjected to 2 surfaces heating. The boundary conditions are such that the inner radius and top surface of cone is maintained at hot isothermal temperature T_h and outer surface is cooled to temperature T_c. Effect of varying the cone angle is investigated*

Keywords: *Porous medium, Annular cone, FEM*

POSTER ID- 029_Ahmad _ICRCS2017
Heat Transfer In a Conical Porous Medium Due To Inner And Top Surface Heating: Effect Of Radius Ratio

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Abstract. The present study investigates the effect of radius ratio and Rayleigh number on heat transfer characteristics of an annular cone subjected to two side heating and one side cooling. Finite element method is used to convert the partial differential equations into algebraic equations. The resulting equations are solved with the help of in-house computer code developed for specific purpose of heat transfer in conical porous medium. The results are discussed with respect to the radius ratio and Rayleigh number.

Keywords: *Porous medium, Annular cone, FEM*

POSTER ID- 030_ Athani_ICRCS2017
Application Of Artificial Neural Network For Heat Transfer In Porous Cone
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Abstract. *Heat transfer in porous medium is one of the classical areas of research that has been active for many decades. The heat transfer in porous medium is generally studied by using numerical methods such as finite element method; finite difference method etc, that solves coupled partial differential equations by converting them into simpler forms. The current work utilizes an alternate method known as artificial neural network that mimics the learning characteristics of neurons. The heat transfer in porous medium fixed in a cone is predicted using back propagation neural network. It is found that the Nusselt number increases with increase in radiation parameter. The artificial neural network is able to predict this behavior quite accurately.*
Keywords: Porous medium, Cone, ANN

POSTER ID- 031_Athani _ICRCS2017
Heat Transfer Prediction In a Square Porous Medium Using Artificial Neural Network
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Abstract. Heat transfer in porous media has been investigated extensively because of its applications in various important fields. Neural network approach is applied to analyze steady two dimensional free convection flows through a porous medium fixed in a square cavity. The backpropagation neural network is trained and used to predict the velocity profiles. The results are compared with available information in the literature. It is found that the heat transfer increases with increase in Rayleigh number. It is further found that the local Nusselt number decreases along the height of cavity. The neural network is found to predict the heat transfer behavior accurately for given parameters.
Keywords: Porous medium**,** square cavity, ANN

POSTER ID- 032_Ahmed _ICRCS2017
Thermal Non-Equilibrium In Porous Medium Adjacent To Vertical Plate: ANN Approach
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Abstract. Thermal non-equilibrium in a porous medium is a condition that refers to temperature discrepancy in solid matrix and the fluid in porous medium. This type of flow is complex flow requiring complex set of partial differential equations that govern the flow behavior. The current work is undertaken to predict the thermal non-equilibrium behavior of porous medium adjacent to vertical plate using artificial neural network. A set of neurons in 3 layers are trained to predict the heat transfer characteristics. It is found that the thermal non-equilibrium heat transfer behavior in terms of Nusselt number of fluid as well as solid phase can be predicted accurately by using well-trained neural network.
Keywords: Porous medium**,** Cone, ANN

POSTER ID- 033_Yadav _ICRCS2017
Fabrication and Characterization of Conducting Polymer based Ammonia Microsensor

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Abstract: Conducting polymers are promising materials for MEMS sensors because of their room temperature operation, flexibility of design, low density, low power consumption, etc. This research paper presents the fabrication and characterization of Chloride doped polyaniline (PANI) conducting polymer coated IDEs based microsensor for ammonia gas sensing. The microsensor device is developed by fabricating the gold interdigitated electrodes (IDEs) structure and depositing a thin film of 100 micron of synthesized Chloride doped PANI conducting polymer on fabricated IDEs structure. The window size of ID Electrodes is 2 mm X 1 mm and gap between two electrodes is 7.5 micron. The ammonia gas sensing is done in open environment at room temperature. The fabricated sensor has a good sensitivity of 9.8 and response time of 26 seconds with reversible behavior.

Keywords: Ammonia Gas Sensor; Conducting Polymers, Polyaniline Coated IDEs, Microsensor

POSTER ID- 034_ Suri_ICRCS2017
Improving the Mechanical Properties of Al-Cu-Mg alloy processed by Severe Plastic Deformation

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Severe Plastic Deformation (SPD) is one of the promising methods for obtaining bulk nanostructured materials (BNM). Friction Stir Processing (FSP) is one such method for refining and modifying the microstructure, thereby influencing the mechanical properties of the materials. In this investigation, the effect of friction stir processing on mechanical properties of Al-Cu-Mg

alloy is studied. The threaded pin tool is used for performing FSP on Al alloy plates having 6 mm thickness. The tool feed rate is maintained constant with different rotational speeds of 1200 and 1800 rpm. The mechanical behavior was studied by determining microhardnes and tensile tests for FSP specimens. The maximum hardeness is observed in the nugget zone which exhibits an increase of 55 % of unprocessed specimen value at rotational speed of 1200 rpm. The ultimate tensile strength also exhibits and increase of 25 % for specimen processed at 1800 rpm. The study also outlines the effect of variation of rotational speeds on fracture morphologies indicating the dimple size and distribution on fractured surface. This study will help in evaluating the variations in mechanical properties of Al-Cu-Mg alloy which can be used in aerospace and aircraft applications.

Keywords: Bulk Nanostructured Materials, Friction Stir Processing, Hardness, Tensile Testing, SPD

POSTER ID- 035_ Azeem_ICRCS2017

Double Diffusive Conjugate Heat Transfer: Solid at Center of Cavity

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Abstract: Conjugate heat transfer in porous medium is an important study involved in many practical applications. The current study is aimed to investigate the double diffusive flow in a square porous cavity subjected to left vertical surface heating and right vertical surface cooling respectively along with left and right surfaces maintained at high and low concentration. The three governing equations are converted into algebraic form of equations by applying finite element method and solved in iterative manner. The study is focused to investigate the effect of presence of solid inside the cavity with respect to varying conductivity ratio. It is found that the local Nusselt number and Sherwood number decreases along the height of cavity.

Keywords: Porous medium, conjugate heat transfer, FEM

POSTER ID- 036_Vyas _ICRCS2017

Double Diffusive Conjugate Heat Transfer: Solid Towards Right Wall

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Abstract: The present work is undertaken to investigate the effect of solid wall being placed towards the right vertical wall of a square cavity filled with porous medium. The presence of a solid wall in the porous medium turns the situation into a conjugate heat transfer problem. The boundary conditions are such that the left vertical surface is maintained at highest temperatureand concentration whereas right vertical surface at lowest temperature and concentration in the medium. The top and bottom surfaces are adiabatic. The additional conduction equation along with the regular momentum and energy equations of porous medium are solved in a iterative manner with the help of finite element method. It seen that the local Nusselt and Sherwood numbers at hot surface have different significantly lesser thermal and concentration gradient s compared to the case when solid is placed at center of cavity.

Keywords: Porous medium, conjugate heat transfer, FEM

POSTER ID- 037_Azeem _ICRCS2017

Double Diffusive Conjugate Heat Transfer: Solid Cold Wall

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Abstract: The placement of a small solid wall at cold surface of square porous cavity affects the heat transfer behaviour of porous region due to restriction of fluid motion in the region occupied by solid wall. An investigation of heat transfer is carried out to understand the fluid flow and heat transfer behavior in porous cavity by solving the governing partial differential equations. Galerkin's approach is used to convert the partial differential equations into algebraic form of equations by applying finite element method. The maximum value of local Nusselt number increases for solid at the right surface as compared the case of solid at center of cavity.

Keywords: Porous medium, conjugate heat transfer, FEM

POSTER ID- 038_Ganwani _ICRCS2017

The oxidation state of iron and manganese in polymetallic nodules from the Central Indian Ocean Basin

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The study of oxidation states of iron (Fe) and manganese (Mn) in polymetallic nodules were carried out by means of ^{57}Fe Mössbauer and X-ray photoelectron spectroscopic techniques. The polymetallic nodules were collected from different locations of the Central Indian Ocean Basin (CIOB). Spectroscopic analyses allowed the differentiation of these nodules from their origins: "hydrogenous" or "hydrothermal". The valence state of iron (Fe) and manganese (Mn) were obtained from XPS studies. Despite of variation in chemical composition and location, the Mössbauer spectra and parameters are almost identical. The isomer shift (IS) value is centered about 0.3 mms^{-1} and quadrupole splitting (QS) value is centered about 0.5 mms^{-1}, which is characteristic of paramagnetic high spin Fe^{3+} state. The binding energies of Mn $2p_{3/2}$ (ranging from 641.5 to 642.4 ev), Fe $2p_{3/2}$ (ranging from 711.0 to 711.8 ev) and O 1s (ranging from 530.2 to 530.9 ev) from XPS reveal that most of manganese is in Mn^{4+} and iron is in Fe^{3+} state. The Mössbauer and XPS results are corroborating to each other. Further the present study also indicate that these polymetallic nodules have been formed by the hydrogenetic process where metals were supplied from the water column.

Keywords: "Mössbauer spectroscopy, X-ray photoelectron spectroscopy, Polymetallic nodules, Central Indian Ocean"

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POSTER ID- 039_Ragvendra _ICRCS2017

Fabrication of amine functionalized halloysite nanotubes immobilized into Polyetherimide membrane for the efficient removal of hazardous dyes from wastewater and its mechanism

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Abstract
Naturally occurring, low cost and eco-friendly halloysite nanotubes were chemically modified and uniformly immobilised into the polyetherimide membrane matrix with the aim of enhancing the properties and possible cationic dye rejection efficacy. The properties of fabricated nanocomposite membranes were examined in terms of porosity, hydrophilicity, surface energy, zeta potential and permeability. The permeation experiments revealed the enhanced water flux up to 195 L/m^{2}h with 4 wt % additive dosage. The dye rejection efficacy of the prepared membranes was determined by using rhodamine B (Rh.B) and methylene blue (MB). The dye rejection studies were carried out in terms of pH, initial dye concentration and contact time. The membrane with 4 wt % additive dosage showed rejection of 97 % at pH 8 and 94 % at pH 7 for MB and Rh.B dyes respectively. Langmuir adsorption isotherm is the best model to explain the interaction between dye molecules and membrane surface. This approach showed modified membrane has good cationic dye rejection efficacy and can be efficiently employed to remove the dyes from aqueous streams.

Keywords: Nanocomposite membrane, permeation, cationic dyes, adsorption isotherm
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POSTER ID- 040_Upadhyay _ICRCS2017
Application of Nano robots in medicines

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Abstract:

" Necessity is the mother of invention"

Competition grows every day. Today man is forced to compete against machines. This develops stress and human body is subjected to various levels of trauma. The heart attacks become so common and the affected rate increases till date. Main reasons for this would be improper diet, tension and excess of cholesterol, which blocks the arteries and not allowing the blood to pass through them hence causing heart attack. This usually occurs when a blood clot forms inside a coronary artery at the site of an atherosclerotic plaque (blood clots on the roughened plaque). It is difficult to estimate exactly how common heart attacks are because as many as 200,000 to 300,000 people in the United States die each year before medical help is sought. It is estimated that approximately 1 million patients visit the hospital each year with a heart attack. About 1 out of every 5 deaths are due to a heart attack. Present day treatment includes surgeries which are considered outdated when compared to today's technology.

POSTER ID- 041_Shetty _ICRCS2017
Magnetoelectrodeposited Ni-Mo alloy as cathode material for better hydrogen evolution reaction

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Electrocatalytic activity of Ni-Mo alloy coatings for hydrogen evolution reaction (HER) was enhanced by taking advent of magnetic field (B) effect on process of electrodeposition. A significant change in the electrocatalytic activity of Ni-Mo alloy (in 1.0 M KOH) was found due to magnetoelectrodeposition approach, demonstrated by cyclic voltammetry (CV) and chronopotentiometry (CP) study. Experimental results showed that Ni-Mo alloy deposited at current density (c.d.) = 1.0 A dm^{-2} and B = 0.4 T is the most effective electrocatalyst for HER (with highest cathodic peak c.d. of -0.274 A cm^{-2}, least onset potential of -1.24 V and highest volume of H_2 liberated, 14.0 mL) than those coatings developed without the effect of B, using the same electrolyte. Potentiodynamic polarization study showed that magnetoelectrodeposited Ni-Mo alloy under optimal condition is more corrosion resistant than its conventional alloy in the same alkaline medium. The improved electrocatalytic activity of magnetoelectrodeposited Ni-Mo alloy coatings is attributed to the structural and morphological changes of the deposit, evidenced by XRD and SEM analyses

POSTER ID- 042_Yahya _ICRCS2017
Pool Boiling Heat Transfer and CHF Enhancement of TiO_2/Water Nanofluid

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The pool boiling Characteristics of TiO_2 nanoparticle dispersion in water was studied. These kinds of dispersions termed as nanofluids have good thermal properties and consequently affect the critical heat flux. It was found that significant enhancement in critical heat flux (CHF) (nearly 70%) can be achieved at very low volume fraction of nanoparticles. This drastic change in CHF can be attributed to development of porous layer of nanoparticles on the test wire during nucleate boiling. Formed porous layer for the case TiO_2 greatly improved the surface wettability as compared with the pure water case. According to the CHF theories there is one to one linkage between CHF enhancement and surface wettability changes. We presented the results of CHF for different concentration of TiO_2 and plausible underlying mechanism responsible for critical heat flux enhancement.

POSTER ID- 043_Negi _ICRCS2017
Leguminous plant formulations as ovipositional deterrents against pulse beetle *Callosobruchus chinensis* Linn. (Coleoptera: Bruchidae)

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ABSTRACT
Production of food grain has been the endeavor of human race since the beginning of human civilization being a necessity for survival. Cereals and pulses constitute the major food bulk. Pulses constitute the major source of protein in most of the developing countries including India. The storage of pulses is more difficult than cereals as stored grain pests pose a major threat to them. The stored grain pests are difficult to manage with the chemical insecticides because of the health hazards associated with their use. Thus in recent years, an impetus has been on developing and evaluating botanical insecticides in view of their relative safety to the environment. Botanical insecticides are broad spectrum in pest control and many are safe to apply, unique in action, and can be easily processed and used. A large number of plant extracts have been screened for their activities against insects and have been found to possess insecticidal, repellent or anti-feedent properties. Plants contain a large number of secondary metabolites and those categorized under terpenoids, alkaloids, glycosides, phenols, tannins etc. play a major role in plant defense and cause behavioural and physiological effects on insects. Over the past 50 years, more than 2000 plant species belonging to different families and genera have been reported to contain toxic principles. Leguminosae is a wide and chemically rich family. The major alkaloids present were discovered to be rotenoids, which were one of the first insecticides.
Therefore, during the present study the effect of plants *Prosopis juliflora* and *P. cineraria* belonging to family Leguminosae (now Fabaceae) were selected to screen for their efficacy against the pulse beetle *Callosobruchus chinensis* Linn. (Coleoptera: Bruchidae) by employing certain formulations and recording egg laying by the pest insect. The study was carried out in the Laboratory of Entomology, P.G. Departmant of Zoology, Govt. Dungar College, Bikaner, Rajasthan, India. The insects were reared on grains of *Vigna radiata* maintained at 28±20C temperature and 70% relative

humidity. Different formulations using various plant parts (bark, leaf and fruit) were employed in the form of aqueous suspension, aqueous extract and ether extract. The treatments were made using different dose concentrations of 1%, 2.5%, 5% and 10%. Normal and control (only solvents) sets were also kept for comparisons. The egg laying or fecundity was calculated by counting the total number of eggs laid after three days of introduction of the adult pairs into the treated sets and expressed an No./pair. Ten replicas of each experimental set were taken.
The average number of eggs laid by a single pair of *Callosobruchus chinesis* in normal was 42.33 and in control was 41.22 (DW) and 40.33 (Ether) respectively. A significant decrease in egg laying was noted in different experimental sets. Minimum egg laying by the pest was documented to be 4.66/pair in sets treated with 10% aqueous suspension of bark of *P. cineraria*, followed by 6/pair in experimental sets treated with 10% aq. suspension of *P. juliflora* formulation.
Overall, it could be suggested that the two plants studied have a potential to reduce egg laying by pulse beetle acting as ovipositional deterrents and could prove to be a good alternate especially for the management of stored grain pest *C. chinensis*.

POSTER ID- 044_Vinod _ICRCS2017
***Balanites aegyptiaca* – A Multipurpose Tree Species of Rajasthan Desert**
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Balanites aegyptiaca (Linn.) Delile commonly known as hingoto, hingotio, hingorni and thorn tree is a drought resistant, spiny shrub or small tree belonging to family Balanitaceae. It is commonly observed in open sandy plain and may also observed along the boundary of crop fields as hedge plant in some areas of Rajasthan desert. Leaves and fleshy pulp of this plant is often used as famine food as they are good source of protein. Stem, root bark, fruit pulp and leaves of this plant are used in Ayurvedic and other folk medicines for treatment of various diseases. Local people and primitive tribes use parts of this plant in the treatment and prevention of diseases. The medicinal importance of this taxa is due to the presence of secondary metabolites, viz saponin, sapogenin, alkaloid and flavonoids. Besides its medicinal value it has great potential to become a source of biodiesel. The Ecological, Physiological and Biochemical study of this plant is essential for better understanding the fundamental process and for forecasting the future need and research requirement.

POSTER ID- 045_Chakrawati _ICRCS2017
CHEMOPREVENTIVE APPROACH OF MORINGA OLIFERA AGAINST RADIATION AND MERCURY INDUCED CHANGES IN KIDNEY OF MICE

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ABSTRACT
M. oleifera is used in practice in the treatment of various diseases and is available without a medical prescription, often in the form of an herbal infusion for everyday use.The aim of the present study was to evaluate the nutritional values and radioprotective efficacy of *M. oleifera* . All samples of *M. oleifera* exhibited moisture levels varying from 3.06 to 3.34 per cent, lipids from 10.21 to 10.31per

cent, fiber from 7.29 to 9.46per cent, ashes from 10.71 to 11.18per cent, crude protein from 10.74 to 11.48per cent, and carbohydrates from 54.61 to 57.61per cent. *Moringa* is a rich source of calcium: kidneys have function to keep balance of electrolyte and once kidneys fail to work properly, phosphorus level in the blood increases easily. High phosphorus gives rise to low calcium level in the blood which can cause various bone problems like bone pain and bone fracture and so on. Thus the antioxidant activity of *Moringa* may protect the kidney from radiation and heavy metals induced damages.

Due to the environmental contamination, heavy metals, such as mercuric chloride exert severe toxic effects on various tissues of mice. It is now evident that toxic substance like mercuric chloride is a cumulative poison and is considered as a direct acting toxicant. Radiation has tremendous therapeutic benefits for humans: It is used as radiotherapy for different malignant diseases. However, it is also associated with the risk of serious adverse effects. The deleterious effects of ionizing radiation are associated with alterations in oxidizing systems. The present study has been undertaken to assess the radiation and mercury induced oxidative damage to kidney of mice and their protection by antioxidants such as *Moringa* (flavones), using Swiss albino mice as an experimental model.

For this purpose, male mice were divided into seven groups on the basis of individual or combined treatment with or without pre treatment of *Moringa*. Different biochemical estimation viz., Total proteins, Glycogen, Cholesterol, Acid and Alkaline Phosphatase activity, DNA and RNA were observed in the form of increase or decrease. The changes were more severe after combined treatment showing synergistic effects. It was noticed that alterations in the biochemical parameters were less severe in drug treated groups. It was concluded that *Moringa* is potent enough to check radiation and mercury induced changes in the kidney of mice.

Key words: Radiation, Mercury, Kidney and *Moringa*

POSTER ID- 046_Agarwal _ICRCS2017

Moringa oleifera inhibits radiation and mercury induced haematological alterations in mice

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Radiation exposure causes adverse effects on body by causing formation of free radicals which leads to oxidative damage in blood cells. Mercury, a heavy metal, also inhibits the activity of free radical quenching enzymes catalase, superoxide mutase and glutathione peroxidase. Mercury is widely used in industrial, medical, agricultural and other fields. *Moringa oliefera* is referred as miracle tree in tropics and sub tropics. The leaves, seeds and flowers have shown to have potent antioxidant activity. In the present study adult male Swiss albino mice were divided into seven groups. Group I served as normal. Group II to IV served as control groups, received gamma radiation (5.0 Gy) and mercuric chloride (0.5 ppm) individually as well as in combination. The experimental Groups (V to VII) were given *Moringa* seven days prior to irradiation and and/or mercuric chloride treatment. Animals of all the groups were autopsied at post treatment interval of 1, 2,4,7,14,28 days. Blood was collected for various haematological parameters viz., RBCs., WBCs, Hb, PCV, MCV, MCH and MCHC. These were noted in the form of increase or decrease. The combined treatment of radiation and mercuric chloride showed synergistic effect. *Moringa* treated experimental groups showed early onset of recovery showing protection provided by the drug.

The aim of this presentation is to give an overview of the experiments and obtained results and discuss them from the perspective of radiation protection provided by the *Moringa*.

Key words: Radiation, Mercury, *Moringa* and Blood

POSTER ID- 047_Purohit _ICRCS2017

Mitigation of radiation and heavy metals induced biochemical alterations in mice by herbals

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Several workers have extensively worked out the radiation and metal induced toxicity and have reported the toxic and carcinogenic effects of metals in human and animals. It is well known that these metals play a crucial role in facilitating normal biological functions of cells as well. One of the major mechanisms associated with heavy metal toxicity has been attributed to generation of reactive oxygen and nitrogen species, which develops imbalance between the pro-oxidant elements and the antioxidants (reducing elements) in the body. In this process, a shift to the former is termed as oxidative stress. The oxidative stress mediated toxicity of radiation and heavy metals involves damage primarily to liver (hepatotoxicity), central nervous system (neurotoxicity), DNA (genotoxicity), and kidney (nephrotoxicity) in animals and humans.

The present review illustrates an account of the current knowledge about the effects of heavy metals (mainly lead, mercury, and cadmium) induced oxidative stress as well as the possible remedies of metal(s) toxicity through natural/synthetic antioxidants, which may render their effects by reducing the concentration of toxic metal(s).

Herbal radiation protection is an important strategy to protect living being against deleterious effects of radiation and heavy metals. Earlier the synthetic chemical substances, which could minimize the biochemical changes in the living system after exposure to ionizing radiation and heavy metals were looked into. Medicinal plants are the local heritage with global importance. World is enclosed with a rich wealth of medicinal plants. Herbs have always been the principal form of medicine in India. Several Indian medicinal plants (*Emblica officinalis, Aloe vera, Moringa oleifera, Ocimum sanctum, Rosemarinus officinalis, Tinospora cordifilia* or plant derived compounds have been reported to be effective in countering the harmful effects of radiation and heavy metals in different experimental models of radiation injuries were evaluated for their possible role in radiation countermeasure strategy.

The different biochemical parameters viz. total proteins, glycogen, acid & alkaline phosphatase activities, phospholipids, DNA and RNA were noticed in the form of decrease or increase in the different organs (liver, kidney, jejunum, testes and brain). After combined treatment of radiation and heavy metals the more severe alterations in the biochemical parameters were noticed showing synergistic effects. An early onset of recovery and less severe changes in the herbal drugs treated groups may be an indication of protection provided by the herbal drugs.

Key words: Radiation, Heavy metals, Herbals

POSTER ID- 048_Sahoo _ICRCS2017

Renewable Energy Conservation and its Management:

A Case Study from West Bengal

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Abstract

Energy is one of the main inputs for rural development and economic development of poor community. It is one of the essential requirements of the quality of life of the people. In the present rural scenario, one of the important questions is what energy source can be employed to satisfy rural requirement. To answer, a study is commissioned in a village in Birbhum district of West Bengal to study the importance and significance of non-conventional sources of energy in economic development of the poor community. Bio gas plant it requires uniform temperature around 35 degrees Celsius throughout the year. In tropical country like ours uniform heat around 35 degrees Celsius is not available all the year round. In winter particularly from December to February temperature falls shortly resulting in loss of gas production. Birbhum district in West Bengal was selected for study because it is more or less closer to the temperature ideally required for Biogas. Quantum of energy needs, pattern of energy consumption and measures to meet the energy requirement etc are studied and elaborated in full length paper. Study also shows that pattern and quantum of energy consumption among community people are controlled by their caste segregations and economic standings. A few suggestions like better Scientific and Technical Trainings of people in rural areas and research and development to reduce the installation costs has been given as policy measures.

Keywords: Cow Manure, Community participation, Energy Consumption & Sustainability.

POSTER ID- 049_Himanshu_ICRCS2017

A Review Of Solar P-V Systems And Its Use For Mitigation Of CO_2 Level And Fly-ashes Generated By Thermal Power Plants In India.

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Abstract: Today global environmental concerns and the accelerating demand for energy, together with steady progress in renewable energy technologies are opening up new opportunities for utilization of renewable energy resources. Renewable energy is considered as a clean source of energy and judicious use of these resources will certainly minimize environmental impacts, produce minimum secondary wastes unlike produced by “Bio-mass, Fuel and Coal” and hence reliable for

future economic and social societal needs. Renewable energy technologies provide an excellent opportunity for mitigation of greenhouse gas emission & reducing global warming through substituting conventional sources of energy. Solar energy is most abundant, inexhaustible and cleanest of all renewable energy resources till now. The power from the sun intercepted by India's land is 5,000 trillion kilowatt-hours (kwh) per year, which is greater than the possible energy output of all fossil fuel energy resources. Solar PV system is one of the finest ways to utilize the solar power. This briefing paper explores the potential for existing and emerging solar photovoltaic (PV) system to deliver rapid transformation of our energy systems to limit scale of future environmental risks by minimization of evolution of CO_2 and other fly-ashes by replacing the fossil fuels from solar PV systems. Along with it, this paper also explains the Grid-Connection and distribution of electricity from solar PV systems. Thus, the contribution of solar power to energy supply and hence for emissions reduction will be increased by continuing technological innovation and new applications.

POSTER ID- 050_Meena _ICRCS2017

Synthesis And Characterization Of {3-[1-(3-chlorobenzo[b]thiophene-2-carbonyl)-1*H*-indole-3-yl]-4-chlorophenyl)-4,5-dihydro-1*H*-pyrazol-3-yl]phenyl}-quinazoline-2,4-dione

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Abstract

Heterocyclic compounds are associated with human being as drugs. Several drugs like penicillin, ciprofloxacin, INH, AZT, never pine etc containing nitrogen and perhaps this hetero atom is responsible for the diverse biological activity of the molecule. Medicinal chemistry is facing a great challenge of bacterial resistance strains and therefore is ongoing afforest to synthesis a potential bioactive molecules. in continuation to this we report here the synthesis of {3-[1-(3-chlorobenzo[b]thiophene-2-carbonyl)-1*H*-indole-3-yl]-4-chlorophenyl)-4,5-dihydro-1*H*-pyrazol-3-yl]phenyl}-quinazoline-2,4-dione derivatives. Isatoic anhydride were treated with p-aminoacetophenone in ethanol give 3-(4-acetylphenyl) quinazoline-2,4-dione which on condensed with 4-chlorobenzaldehyde afforded 3-{4-[3-(4-chlorophenyl)prop-2-enoyl]phenyl}quinazoline-2,4-dione. The active hydrogen of 3-{4-[3-(4-chlorophenyl)prop-2-enoyl]phenyl}quinazoline-2,4-dione were replace with 6-Substituted 3-chloro-1-benzothiophene-2-carbonyl chloride furnished {3-[1-(3-chlorobenzo[b]thiophene-2-carbonyl)-1*H*-indole-3-yl]-4-chlorophenyl)prop-2-enoyl]phenyl}-quinazoline-2,4-dione. Ring closing reaction of {3-[1-(3-chlorobenzo[b]thiophene-2-carbonyl)-1*H*-indole-3-yl]-4-chlorophenyl)prop-2-enoyl]phenyl}-quinazoline-2,4-dione with phenylhydrazine in presence of catalytic amount of pyridine give final product Synthesis of {3-[1-(3-chlorobenzo[b]thiophene-2-carbonyl)-1*H*-indole-3-yl]-4-chlorophenyl)-4,5-dihydro-1H-pyrazol-3-yl]phenyl}-quinazoline-2,4-dione. The structure of the synthesised compounds has been determined by their spectral analysis.

POSTER ID- 051_Yadav _ICRCS2017

SOLAR ENERGY CONVERSION AND STORAGE BY USING ROSE EXTRACT AS NATURAL DYE AND NITRILOTRIACETIC ACID AS REDUCTANT IN PHOTOGALVANIC CELL

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Abstract:
Photogalvanic effect was studied in Photogalvanic cell containing Rose Extract was used as Natural Dye (Photosensitizer), Nitrilotriacetic acid (NTA) as Reductant. The observed value of photopotential and photocurrent generated by this cell were 872 mV and 176 μA, respectively. The observed power at power point was 82.18 μW and the conversion efficiency was 0.7901 %. The fill factor 0.4678 was experimentally determined at the power point of the cell. The photogalvanic cell can be used in dark for 42 min., showing the storage capacity of the cell against charging time was 200 min. The effect of different parameters on electrical output of the cell was observed and a mechanism has also been proposed for the generation of photocurrent in photogalvanic cell.

Keywords- Rose Extract, Nitrilotriacetic acid (NTA), Conversion efficiency, Storage capacity.

POSTER ID- 052_Susheela _ICRCS2017
The Effect of the Molecular Dimensions of the Guest Complexes Encapsulated inside the Host Zeolite-Y

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ABSTRACT: Zeolites, the well known microporous and crystalline aluminosilicate materials with specific architecture are very attractive materials for encapsulation of transition metal complexes within their voids. The encapsulation process makes these hybrid host-guest systems as efficient catalysts with size and shape selectivity[1-3]. These 'hybrid' systems are popularly known as 'ship-in-a-bottle' complexes[4]. Square planar Cu(II)–Schiff base complexes when encapsulated inside the supercage of zeolite Y, have shown the modified structural and functional properties. Complexes in both their free and encapsulated states have been characterised with the help of different characterization tools like IR, UV-Vis spectroscopy, AAS, SEM –EDX and X-ray diffraction patterns. Catalytic activities of the encapsulated complexes and their 'neat' analogues have been investigated for the oxidation of styrene using H_2O_2 as an oxidant by GC. The reactivity of neat complexes is mainly governed by electronic factor of substituent's group whereas the molecular dimension is found to be an important factor for the justification of improved reactivity of encapsulated copper complexes.

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POSTER ID- 053_ Jatolia_ICRCS2017
Derivative micellar spectral analysis and biological evolution of Pr (III)-quinoline systems

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Abstract:
Optical spectral investigations on micellar Pr(III)-quinoline systems have been carried out and the second derivative spectra of six systems reported first time. The $4f$-$4f$ transition spectra yield sharp bands which were analyzed individually by Gaussian curve analysis. Various energies and intensities of all the transitions were calculated using Judd-Ofelt relation and are perfectly matches with observed value. Low rms deviation confirms the formation of complex. Lande spin orbit coupling (ξ4f), nephelauxetic ratio (β), bonding parameter ($b^{1/2}$), percent covalency (δ), have been computed on computer using partial multiple regression analysis. The Judd-Ofelt intensity (T_2, T_4, T_6) parameters also have been evaluated by a least-squares fit method. From the magnitude of the bonding parameter (δ) which suggests covalency in complex. By applying the Judd-Ofelt theory a good correlation has been established between the experimental and calculated data.

The radiative lifetimes of electronic excited states $^3P_1$, $^3P_{0\ and}$ $^1D_2$ of Pr^{+3} in the six systems have been estimated theoretically. Biological evolutions of these six systems on three microorganisms have also been reported first time. A trend for antibacterial studies have been observed

Keyword: 8-Hydroxy quinoline, Pr (III) ion and Judd Ofelt parameters.

POSTER ID- 054_Moi _ICRCS2017
In vitro Pt(II)-sulfur adduct formation of cytotoxic Pt(II) complex with bio-relevant molecules in aqueous medium: DNA binding drug, reservoir property and a theoretical approach

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Synthesis and cytotoxic property of Pt(II)-sulfur adductss are significant in biological aspect. In order to investigate their relevance, two sulfur chelated model complexes were considered for detailed study. In-vitro drug reservoir property of the complex $[Pt(MAMP)(H_2O)_2]X_2$ **2** (where, MAMP = 2-[(N-methylamino)methyl]pyridine and X= NO_3^- or ClO_4^-) in model reactions with sulfur containing bio-molecules DL-methionine (DL-meth) and DL-penicillamine (DL-pen) were studied to explore the 'drug reservoir' mechanism. The complex [Pt(MAMP)(DL-meth)] **3** and [Pt(MAMP)(DL-pen)] **4** were synthesized from complex **2**, which was obtained from the hydrolysis of complex $[Pt(MAMP)Cl_2]$ **1** and characterized by spectroscopic methods. Interaction mechanism

between complex **2** with DL-meth and DL-pen have been established by kinetic study. Two step consecutive reaction rate constants (k_1 and k_2) and corresponding activation parameters ($\Delta H^{\ddagger}$ and $\Delta S^{\ddagger}$) for both the steps were calculated and an associative mechanism was proposed. Theoretical investigations like structural optimization, HOMO-LUMO energy calculations, NBO analysis were performed to get an insight into their electronic structure. The coordination mode of DL-meth and DL-pen via (S, O) were established by spectroscopic methods and confirmed by NBO analysis. DNA binding property of the complexes **2**-**4** were investigated by UV-Vis spectra, competitive binding experiment, gel electrophoresis and their corresponding binding constants (k_b and k_{sv}) were calculated. The computational molecular docking study was carried out for the complexes with B-DNA to confirm their DNA binding mode. Cytotoxic property of the proposed complexes were investigated on HeLa and HepG2 cell lines. Their corresponding IC_{50} values were calculated and compared with the well known anticancer drug *cis*platin.

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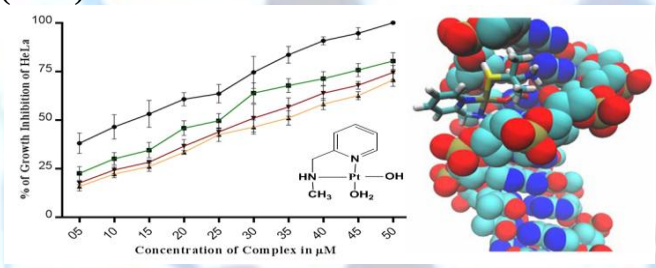

POSTER ID- 055_Jain _ICRCS2017

Complex Formation Between Nd(iii) And some therapeutically compounds in equeous medium.

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ABSTRACT

The lanthanide materials are of interest due to their numerous applications such as laser materials, phosphors for florescent, semiconductors, MRI contrast agent, shift reagent for NMR spectroscopy. It is also used as chemo sensors for medical purpose.Rare earth doped heavy metal fluoride glasses are transparent from UV to IR and they are stable against atmosphere and moisture.The electronic spectral parameters viz. Oscillator strength (P) , Judd-Ofelt (Tλ) , formation constant, Slater - Condon parameter (Fk) , Bonding parameters (b1/2), Nephelauxetic ratio (β) , Percent covalency (δ) and rms deviation (σ) have been evaluated for some ligands (N,O,S) with Nd(III) in DMSO solvent. The change in symmetry (stereo environment) around the doped Nd (III) ion has been studied with respect to f-f transition involved in the system. Complex gives 350-700 nm region and it gives ten bands in visible region. The study infers the change in symmetry around doped Nd (III) ion and M-L interaction. The greater change in symmetry is observed when Nd (III) biotin system has taken in this investigation.

Keywords: Doped system, electronic spectra, nephelauxetic effects, symmetry change, formation constant etc.

POSTER ID- 056_Dubey _ICRCS2017

A Handy Tool to Detect the Presence of Lopramide in Human Saliva

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Abstract:
Lopramide is a drug effective against many types of diarrhea and also for reducing ileostomy output. It is compared with diphenoxylate and is found to be more effective and having less neural side-effect. There may be bioavailability of drug in saliva after ingestion which may be harmful. Thus it is important to detect and thus to prevent side effect. The present study aims at developing a handy tool which can be used by even a layman. The tool has been prepared by impregnating the reagents (KBr: KBrO3 and Crystal Violet) on TLC strip. When saliva sample containing lopramide is dropped on the prepared strip it produces a dirty green color. The color then scanned and RGB is read through VB6 media for calculating effective intensity. The colour intensity varies according to concentration of drug. Thus the developed tool is suitable for point of care health check.
Key words: Lopramide, VB6 media, handy tool, TLC, bioavailability.

POSTER ID- 057_ Pratibha_ICRCS2017

Epoxidation of Styrene by a Plant Peroxidase

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Abstract:
Enantiomeric pure epoxides are well recognized as extremely important building blocks in the fine chemical industry, particularly for the synthesis of biologically active compounds and pharmaceuticals due to the increasing demand for single isomers under legislative pressure for safety issues.[1-4] The versatility of the epoxide is attributed to the oxirane function that can be opened by various nucleophiles or undergo elimination, reduction or rearrangements to a multitude of more elaborate intermediates with the retention or inversion of chirality.[5-7] Therefore the development of efficient synthetic methods for enantiomeric pure epoxides has been of fundamental research interest in both organic synthesis and biocatalysis.
Chloroperoxidase is a potent epoxidation biocatalyst that displays moderate to high enantioselectivity on a wide variety of olefinic substrates[8-12].This communication reports a crude preparation of Chloroperoxidase from Musa paradisiaca which can be conveniently prepared and used for the transformation of styrene to its epoxide. This is the report of epoxide formation using a plant chloroperoxidase.
The method for the preparation of chloroperoxidase from the stem of Musa paradisiaca has been developed. The enzymatic characteristics like Km for the substrates indene and H_2O_2, pH and temperature optima of the enzyme have been determined. The enzymatic transformation of styrene to its epoxide has been demonstrated. The results of the above studies will be presented in the conference.
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POSTER ID- 058_ Ansari_ICRCS2017
Piezoelectric Substrate Effect on Electron-Acoustic Phonon Scattering In Bilayer Graphene

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Abstract. We have studied the effect of piezoelectric scattering as a function of electron temperature and distance between the sample and the substrate on electron- acoustic phonon scattering rate in Bilayer Graphene sitting on a piezoelectric substrate. We obtain approximate analytical result by neglecting the chiral nature of carriers and then proceed to obtain unapproximated numerical results for the scattering rate incorporating chirality of charge carriers. We find that on the incorporation of full numerical computation the magnitude as well as the power exponent both is affected with the power exponent changed from T^3 to $T^{3.31}$ in the low temperature range and to $T^{6.98}$ dependence in the temperature range ($>$5K). We also find that the distance between the sample and substrate begins to strongly affect the scattering rate at temperatures above 10K. These calculations not only suggest the influencing effect of piezoelectric substrate on the transport properties of Dirac Fermions at very low temperatures but also open a channel to study low dimensional structures by probing piezoelectric acoustical phonons.

Keywords: Bilayer Graphene, chirality, relaxation rate, piezoelectric substrate
PACS: 72.80.Vp, 77.22.Gm, 72.10.-d, 73.63.-b

POSTER ID- 059_ Lolakshi_ICRCS2017
Iron Pincer Complexes as Catalysts in Cross-coupling of Aryl Halides and Phenylboronic Acid

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Pincer complexes with iron as active metal center were synthesized to study their catalytic activity in Suzuki-Miyaura coupling reactions. Tridentate pincer ligand was synthesized by the reaction of diphenylchlorophosphine with m-aminophenol, m-phenylenediamine and 2,6-diaminopyridine respectively in a 2:1 ratio in the presence of triethylamine as a base and tetrahydrofuran as solvent media. The resultant ligand was complexed with $FeSO_4$ to obtain PNCOP, PNCNP and PNNNP complexes. The synthesized complexes were examined for their C-C coupling efficiency in cross-coupling between phenyl boronic acid and para substituted bromobenzenes. The research study aims to provide an alternative approach to the Pd catalyzed cross coupling methods, an otherwise subjugated method to obtain cross-coupled products.

POSTER ID- 060_ Sujatha_ICRCS2017

An expeditious catalyst free multicomponent synthesis of (Z)-N-(4-phenyl-2,3-dihydrothiazol-2-yl)benzohydrazonic acid

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Abstract:
Thiazoles are important class of compounds which are receiving increasing attention due to their biological pharmaceutical and synthetic application. Substituted thiazoles have attracted much attention in the field of agriculture and medicinal chemistry because of their pharmaceutical activities such as anti allergy[1], anti-hypertension [2], anti inflammation [3], anti-bacterial[4], and anti-HIV[5]. In the present work, we have demonstrated the synthesis of (Z)-N-(4-phenyl-2,3-dihydrothiazol-2-yl)benzohydrazonic acid via a multicomponent condensation involving Hantzsch thiazole synthesis of phenacyl bromide, thiosemicarbazide and benzoin. The resulting un cyclised compounds have been cyclised to the corresponding 3,4,6-triphenyl-4H-thiazolo[2,3-c] [1,2,4]triazine. The structures of newly synthesized compounds have been established by their analytical and spectral data.

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POSTER ID- 061_ Adhikari_ICRCS2017

Corrosion inhibition properties of hedge plants extracts against mild steel in acidic environment

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ABSTRACT:
Aqueous extract of two purple hedge plants were studied to investigate their corrosion inhibition properties against mild steel in acidic environment. Gravimetric and electrochemical techniques like electrochemical impedance and potentiodynamic polarization were used to evaluate the corrosion inhibition efficiencies of the plant extracts. These studies have been done at different temperatures and different concentrations which showed that plant extracts acted as an efficient corrosion inhibition properties. That the dissolution properties is activation controlled and plant extracts acted as mixed type inhibitor were shown by EIS and potentiodynamic polarization studies respectively. Adsorption isotherm studies revealed that plant extracts followed Langmuir adsorption isotherm and corresponding thermodynamic parameters were calculated from adsorption equilibrium constants. To visualize the effect of PHPL on mild steel coupon under corrosive environment surface analysis was carried out using Scanning Electron Microscope (SEM) and Atomic Force Microscope (AFM) studies to establish the corrosion inhibitive property of this extract in 1M HCl solution.

POSTER ID- 062_Gupta _ICRCS2017

Nanoparticles Catalysed Synthesis of 1,2,3-Trizoles

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1,2,3-Trizole based heterocycles are important due to varied biological properties and their use as therapeutic agents.[1] Some potential pharmaceuticals based on 1, 2, 3- triazoles are Carboxyamidotriazole, an anti-cancer compound, β-lactum antibiotic Tazobactum and Cefatrizine, Rufinamide, an antiepileptic agent. 1, 3-dipolar/ Huisgen cycloaddition reaction between an azide and a terminal alkyne using copper catalysis has been widely used to produce 1,2,3-trizoles. Since then, several new synthetic catalyst and methods have been reported to improve and modify this reaction. Recently, the application of nanoparticles as heterogeneous catalyst has attracted attention because of their high catalytic activity, improved selectivity and recyclability.[2] Thus nanoparticles catalysed trizole synthesis has been reviewed where tiazoles are generated either by the reaction of preformed organic azides and terminal alkynes as starting materials or a multicomponent approach based on different azido precursors, sodium azide, and terminal alkynes has been used.

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Pal, **Preeti Gupta**, Alafia A. Ansari, and Yashwant D. Vankar *J. Org. Chem.* 2011, 76, 5972.
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POSTER ID- 063_ Suri_ICRCS2017
Improving the Mechanical Properties of Al-Cu-Mg alloy processed by Severe Plastic Deformation

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Severe Plastic Deformation (SPD) is one of the promising methods for obtaining bulk nanostructured materials (BNM). Friction Stir Processing (FSP) is one such method for refining and modifying the microstructure, thereby influencing the mechanical properties of the materials. In this investigation, the effect of friction stir processing on mechanical properties of Al-Cu-Mg alloy is studied. The threaded pin tool is used for performing FSP on Al alloy plates having 6 mm thickness. The tool feed rate is maintained constant with different rotational speeds of 1200 and 1800 rpm. The mechanical behavior was studied by determining microhardnes and tensile tests for FSP specimens. The maximum hardeness is observed in the nugget zone which exhibits an increase of 55 % of unprocessed specimen value at rotational speed of 1200 rpm. The ultimate tensile strength also exhibits and increase of 25 % for specimen processed at 1800 rpm. The study also outlines the effect of variation of rotational speeds on fracture morphologies indicating the dimple size and distribution on fractured surface. This study will help in evaluating the variations in mechanical properties of Al-Cu-Mg alloy which can be used in aerospace and aircraft applications.

Keywords: Bulk Nanostructured Materials, Friction Stir Processing, Hardness, Tensile Testing, SPD

POSTER ID- 064_ Iqbal_ICRCS2017
Separating Iso-Propanol-Toluene mixture by Azeotropic Distillation

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Abstract. The separation of Iso-Propanol-Toluene azeotropic mixture using Acetone as an entrainer has been simulated on Aspen Plus software package using rigorous methods. Calculations of the vapor-liquid equilibrium for the binary system are done using UNIQUAC-RK model which gives a good agreement with the experimental data reported in literature. The effects of the Reflux ratio (RR), distillate- to- feed molar ratio (D/F), feed stage, solvent feed stage, Total no. of stages and solvent feed temperature on the product purities and recoveries are studied to obtain their optimum values that give the maximum purity and recovery of products. The configuration consists of 20 theoretical stages with an equimolar feed of binary mixture. The desired separation of binary mixture has been achieved at the feed stage and an entrainer feeding stage of 15 and 12 respectively with the reflux ratios of 2.5 and 4.0, and D/F ratio of 0.75 and 0.54 respectively in the two columns. The simulation results thus obtained are useful to setup the optimal column configuration of the azeotropic distillation process.

Keywords: Aspen Plus, Azeotropic distillation, Iso-Propanol- Toluene, Simulation.

POSTER ID- 065_Choudhary _ICRCS2017

The Synthesis and Characterization of Heterogeneous Catalyst and its Application for the Rhodamine B Degradation.

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Planar Co(II)–Schiff base complex of general formula CoL1, (L1: N,Ń-bis(4-hydroxy-salicylidene)ethylenediamine) when encapsulated within the micro porous nearly spherical supercage of zeolite Y via flexible ligand synthesis method, shown an altered optical property. The complex in both in free and encapsulated states are characterized with the help of different characterization tools like XRD analysis, SEM - EDX, FTIR, UV-Visible spectroscopy. All these studies have pointed towards the fact that the encapsulated complex undergoes distortion in the geometry as compared to that in its free state. The complex becomes an efficient catalyst for the degradation of rhodamine B under UV light upon encapsulation in zeolite Y.

POSTER ID- 066_Anita _ICRCS2017

Quercetin- Extraction and estimation of Curcuma caesia by RPC

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Curcuma caesia commonly called KALI HALDI is a rhizome of high economic importance due to its purgative medicinal properties. The rhizome is known to have medicinal properties against leucoderma, epilepsy, HIV/ AIDS, expelsion gases from stomach and menstrual disorders. Its extract consists of alkaloids, carbohydrates, flavonoids, proteins, saponins, amino acids, glycosides and tannins. Among these flavanoids are the major constituents and are responsible for many pharmacological activities. The present paper aims at extraction and estimation of bioactive flavanoid (QUERCETIN) from Curcuma caesia which is an antibacterial agent through RPC. The flavanoids were estimated using aluminium fluoride method. The chromatogram was monitored with uv-detection at wavelength 256nm through RPC18 analytical column with mobile phase methanol: acetonitrile (50:50 v/v). Quercetin concentration in the extracted sample was found through chromatogram using regression equation.

Key Words: Curcumacaesia, flavanoids, quecertin, chromatogram, RPC

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POSTER ID- 067_Satapathya _ICRCS2017

Synthesis of polyesteramides by carbonylation-polycondensation reaction by using Pd/C as a heterogeneous and recyclable catalyst

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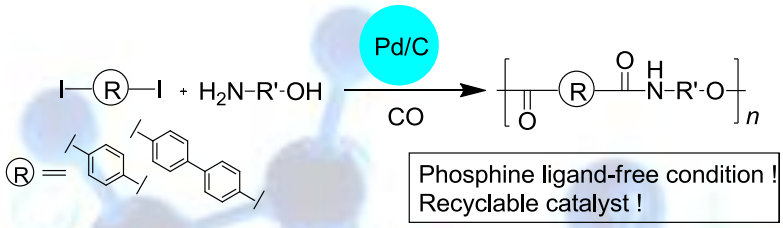
1. Introduction

Polyesteramides are found important applications in engineering plastic, PET and polyester industries as it possess excellent strength, heat resistance and gas barrier properties.[1] Traditional methods for the synthesis of these polymers are by condensation reactions employing aromatic

diacids or their suitable derivatives such as acid chlorides.[2] These methods are stoichiometric and require thermally unstable, moisture sensitive and corrosive acid chloride as raw material. Palladium catalyzed carbonylation-polycondensation is alternative synthetic procedure for the synthesis of these polymers using the aromatic diiodides.[3-5] This carbonylation methodology eliminates the use of corrosive and thermally unstable acid chlorides thus, provides a cleaner synthetic route.
Chaudhari and co-workers first time synthesized the polyesteramides by carbonylation-polycondensation reactions using $PdCl_2$ catalyst along with PPh_3 as a ligand for the carbonylative synthesis of polyester amide.[3] The phosphine ligands used in this homogeneous catalyst system are air sensitive and expensive, require tedious work-up procedure for separation. To overcome these difficulties it is necessary to explore new catalysts with improved activity and selectivity.
Herein we developed an efficient and heterogeneous, ligand-free protocol for Pd/C catalyzed synthesis of polyesteramide using carbonylationpolycondensation reactions of aromatic diiodides with aminohydroxy compounds (Scheme-1).



Scheme 1. Pd/C catalysed synthesis of polyesteramide by carbonylation-polycondensation reaction under phosphine-free condition.

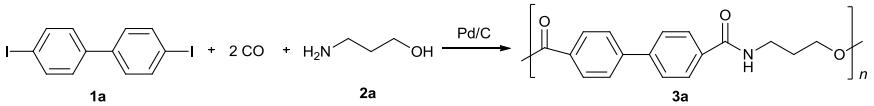
2. Experimental

General experimental procedure for polyesteramide synthesis by carbonylation-polycondensation reaction:

In a 100-mL stainless steel autoclave, aromatic diiodides (5 mmol), amino alcohol (5 mmol), 10% Pd/C (10 mol%), DBU (10 mmol) and chlorobenzene (25 mL) were charged. Autoclave was closed and flushed with high purity nitrogen thrice to remove traces of oxygen and air. The whole mixture was heated up to 115°C with low stirring. After stabilization of reactor temperature, the reactor optimized with 7 atm. of CO. Heating was continued at same temperature with stirring at 700 rpm. After 60 minutes, it was cooled to room temperature and pressure was released carefully. The reaction mixture was diluted by adding 50 mL N-methyl pyrrolidone (NMP). The residue was filtered off and the filtrate was poured in 350 mL of distilled water. The precipitated product was separated and dried under vacuum at room temperature. The product was optimized by FT-IR, ^{1}H, ^{13}C NMR and TGA and elemental analysis.

3. Results and discussion

Table 1. Pd/C-catalyzed synthesis of polyesteramide under phosphine ligand-free conditions[a]



Entry	diiodide	amino alcohol	Yield [%][b]	η [dL/g][c]	TGA [°C][d]	IR [cm^{-1}]	Elemental analysis (%)			
								C	H	N
1	4,4'-Diiodobiphenyl	3-Aminopropan-1-ol	82	0.61	325	3308, 1713, 1640, 1539, 1273, 1109	Calc. Found	72.60 71.	5.34 5.2	4.98 4.7

								86	3	4
2	4,4'-Diiodobiphenyl	Ethanolamine	49	0.46	315	3312, 1715, 1641, 1539, 1275, 1110	Calc. Found	72.91 72.06	4.86 4.46	5.24 5.02
3	1,4-Diiodobenzene	3-Aminopropan-1-ol	69	0.43	300	3315, 1707, 1637, 1535, 1273, 1109	Calc. Found	72.07 71.59	8.21 8.09	6.00 5.74

[a] Reaction conditions: diiodide (5 mmol), amino alcohol (5 mmol), 10% Pd/C (10 mol%), CO (7 atm), Chlorobenzene (25 mL), agitation: 700 rpm, temperature 115 ^{o}C, time 60 min; [b] Isolated yield; [c] Inherent viscosity [η] measured at a concentration of 0.5 g dL^{-1} in NMP at 30 °C; [d] 10% weight loss temperature in air determined by TGA.

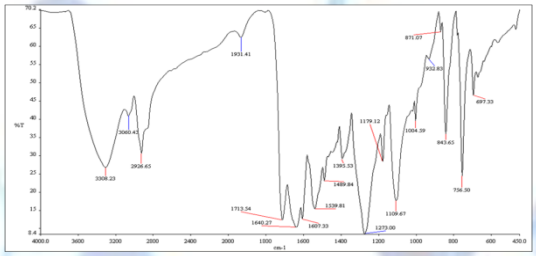


Fig. 1 Infra red spectrum of polyesteramide 3a.

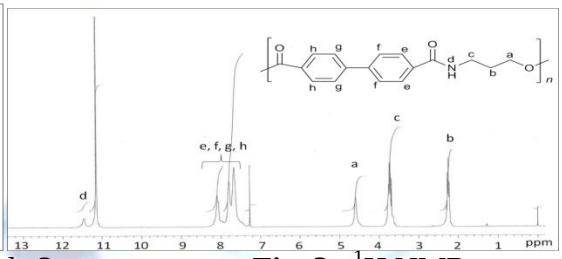


Fig. 3 ^{1}H NMR spectrum of 3a measured using $CDCl_3$ + TFA (80:20)

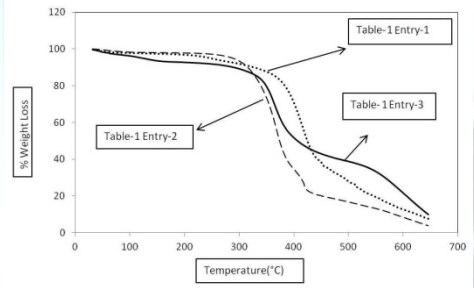


Fig. 2 TGA curves for polyesteramides given in Table 1

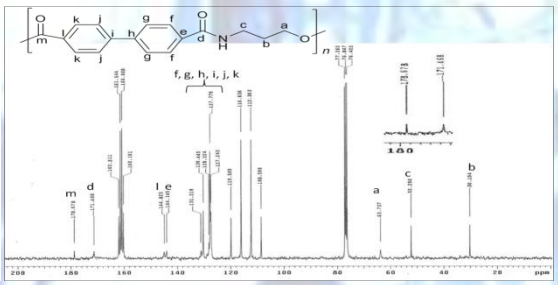


Fig. 4 ^{13}C NMR spectrum of 3a measured in $CDCl_3$ + TFA (80:20).

4. Conclusions

Current Pd/C catalyzed protocol is cost effective for high productivity and reusability in the synthesis of polyesteramide through carbonylation polycondensation reaction avoiding the use of phosphine ligand. More precisely, Pd/C as a heterogeneous and reusable catalyst can be isolated by simple filtration process and recycle up to five recycle providing the excellent yield of the desired product. The present concept comprising economical & effective strategy has a strong drive of making synthetic polyesteramide derivatives.

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POSTER ID- 068_Rao _ICRCS2017
Death by Diclofenac

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ABSTRACT: Diclofenac (DCF) was tested on *Cyprinus carpio* (fingerlings, juvenile and adult). They were monitored for the behavioral, physical and biochemical changes. The behavioral responses for the toxicity were observed in Swimming Patterns. The biochemical changes were analyzed and quantified by Enzyme Assays: Acid phosphatase (ACP), Alkaline phosphatase (ALP), Aspartate aminotransferase (AST), Alanine aminotransferase (ALT), Lactate dehydrogenase (LDH), Acetylcholine esterase (AchE), conducted on the liver, muscle and brain samples of the fishes. The Lowest Observed Effect Concentration (LOEC), LC-50 and 100% mortality dosage were observed. Diclofenac is severely detrimental to the muscle and brain. The fishes were paralyzed to death.
KEYWORDS: diclofenac, enzyme assay, behavioral responses, *Cyprinus carpio*

POSTER ID- 069_Das _ICRCS2017
Biochemical Changes in Two major Indian Carps after Frying in Mustard Oil

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Rohu (*Labeo rohita)* and catla *(Catla catla)* are two major Indian carps consumed throughout the Indian subcontinent. They are source of animal protein and are cultured in different countries. Majority of the studies on the lipid and fatty acids of these fish have been carried out using raw, i.e., uncooked samples though fish are eaten only after cooking. Data of biochemical parameters after frying or other modes of cooking is scanty.
In the present research work we have analysed the lipid, fatty acids and proteins of Rohu (*Labeo rohita)* and catla *(Catla catla)* before and after frying in mustard oil. After frying, the total lipid content and neutral lipid of both the fish enhanced significantly reducing percentage of glyco and phospholipids. The fatty acid profile of all these lipids changed appreciably. Protein content of both fish was reduced immensely after frying. For protein profiling 10% SDS –PAGE was run. Many prominent bands observed in the raw fish samples were found missing in the fried counterpart validating noticeable changes.
The result of this work is important from nutritional point of view and may pave way for better cooking procedures.
Theme: Natural Products and Drug Discovery

POSTER ID- 070_Moideen _ICRCS2017

Fabrication Of Hollow Fiber Membrane Encrusted With Chitosan Nanoparticle And Ag Loaded Chitosan Nanoparticle For Dye Rejection And Antibiofouling Property

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In this work, the chitosan nanoparticles (CNPs) and silver loaded chitosan nanoparticles (Ag^{+}-CNPs) synthesized by the ionic gelation were incorporated into polyphenylsulfone (PPSU) dope solution. The hollow fiber (HF) membranes were then fabricated by dry-wet spinning technique with different composition of CNPs and Ag^{+}-CNPs. The effect of CNPs and Ag^{+}-CNPs on the membrane properties were analyzed. The nanocomposite membranes exhibited good hydrophilicity, high permeability and better antifouling property when compared to the pristine HF membranes. The pure water flux (PWF) of the HF membranes with 0.3 wt. % of CNPs and Ag^{+}-CNPs was found to be 96.84 $Lm^{-2}h^{-1}$ and 113.74 $Lm^{-2}h^{-1}$ respectively. The antibiofouling properties of HF membranes were also studied. The nanocomposite membranes presented remarkable resistance to the development of microbial colonies. The synthesized HF membranes can also be used as a potential candidate for the dye removal, showing maximum rejection of 89.1 % and 86.04 % for Reactive Black-5 and Reactive Orange-16 respectively.

Keywords: Hollow fiber, Chitosan nanoparticles, Silver loaded chitosan nanoparticles, Polyphenylsulfone, Reactive Black-5, Reactive Orange-16, Antibiofouling

POSTER ID- 071_Kulshrestha _ICRCS2017

The Linear, Non-linear and Thermal properties of single crystal of LHMHCl

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The single crystal of amino acid of L-histidine monohydrochloride was grown by slow evaporation technique at room temperature. High optical quality and appropriate size of crystals were grown under optimized growth conditions. The grown crystals were transparent. Crystals are characterized with different characterizations such as Solubility test, UV-Visible, optical band gap (E_g). With the help of optical data to be calculate absorption coefficient (α), extinction coefficient (k), refractive index (n),dielectric constant (ε), optical conductivity (σop). These optical constants are shows favorable conditions for photonics devices. Second harmonic generation (NLO) test show the green light emission which is confirm that crystal have properties for laserapplication. Thermal stability of grown crystal is confirmed by TG/DTA. Mechanical strength of grown crystal is confirmed by Vickers hardness test.

POSTER ID- 072_Alam _ICRCS2017

Hardness and Morphology of Aluminium Matrix Nanocomposites Fabricated Via Stir Casting

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Abstract. Currently, the importance of composite as engineering material is revealed by the fact that among the engineering materials existing in the marketplace above 200 are composites. These composites were discovered to a maximum scope and reported by number of researchers for the past 20 years back. Out of composites, AMCs with SiC nanoparticles are increased applications in aerospace, automobile, marine, and transportation industries. In the present scenario, an attempt has been made to fabricate A356/SiC nanocomposites via double stage stir casting process. Aluminum alloy matrix (A356) ingot was reinforced with preforged aluminum fine powder plus nano SiC (AFP+SiCn) from 1% to 5% by weight having a step of 1%. A356 was selected as matrix due to presence of Si and Mg which enhance the wettability. Stirring process was set at 500±50 rpm for 10 minutes duration in two stage and poured at 680±20o C into the die. Hardness, EDX, SEM micrographs and XRD analysis of fabricated composites were investigated. It was predicted that hardness increased with the incorporation of preforged AFP+SiCn from 41 BHN to 92 BHN. The main constituents in A356 alloy matrix and nanocomposites were confirmed by the EDX spectrum. The homogeneous mixing, voids and particles in composites were depicted by SEM micrographs. XRD analysis disclosed the presence of SiC and decrease in lattice spacing (d) with two theta.
Keywords: AMCs, ball milling, stir casting, morphology, XRD

POSTER ID- 073_Joshi _ICRCS2017
POSTER Presentation

Polymeric micelles as carrier for the delivery of hydrophobic drugs

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Abstract:

The utilization of micellar solutions of low molecular weight surfactants has been one of the accepted methods for the solubilization of hydrophobic drugs. Many pharmacologically active compounds are hydrophobic and cannot travel through the water based body systems.
In contrast to surfactants of low molecular masses, polymeric micelles and mixed micelles have been extensively used and associated with general advantages like higher stability, tailorability, greater cargo capacity, non-toxicity and controlled drug release as well as drug delivery vehicles. Over the years, therefore, micelles have been of interest to pharmacological scientists either as drug delivery systems or as targeting systems.

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POSTER ID- 074_Misra _ICRCS2017
An Investigation of Graphene Quantum Dots

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Graphene sheet when cut to nanosized width gives Graphene quantum dots (GQD) which is a finite band gap semiconductor. This enables GQDs to show photoluminescence (PL) when excited under suitable wavelength. GQDs also possess oxo- and keto- oxygen terminated edges which results in good electrochemical response. We synthesized GQDs via hydrothermal (HT) method as described by Pan et.al. using Graphene oxide prepared from Tour's method as a precursor with certain modifications. The effect of the variation on the photoluminescence and electrochemical properties of the as prepared GQDs were studied. Average particle size of the as synthesized GQDs were 30nm and produced blue PL on excitation with wavelength of 365nm and 400nm which was indicative of uniform fragmentation. Cyclic voltammetry of GQDs using it was observed that terminal Oxo-groups of GQDs were reduced at -0.65V. We also discuss its effectivity as a sensing agent for various heavy metals.

Keywords: Graphene Quantum Dots, Photoluminescence, Electrochemistry, Sensors

POSTER ID- 075_Ansari _ICRCS2017

Piezoelectric Substrate Effect on Electron- Acoustic Phonon Scattering In Bilayer Graphene

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Abstract. We have studied the effect of piezoelectric scattering as a function of electron temperature and distance between the sample and the substrate on electron- acoustic phonon scattering rate in Bilayer Graphene sitting on a piezoelectric substrate. We obtain approximate analytical neglecting the chiral nature of carriers and then proceed to obtain unapproximated numerical results for the scattering rate incorporating chirality of charge carriers which has a more functional role in bilayer graphene. It is calculated that on the incorporation of full numerical computation the magnitude as well as the power exponent both is affected with the power exponent changed from T^3 to $T^{3.31}$ in the low temperature range and to $T^{6.98}$ dependence in the temperature range ($>$5K). We also find that the distance between the sample and substrate begins to strongly affect the scattering rate at temperatures above 10K. These calculations not only suggest the effect of piezoelectric substrate on the transport properties of Dirac Fermions at very low temperatures but also open a channel to study low dimensional structures by probing piezoelectric acoustical phonons.

Keywords: Bilayer Graphene, relaxation rate, piezoelectric substrate
PACS: 72.80.Vp, 72.10.-d, 73.63.-b, 77.22.Gm

POSTER ID- 076_Trivedi _ICRCS2017

Adsorption of Pb(II) from Metal Solution by Ceric-Induced Graft Copolymerization of Acrylonitrile onto Sodium salt of Partially Carboxymethylated Sodium Alginate

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A basic investigation on the removal of Pb(ii) ions from metal solution by graft copolymers of sodium salt of partially carboxymethylated sodium alginate (Na-PCMSA, $\overline{DS}$ = 0.55) with

acrylonitrile (AN) (%G = 330.55) were prepared by free radical polymerization using ceric ammonium nitrate (can) as a redox initiator. Graft copolymerization was confirmed by FTIR, SEM and TGA measurements. The influence of different experimental parameters such as P^H, adsorbent dosage, contact time and metal ions concentration were evaluated. The experimental data were evaluated to find out kinetic characteristics. Adsorption processes were found to follow pseudo-second order rate equation. adsorption isotherms correlate well with the Langmuir isotherm model and the maximum sorption capacity of Pb(ii) metal ions evaluated is 190.5 mg/g. Thermodynamic parameters were calculated based on Van't Hoff equation. The average change of standard adsorption heat ΔH° was -92.5 KJ/mol. negative ΔH° and ΔG° values indicate the adsorption process for Pb(ii) onto sodium salt of partially carboxymethylated sodium alginate is exothermic and spontaneous. The standard entropy ΔS° was also negative, which suggest a decrease in the freedom of the system.

POSTER ID- 077_Ansari _ICRCS2017
SYNTHESIS AND CHARACTERIZATION OF CU NANOPARTICLES BY CHEMICAL REDUCTION METHOD

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Abstract. *We report the synthesis of Copper nanoparticles (Cu nanoparticles) by the chemical reduction method. To investigate the structural properties, XRD pattern of the sample were recorded and calculations were made for crystal parameters. TEM images shows the formation of spherical Cu nanoparticles. In order to investigate the optical properties, FTIR spectra were recorded that determines the nature of the chemical bonds. To determine the crystalline conditions, DSC and TGA of Cu nanoparticles were carried out. The plot shows the weight loss of the nanoparticles due to decomposition of Cu nanoparticles.*

Keywords: Cu nanoparticles, Chemical reduction method, XRD, TGA, DSC.
PACS: 81.07.-B, 78.20.-E, 81.07.BC, 81.16.-C, 65.80.-G

POSTER ID- 078_Ibrahim _ICRCS2017
Synthesis and Characterization of Novel Poly[styrene-alt-(N-4-benzoylglycine-maleamic acid)], cumene terminated-blend-Polysulfone Ultrafiltration Membranes for Heavy Metal Removal

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Abstract
A simple, scalable novel polymer was synthesized by aminolysis of the poly(styrene-co-maleic anhydride), cumene terminated (PSMAC) using *p*-amino hippuric acid. The prepared polymer was characterized by ^{1}H NMR and Fourier transform infrared spectroscopy (FT-IR). The main objective is to perceive the effect of blend ratio of polysulfone (PSf) andpoly[styrene-alt-(N-4-benzoylglycine-maleamic acid)],cumene terminated (PAH) on morphology and permeation properties of the membranes. The PSf/PAH blend membranes unveiled enriched hydrophilicity, anti-fouling, increased porosity, zeta potential, water uptake and permeability owing to the existence of the hydrophilic carboxylic acid group. However, the contact angle was not diminished over 20% of PAH ratio as the hydrophobic alkyl group increases. Differential scanning calorimetry (DSC) was employed for the determination of the glass transition temperature (T_g) of the blends and results

revealed that, the polymer blend is miscible in nature. Moreover, the best-performed membrane (M-3) was screened for the heavy metal ion rejection without employing any complexing agent and showed the rejection of 79 % for Pb^{2+} and 70 % for Cd^{2+} ions respectively.
Key words: Polysulfone, Heavy metal, *p*-Amino hippuric acid, Glycine, Poly(styrene-co-maleic anhydride), cumene terminated.

POSTER ID- 079_Sukul _ICRCS2017
UPCONVERSION EMISSION STUDY OF YB3+/ER3+ CODOPED SB2O3-WO3-LI2O (SWL) GLASS-CERAMICS FOR SENSING APPLICATIONS

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Abstract. This article reports upconversion emission studies on Yb^{3+}/Er^{3+} co-doped Sb_2O_3-WO_3-Li_2O (SWL) glass-ceramics. The 980 nm laser excited upconversion (UC) emission intensity ratio of green to red bands is found too high to neglect the contribution from the red emission band, which is not observed normally in Yb^{3+}/ Er^{3+} doped materials. The variation in upconversion emission intensity is studied with the increase in excitation power as well as temperature of the sample. It has been established that the emission bands centered at 525 and 545 nm are thermally coupled and can act as a temperature sensor in the 300–480 K temperature range.
In the past decade, frequency upconversion of infrared to visible light have received importance due to the potential application for solid-state lighting, two-photon fluorescence imaging, optical data storage, biomedical diagnostics, security application and detectors for infrared radiation [1–8]. At present, Er^{3+} is the most well-known upconversion emission center because the metastable levels $^4I_{9/2}$ and $^4I_{11/2}$ of Er^{3+} can be conveniently populated by commercial low-cost powerful 800 and 980 nm laser diodes [9–11]. Nowadays, tellurite and antimonate glass-ceramics are of growing interest due to their relative low phonon energy, high refractive index, good corrosion resistance, thermal and chemical stability. The antimonate glass ceramics are more stable against the pumping light, possess high refractive index and are transparent up to the far infrared wavelengths, which make them suitable for hosting the rare earth ions to give out high luminescence efficiency in the visible and NIR regions. Triply ionized Er^{3+}, Ho^{3+}, Tm^{3+}, Nd^{3+} ions of the lanthanide series have been widely studied for upconversion processes in various glass ceramics hosts. Erbium ion (Er^{3+}) has been recognized as one of the most efficient ions for obtaining frequency upconversion [6,10,12]. In order to improve the pumping efficiency of 980 nm laser, the sensitization of Er^{3+} doped materials with Yb^{3+} ions is a popular way to increase the optical pumping efficiency because Yb^{3+} ions exhibits an intense broad absorption cross section between 870 and 1050 nm [13], while Er^{3+} has low absorption at 980 nm.

In this article, the novel synthesis route and upconversion emission study of Er^{3+}/Yb^{3+} co-doped Sb_2O_3-WO_3-Li_2O (SWL) glass-ceramics has been reported. The phonon energy of this glass-ceramics has been predicted from the FTIR spectra. The purpose of this article to focus on the development of a new antimony glass-ceramics with low phonon energy, also understanding of the upconversion emission behavior in this glassy host for predicting its potential lasing properties.

POSTER ID- 080_Upadhyay _ICRCS2017

Study on Mechanical and Microstructure Behaviour of Submerged Arc Welding Flux using Red Mud

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Abstract:

Aluminium industries generated a lot of solid waste in the form of Red mud (RM) which created a hazardous problem to the environment. Approximately 250 million tonnes of Red Mud waste is produced worldwide. These wastes are difficult to recycle and cause contamination of soil and nearby water sources. Red mud is an alkaline waste having a pH value 10.5-12. Various literature review indicate that Red Mud can be utilized as mortars and concrete, as an adsorbents in waste water treatment, coating elements, building materials, etc. helps in reducing the environmental degradation. This paper emphasis on utilization of Red Mud for preparing submerged arc welding flux and study its mechanical and microstructure behavior. Among the six fluxes prepared in the laboratory, Flux no. 1 (basicity 1.106) found to be best due to its running performance, impact value, micro hardness and Brinell hardness. The hardness value (HV) of the fluxes was varying from 165.70 to 217.15 at a load of 1000gm respectively. From the micrograph of welded metal, acicular ferrite found to be optimum which helps in increasing the ductility and hardness of the welded material.

Keywords: Red Mud, Submerged Arc Welding Flux, Mechanical and microstructure behavior, Hardness Value(HV)

POSTER ID- 081_ Purohit_ICRCS2017

Studies on Transport Behaviour of a Binary Liquid Mixture of Ethanol and Toluene at 298.15K in Terms of Viscosity Models

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Abstract. The main transport properties of liquid or liquid mixtures are viscosity, diffusion, transference and electrical conductance. Viscosities of various liquid mixtures have been studied and their analyses have also been done by the help of some parameters. For each solution, the excess thermodynamic properties (Y^E) have been investigated. These excess thermodynamic properties are excess molar volume (V^E), viscosity deviation ($\Delta\eta$) and excess Gibbs free energy of activation of viscous flow (ΔG^{*E}). These parameters provide us the important information about interaction between molecules. For example, the negative value of V^E and positive value of $\Delta\eta$ shows the strong interaction between the solute and solvent molecules while positive value of V^E and negative value of $\Delta\eta$ shows the weak interaction between solute and solvent molecules. Above parameters and their discussion have been made in our earlier paper. In the present research paper the viscosity data have been correlated with the equations of Grunberg and Nissan, Hind et al., Tamura and Kurata Katti. The excess values have been correlated using Redlich-Kister polynomial equation to obtain their coefficients and standard deviations. It has been found that in all cases, the data obtained fitted with the values correlated by the corresponding models very well. The results are interpreted in terms of molecular interactions occurring in the solution.

POSTER ID- 082_ Rajwar_ICRCS2017

Characterization of Hydrothermally Synthesized SnS Nanoparticles for Solar Cell Application

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In the present study, SnS nanoparticles were synthesized by simple hydrothermal method using stannous chloride and thiourea as tin (Sn) and sulfur (S) precursor respectively. Synthesized nanoparticles were characterized by X-ray diffraction (XRD), Field Emission Scanning Electron Microscopy and UV-Vis Spectroscopy techniques. XRD pattern reveals that as-prepared nanoparticles exhibit orthorhombic structure. Average particles size was calculated using Scherrer's formula and found to be 23nm. FESEM image shows that the as-prepared nanoparticles are in plate like structure. Direct optical band gap (E_g) of as-synthesized nanoparticles was calculated through UV-Vis Spectroscopy measurement and found to be 1.34 eV, which is near to optimum need for photovoltaic solar energy conversion (1.5 eV). Thus this SnS, narrowband gap semiconductor material can be applied as an alternative absorber material for solar cell application.

POSTER ID- 083_ Verma_ICRCS2017

An investigation of down-conversion luminescence properties of rare earth doped $CaMoO_4$ phosphors for Solar cell application.

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In the present work, we have synthesized a $CaMoO_4$:(1%)Er^{3+},(1%)Yb^{3+} down-converting phosphors by hydrothermal method. The primary goal of studying down-conversion is to enhance the conversion efficiency of Si-solar cell by converting one high energy (UV) photon into two low energy (NIR) photons. The various characterization such as XRD, FESEM and

Photoluminescence (PL) were carried out. The X-ray diffraction (XRD) pattern exhibit tetragonal crystal structure and has a space group of $I4_1a$ (88).The FESEM microphotograph shows surface morphology having a abundance of particles in spherical shape. **The PL emission spectra were recorded both in Visible and NIR regions. There is hypertensive emission peak at** 555 nm in the visible region due to $^4S_{3/2} \rightarrow {}^4I_{15/2}$ transition of Er^{3+} ions and an emission at 980 nm ($^2F_{7/2} \rightarrow {}^2F_{5/2}$) due to Yb^{3+} ions. The result shows a demand of this down-converting material in the field of solar energy to improve the efficiency of Si-solar-cell.

POSTER ID- 084_ Rathore_ICRCS2017

Micellar spectral, Potentiometric and Biological Investigations on Mn (II)- Thiosemicarbazone Systems

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Abstract: The therapeutic importance of thiosemicarbazone group containing ligands has promoted the selection of this class of ligands and their complexes for the study. Ligand 3, 4, 5-Trimethoxybenzaldehyde thiosemicarbazone [3, 4, 5-TBT] has been synthesized. The present work describes the synthesis, characterization, solution and biological investigations on Mn (II)-thiosemicarbazone complexes. Solution studies on the complexes have also been carried out in different micellar [HTAB, SDS, TX-100] systems at 25°C and data have been compared with ethanol water mixture. Stability constants and molar ions in 60% ethanol were determined. Metal – ligand (M/L) ratio and formation constants have been determined in Brij-35 and TX-100 micellar system by conductometric method.
Keyword: Thiosemicarbazone, biological, formation constants, Brij-35 and TX-100

POSTER ID- 085_Kumawat _ICRCS2017

CORROSION INHIBITION EFFECT OF SCHIFF BASE ON MILD STEEL IN ACIDIC MEDIUM

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ABSTRACT

Corrosion inhibitors by Schiff bases were synthesized and its inhibiting action on the corrosion of mild steel in HCl was investigation by various corrosion monitoring technique mass loss technique have been employed to study of corrosion inhibition of some newly synthesized Schiff bases N-(2-methoxy banzalidine)-2-amino pyrimidine (SB_1) and N-(3-methoxy benzalidine)-2-amino pyrazine (SB_2) for mild steel in HCl solution. Result of inhibition was assumed to occure via adsorption of the inhibitor molecule on the metal surface. The mass loss technique show that Schiff bases are good inhibitors in acidic medium solution. Inhibition efficiency increase with the increase in the concentration of acid as well as those of inhibitor. Maximum inhibition efficiency is shown as highest concentration of Schiff bases in acidic medium.
Kay board: Schiff bases, Corrosion, inhibition efficiency, corrosion rate surface coverage.

POSTER ID- 086_ Revathi_ICRCS2017

Workability and Mechanical properties of alkali mediated blended (FA/GGBS) geopolymer mortar with the addition of latest generation admixture (propriety chemical).

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Abstract:Geopolymer(GP) is a novel class of inorganic polymer with an amorphous 3D frame work of $[SiO]^{4-}$ and $[AlO_4]^{5-}$ monomeric species as building blocks. It has potential industrial application due to their excellent characteristics including high compressive strength, fire resistant, immobilization of toxic waste. GP is considered as a green material for its low embodied energy and CO_2 emission. Fly ash (FA) based geopolymer mortar showed promising Compressive strength (25Mpa) though the initial and final setting time were excessively long making room temperature application becomes impractical. Inclusion of Ground Granulated Blast Furnace Slag (GGBS) with FA have a significant effect on setting time and strength development of geopolymer binder when cured in ambient temperature.

This paper evaluates workability, mechanical strength behavior of fly ash based geopolymer (GP100) and 50% blended FA(GP50) with and without usage of latest generation superplasticizer namely modified Polycarboxylate ether (MP), a propriety chemical. In GP50 significant increase in the compressive strength (60Mpa) and decrease in the workability, initial and final setting time (20min & 40min) were observed due to the inclusion of GGBS in the fly ash based GP matrix. The inclusion of 1% MP in the GP50 matrix improves the setting time, thereby fluidizing(plasticizing) property is improved and the relative slump value was increased by 2.5% compared with control specimens (GP50). Prediction of fresh mortar property and compressive strength with the addition of MP were studied and exhibited using contour plots. A positive zeta potential(+4.5mv) of the geopolymeric paste by the addition of MP favored more gel formation and denser microstructure of 50%blended FA(GP50). The association between the rheological properties (flow) and the formulation is the significant issue for the success of the mix design. Investigation of rheological (shear rate, shear stress and viscosity) influences on fly ash suspension with different parameters like: i. A hybrid activator ($NaOH+Na_2SiO_3$) solution having SiO_2/Na_2O as 0.5 &1.0. ii. Volume of admixture(MP) has been studied. Microstructure and surface morphology were studied using FT-IR and FESEM techniques.

Keywords:

Geopolymer, Mini slump test, Mechanical strength, Rheology, FT-IR, FESEM, zeta potential.

POSTER ID- 087_Mahavar _ICRCS2017

Synthesis and Surface Texturing of Black Metal Oxide Nanoparticles as Durable Solar Absorbing Material for Concentrating Solar System

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ABSTRACT: Solar energy can be converted into electricity directly through photovoltaic technology or indirectly by means of concentrator solar power (CSP) technology. Other than power generation CSP has major potential in high temperature thermal applications. One of the crucial challenges of CSP technology is lack of a high-performance solar absorbing material at high temperature. Considering above, presented work is focused on fabrication of an efficient and stable receiver material for the high temperature CSP system with low cost. Also, to prepare a material which is easily spread or coated on receiver material with simple means of coating such as spray coating, or spin coating.In this work, a black oxide material made of cobalt oxide nanoparticles is synthesized by sol-gel method with varying concentration of precursors. Three samples were prepared for characterization. Among those best one is selected on the basis of optical properties (FTIR and uv-visible spectroscopy) and is utilized as a solar absorbing material. Synthesized black oxide Co_3O_4 nanoparticles are dispersed throughly in black matt paint with the help of sonicator. This modified high temperature solar absorber paint is further coated over the glass slide as solar absorbing material with the help of spin coater. Prepared coated slides are annealed at 100^0C for an hour after that high temperature absorber coated slides are again annealed at 400^0C for two hours. The optical properties of the high temperature absorber coated slides are characterized by UV-Visible spectroscopy. Experimental results show that the textured Co_3O_4 surface is a promising candidate for solar absorbing material in CSP systems. The Co_3O_4 layer can easily be coated in a manner suitable for CSP receiver applications.
Keywords: concentrating solar power, solar absorber, nanoparticles, sol-gel method

POSTER ID- 088_ Sivasakthi_ICRCS2017

Mechanical strength properties of alkali activated fly ash based geopolymer mortar at elevated temperature with the addition of silica fume.

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The environmental impact of fly ash in terms of its massive generation and large usage of land disposal is the major concern for everyone. The alkali activation of fly ash is one of the ecologically benign process in that alumino silicate materials transform partially/wholly to vitreous structure into cementious skeletons. These alkalis activated fly ash system perform better than Portland cement mortars including performance at elevated temperature.
In this paper investigation on the residual compressive strength at elevated temperature of fly ash based geopolymer mortar (FA:Sand 1:2) chemically activated by sodium silicate mixed with sodium hydroxide solution(Ms:1.6) cured at 60 C for 24 hrs . The compressive strength of the mortar specimens exposed to elevated temperature of 800C were determined with the addition of silica fume from 0-10% fly ash mass.The various decomposition phases formed were identified using XRD,FTIR, thermo gravimetric analysis, differential thermal analysis and scanning electron microscopy.The results indicated that fly ash activated by alkaline solution prepared with L/S of 0.6 with 5% Silica fume addition is more able to resist degradation caused by elevated temperature

exposure.The alkali activated fly ash system superior to OPC system in terms of retention of compressive strength (130 times) and the enhancement of strength observed (200 times) with the addition of 5% silica fume.

POSTER ID- 089_ Deepika_ICRCS2017

Study of Temperature Dependent Electrical Properties of $Se_{80-x}Te_{20}Bi_x$(x=0,3,6) Glasses

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This paper reports the electrical properties of $Se_{80-x}Te_{20}Bi_x$(x=0,3,6) glasses studied as a function of temperature. The amorphous samples have been prepared using the melt quenching technique and the electrical measurements have been recorded on Keithley Electrometer in the temperature range 298-373 K . The I-V characteristics are noted at different temperature and the data obtained is analyzed to get dc electrical conductivity and activation energy of electrical conduction. Further, Mott's 3D VRH model has been applied to obtain density if states, hopping range and hopping energy at different temperatures. The studies reveal that dc electrical conductivity increases with increase in Bi content in Se-Te system. The samples also show close agreement to Mott's VRH model.

POSTER ID- 090_Chandel _ICRCS2017

Growth of Nanocrystalline Cu_2ZnSnS_4 Thin Films using the Spray Pyrolysis Technique and their Characterization

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Abstract. Nanocrystalline thin films of Cu_2ZnSnS_4 (CZTS) were grown on the glass substrates using the spray pyrolysis technique. The films were grown at a substrate temperature of 300 °C after which they were annealed at 350 °C in vacuum. X-ray diffraction (XRD) studies showed that the films crystallized in the kesterite structure. Energy dispersive analysis of X-rays (EDAX) studies showed that the films possess the desired stoichiometry i.e. the proportion of Cu:Zn:Sn:S in the CZTS solid solution is close to 2:1:1:4. Secondary Ions Mass Spectroscopy (SIMS) depth profiling confirmed the uniformity in elemental composition along the depth of the films. SEM studies showed that the films are covered with CZTS particles forming sheet like structures. AFM studies show that the size of the particles on the surface of the films is around 10 -15 nm. UV-VIS-NIR transmission spectra were used to determine the optical band gap of the CZTS films which was found to be around 1.55eV.

POSTER ID- 091_Bhat _ICRCS2017

Band Gap Depiction of Quaternary FeMnTiAl Alloy Using Hubbard (U) Potential

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Abstract. We have employed self-consistent *ab-initio* calculations to investigate new quaternary alloy FeMnTiAl by applying Hubbard (U) potential. The alloy is found to be stable in ferromagnetic phase with cubic structure. The alloy shows half-metallic (HM) ferromagnet character. The value of minority band gap of FeMnTiAl is found to be 0.33 eV respectively. Electronic charge density reveals that both types of bonds covalent as well as ionic are present in the alloy.Thus the new quaternary alloy can be proved as vital contender for spin valves and spin generator devices.

POSTER ID- 092_Kacchhawa _ICRCS2017

Seasonal variation in physico chemical parameters of a fresh water "Devikund Sagar Pond" of Bikaner district.

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Abstract: Water an indispersable component of an ecosystem is necessary resources for the sustainability of life on earth. The fresh water bodies all over the Rajasthan are getting polluted thus decreasing the suitability of the portable water. Bikaner has a number of lakes and ponds in and around the city. They were the main sources of drinking water during past. "Devikund Sagar pond" is situated about 7km from Bikaner city in the east near sagar village. The analysis of water quality provide important data about the various changes caused by various biotic and abiotic factors during different seasons in the year. Present study deals with the determination of the some physico – chemical characteristics of water viz BOD, COD, DO, nitrate, sulphate, fluoride, phosphate, and trace metal during the year 2015-16.A significant variations and correlation were also observed between the physico-chemical characteristics of studied water.

Keywords:DO,BOD,COD,Trace metal Synthesis, Characterization and Catalytic Application of Iron Schiff base1

POSTER ID- 093_Ansari _ICRCS2017

Synthesis, Characterization and Catalytic Application of Iron Schiff base Complex in Suzuki-Miyaura Cross-Coupling Reaction.

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Complexes with Schiff base ligand possess unique catalytic activity in cross-coupling reaction. Schiff base was synthesized by condensation of substituted aromatic aldehyde with amine. The complex was synthesized using Schiff base ligand and iron salt in ethanol solvent. The synthesized

complex was characterized by elemental analysis, FT-IR, UV-Vis, NMR and magnetic susceptibility. The complex was used as a catalyst for Suzuki-Miyaura cross-coupling reaction. The catalyst showed good conversion and activity. The availability of the reagent and mild reaction condition contributed to the versatility of this reaction. The synthesized complex showed non toxic by-products. The by-products could be easily removed from the reaction mixture thereby making this method suitable not only for laboratories but also for industrial processes.

POSTER ID- 094_Sardar _ICRCS2017
Polypyrrole Based Nanocomposites For Supercapacitor Applications: A Review

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Recently conducting polymers have attracted great interest for supercapacitor applications. Among conducting polymers polypyrrole is most popular due to its unique electrical conductivity, optoelectrical properties, redox property and excellent environmental stability. In this article, we present a comprehensive review of polypyrrole and polypyrrole based nanocomposites for supercapacitor applications. We have included study of various parameters like power density, energy density, specific-capacitance by various authors for different kinds of nanocomposites where fillers are metal oxides, metal sulphides, graphene etc. Some polypyrrole nanocomposits show good electrochemical performances. The extremely stable supercapacitors with excellent flexibility and scalability hold considerable promise for the commerical application of flexible and wearable electronics.

POSTER ID- 095_ Kumar_ICRCS2017
Simulation of CZTS Solar Cell for performance improvement.

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Abstract. A Copper-Zinc-Tin-Sulphide (CZTS) based solar cell of Mo/CZTS/CdS/ZnO is simulated using SCAPS. Quantum efficiency and IV curve of the simulated output of CZTS solar cell is mapped with highest efficiency reported in literature for CZTS solar cell. A modification in back contact thus shottky barrier, spike type band alignment at the CZTS-n type layer junction and higher electron mobility (owing to alkali doping in CZT)S are implement in simulation of CZTS solar cell. An improvement in the solar cell efficiency compared to the standard cell configuration of Mo/CZTS/CdS/ZnO is found. CZTS is plagued with low Voc and low FF which can be increased by optimization as suggested in paper.

POSTER ID- 096_Jain _ICRCS2017
Synthesis, Properties and Spectroscopic Characterization of Some Triorganotin (IV) N-Alkyldithiocarbamate Complexes and their Antibacterial Activities

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Reactions of triorganotin(IV)chloride with carbon disulphide and primary amines in 1:1:1 molar ratio under stirring at 277 K, give the product of the type $R_3Bu[S_2CNHR']$ where R= Me, Bu, Ph and R'= Me, Et, Pr^i, Bu^n, Ph. The newly synthesized complexes are yellow colored crystalline solid, soluble in common organic solvents and non-volatile in nature. These complexes have been characterized by elemental analysis (C, H, N, S, Sn), molecular weight determination, IR and NMR [^1H, ^{13}C, ^{119}Sn] spectral data. On the basis of above studies tetracoordinated nature of the tin atom and monodentate behaviour of ligand has been established. Some newly synthesized compounds were tested for their antibacterial activity against gram positive and gram negative bacteria, they showed good activity against bacteria.
Keywords: Trimethyltin(IV)chloride, tributyltin(IV)chloride, triphenyltin(IV)chloride, primary amines, carbon disulphide

POSTER ID- 097_ Dash_ICRCS2017
Pervious Concrete Using Fly Ash Aggregate As Coarse Aggregate-An Experimental Study

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Abstract
In an effort to find an alternative material in concrete, much work has been focused on the fabrication and properties of pervious concrete prepared from sintered fly ash aggregates. Relationships among various parameters i.e. strength, void ratio, aggregate size, permeability for two different pervious concrete are also presented here. It can be seen that pervious concrete made of fly ash aggregate performs well in respect of permeability. In this study the waste raw material of thermal power plant i.e. fly ash, has been used for the preparation of sintered fly ash aggregate (SFA) using down draft sintering technique. Sodium hydroxide is used as the binder material. The independent variables considered for the preparation of the artificial aggregate are sodium hydroxide and fly ash contents. The pervious concrete were obtained by the mixture of three different size fly ash aggregates (4.75 mm,9.5 mm,12.5 mm) ,Portland cement, water with little amount of sand or without sand. Admixtures like Silica fume(SF) and Super plasticizer are added to the mixture to enhance the strength of concrete. Trial being taken on preparation of Fly

POSTER ID- 098_Siddique _ICRCS2017
Investigation of Optical Properties of Nickel Oxide Nanostructures using Photoluminescence and Diffuse

Reflectance Spectroscopy

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Abstract. Nickel oxide (NiO) nanoparticles with a crystal size of around 16.26 nm have been synthesized via sol-gel method. The synthesized precursor was calcined at 600 ^{0}C for 4 hours to obtain the nickel oxide nanoparticles. The XRD analysis result indicated that the calcined sample has a cubic structure without any impurity phases. The FTIR analysis result confirmed the formation of NiO. The NiO nanoparticle exhibited absorption band edge at 277.27 nm and the optical band gap have been estimated approximately 4.47 eV using diffuse reflectance spectroscopy and photoluminescence emission spectrum of our as- synthesized sample showed strong peak at 3.65 eV attributed to the band edge transition.
Keywords: Nanotructures, XRD, FTIR, UV, PL
PACS: 61.05.cp, 78.30.j, 78.40.q

POSTER ID- 099_Nayak _ICRCS2017
Elastic Properties of Some Transition Metal Arsenides
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The elastic properties of transition metal arsenides (TMAs) have been studied by employing Wien2K package based on density functional theory in the zinc blende (ZB) and rock salt (RS) phase treating valance electron scalar relativistically. Further, we have also treated them non-relativistically to find out the relativistic effect. We have calculated the elastic properties by computing the volume conservative stress tensor for small strains, using the method developed by Charpin. The obtained results are discussed in paper. From the obtained results, it is clear that the values of $C_{11} > C_{12}$ and C_{44} for all the compounds. The values of shear moduli of these compounds are also calculated. The internal parameter for these compounds shows that ZB structures of these compounds have high resistance against bond order. We find that the estimated elastic constants are in good agreement with the available data.

POSTER ID- 100_Srivastav _ICRCS2017
A Comparative Study of Physico- Chemical Features of Lentic and Lotic Freshwater Ecosystems in The Arid Region of Rajasthan
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ABSTRACT:
Ecosystem is a biological environment consisting of all the living organisms or biotic component, in a particular area, and the nonliving or abiotic, component with which the organisms interact such as air, soil, water and sunlight. Fresh water ecosystem is divided into two groups- lentic and lotic. Lentic ecosystems included still water of lakes and ponds while lotic ecosystems included running water of streams and rivers. An aquatic ecosystem maintain its existence by interdependent and inter-related physico- chemical and biological factors. The present study aimed to compare the physico-chemical features of lentic and lotic fresh water ecosystems in the arid region of Rajasthan. The study was undertaken in "Sethani Ka Johra" Churu which is a lentic ecosystem and "Sadul branch" of Sirhind Feeder canal, Hanumangarh which is a lotic ecosystem. The period of study was January, 2015 to June, 2015. Water was examined for temperature, pH, transparency, electrical conductance (EC), total dissolved solids

POSTER ID- 101_ Ahamad_ICRCS2017
Radiation Effect On Heat Transfer In Porous Annulus

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Abstract. Radiation is one of the important modes of heat transfer that plays vital role in overall heat transfer behavior of any medium. The current work is an attempt to understand the influence of radiation on the heat transfer characteristics of porous medium fixed in an annular cylinder having maintained at hot temperature on outer surface and cold temperature at inside radius. The flow in porous medium is assumed to follow Darcy Law. The governing partial differential equations are solved with the help of finite element equations using a special purpose computer code. It is found that the presence of radiation expressed in terms of radiation parameter enhances the Nusselt number.
Keywords: Porous medium**,** Annulus, Radiation, FEM

POSTER ID- 102_ Pal_ICRCS2017
Phytomedicine: Alternative Treatment Option For Advanced Cancer

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Abstract: Botanical medicines have been used traditionally by herbalists and indigenous healers worldwide for the prevention and treatment of various diseases. Traditional herbal medicines have been reported to possess significant bioactivities and are important source of drugs. Though great achievements are made in the battle against cancer over the past decades; however, cancer still remains one of the leading causes of death in developing countries like India. Generally, Indian cancer patients have late stage incurable diseases (75% to 80%) when first diagnosed; hence, curative therapy is impossible. Majority of the Indian cancer patients depends on some form of alternative therapy for treatment and palliation. A herbal combination of *Azadirachta indica, Curcuma longa, Embelica officinalis, Ocimum sanctum, Semecarpus anacardium,* and *Tinospora cordifolia,* popularly known as *HUMA* is quite popular alternative cancer therapy in Lucknow. Many cases of complete remission of cancer have been reported with this therapy. Little is known about the clinical efficacy of the various alternative therapies used by cancer patients. Some poses serious problems while others may be useful. The experience with *HUMA* demands more scientific exploration to know about its potential.

Complex diseases seriously threaten human health. Drug discovery approaches based on "single genes, single drugs, and single targets" are limited in targeting complex diseases. The development of new multicomponent drugs for complex diseases is imperative, and the

establishment of a suitable solution for drug group-target protein network analysis is a key scientific problem that must be addressed[4]. Herbal medicines have formed the basis of sophisticated systems of traditional medicine and have given rise to some key drugs that remain in use today. The search for new molecules is currently taking a different route, whereby scientific principles of ethnobotany and ethnopharmacognosy are being used by chemists in the discovery of different sources and classes of compounds.

In spite of the current advances and achievements in systems biology and translational medicinal research, the current strategies for cancer therapy, such as radiotherapy, targeted therapy, immunotherapy and chemotherapy remain palliative or unsatisfactory due to tumor metastasis or recurrence after surgery/therapy, drug resistance, adverse side effects, and so on [2]. A large proportion of cancer patients use complementary and alternative medicine (CAM) to extend their quality of life [3,7]. The scenario in the developing world, such as India is even more challenging as most of the Indian cancer patients have late stage incurable diseases (75% to 80%) when first diagnosed; hence, curative therapy is impossible. Majority of the Indian cancer patients depends on some form of alternative therapy for treatment and palliation.

In this communication I like to share my experiences of cancer treatment with an alternative cancer therapy popularly called *HUMA*. This alternative therapy was first advocated by Dr. SM Atiq of Lucknow and later popularized by her daughter Vaidya S Hina Fatima. The herbal formulation comprised of various important *Ayurvedic* herbs such as *Azadirachta indica, Curcuma longa, Embelica officinalis, Ocimum sanctum, Semecarpus anacardium,* and *Tinospora cordifolia* among others. As the herbal formulation is not patented; hence, the exact formulation is not disclosed. The herbal medicine is orally administrated and titrated according to the need of the patients.

The alternative therapy is mostly used by cancer patients with advanced disease primarily for palliation. Remarkable regression of cancer/tumor without any visible side effects was observed in few patients, especially suffering from oral cancer [9,10]. Partial and moderate response were observed in some patients (35-40%)[11]. However, in most of the patients the therapy failed to generate any visible anticancer effect. However, public opnion regarding this therapy is strong and over 500 patients try this therapy every year.

The unmonitored use of herbal medicinal remedies by patients with cancer presents a significant challenge to oncology healthcare professionals[1]. Globally, unprecedented numbers of cancer are opting for various complementary and alternative therapies. In developed world cancer patients try complementary and alternative therapies in conjunct with conventional care. However, in the developing world alternative therapies are the only available treatment option for many economically challenged cancer patients. The clinical efficacy of many of the alternative herbal therapies is not known. Many may be really harmful and some therapies like *HUMA* may be beneficial to some patients.

Plants have been the primary source of medicines since the beginning of humanity on earth; more than 50 % of existing cancer drugs is derived from plants [5]. Herbal medicine is a concoction of numerous chemical ingredients, and it exhibits polypharmacological effects to act on multiple pharmacological targets, regulating different biological mechanisms and treating a variety of diseases[8]. Moreover, herbal medicines (HMs) are an important source of drugs. Traditional herbal medicines have been reported to possess significant bioactivities [6]. The herbals that are used in *HUMA* could be the starting point for important anticancer drug resources.

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POSTER ID- 103_Shivran _ICRCS2017
Preparation of 1-Ethyl-3-methylimidazolium tetrafloroborate Doped Lithium Silicate Glasses With Enhance Conductivity by Sol-Gel Process

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Sol-gel science and technology has a potential to make a significant impact in modification of the properties of materials. A series of silica based Li^+ ion doped glasses with composition (89-x) SiO_2-1$CuCl_2$-*x*IL-10Li_2O and (98-y) SiO_2-1$CuCl_2$-1IL-yLi_2O have been synthesized by series of hydrolysis and poly-condensation reactions using acid as a catalyst[1]. Ionic liquid has been dispersed in glassy samples to enhance electrical transport. Ionic liquid (IL) used was 1-ethyl-3-methylimidazolium tetrafluoroborate (EMIM BF_4). These systems were studied for different

structural aspects and properties with varying concentration of Li^{+}, Mg^{+2} ions and ionic liquid. Ionic liquid remains as a separate phase and possibly exhibits only between the glass grains[2]. Glassy nature has been confirmed by X-ray diffraction. FT-IR studies confirm absence of any undesired functional group. Further, differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA) analysis depict thermal events associated with the samples, in addition to ionic liquid confinement in the glass matrix. Electrical conductivity (1-kHz) has been studied as a function of IL as well as Li_2O content. Typically, for x = 1 mol% and y = 25 mol% conductivity is found to be ~10^{-4} $\Omega^{-1}cm^{-1}$ and 10^{-5} $\Omega^{-1}cm^{-1}$ around 37℃ respectively and at 250℃ its 10^{-5} $\Omega^{-1}cm^{-1}$ for both the cases. These values are found to be significantly higher than that of their parent glass composition. DC measurements confirms about ionic nature of the glassy samples. Efforts are further on to investigate conductivity-structure correlation by electron paramagnetic resonance spectroscopy (EPR).

Keyword: Sol-gel science, glasses, Ionic liquid, Catalyst, Glass grains.

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POSTER ID- 104_Thakur _ICRCS2017

Thermal Behaviour of $GdCo_{1-x}Mn_xO_3$ Cobaltates

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Abstract. With the objective of exploring the unknown thermodynamic behavior of $GdCo_{1-x}Mn_xO_3$ family, we present here an investigation of the temperature-dependent ($10K \leq T \leq 1000K$) thermodynamic properties of $GdCo_{1-x}Mn_xO_3$ (x=0.1 to 0.8). The specific heat of $GdCoO_3$ with Mn doping in the perovskite structure at B-site has been studied by means of a Modified Rigid Ion Model (MRIM). The cohesive energy, specific heat (C), volume thermal expansion (□) and Gruneisen parameter (□) of $GdCo_{1-x}Mn_xO_3$ compounds are also discussed.

POSTER ID- 105_Sarwan _ICRCS2017

Pressure Induced Phase Transition of Semiconducting Alloy $Tl_xGa_{1-x}As$

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Abstract. We have investigated the structural phase transition at different concentrations (x=0, 0.25, 0.5, 0.75, 1 of $Tl_xGa_{1-x}As$ by using interaction potential model (IPM). The IPM consists of Coulomb interaction, three-body interaction (TBI), van der Wall (vdW) interaction and overlap repulsive short range interaction. The volume collapse is also computed for this alloy. We have also investigated the second order elastic constants with composition and at different pressure for the present alloy $Tl_xGa_{1-x}As$. The present approach (IPM) is capable of explaining the Cauchy violation, which cannot explain by two-body potential model. The obtained results are compared with the available experimental and theoretical results.

POSTER ID- 106_Ahmed _ICRCS2017

Heat and Mass Transfer in Vertical Porous Medium Due To Partial Heating

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Abstract: The investigation of heat and mass transfer adjacent to vertical plate subjected to partial heating of plate is carried out. A section of the plate is heated with isothermal temperature T_h and the far away condition is maintained at ambient temperature T_∞.. The vertical plate is maintained at constant concentration Ch as opposed to lowest concentration at far away condition. Finite element method is used and governing equations are converted into simple form of equations using Galerkin approach. The results are discussed in terms of Nusselt and Sherwood numbers at hot surface. Study is carried out with respect to various physical parametrs. The heat and mass transfer rate found to increase with increase in Rayleigh number.

Keywords: Porous medium, conjugate heat transfer, FEM

POSTER ID- 107_Agarwal _ICRCS2017

A Comparative study : Greener vs Conventional synthesis of 4*H*-Pyrimido[2,1-*b*]benzothiazoles via Biginelli reaction

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Abstract:
Multicomponent reactions (MCRs) have been discovered as a powerful method for the synthesis of organic molecules, since the products are formed in a single step from easily available precursors. This strategy has become important in drug designing and discovery in the context of synthesis of biologically active compounds. In the today's scenario, MCRs are influenced by microwave and solvent free conditions as a powerful green alternative over the conventional synthesis. A number of scientific publications have been found in the literature depicting the synthesis of pyrimidobenzothiazoles via one pot multicomponent reaction with structural diversity through conventional and greener pathways using different catalysts, ionic liquids, agar , resins etc. Its importance in pharmaceutical chemistry for the drug development has been justified from the biological findings.

POSTER ID- 108_Meena _ICRCS2017

Biosynthesis of Silver Nanoparticles from (Tea Leaves') for Organic Pollutants Degradation

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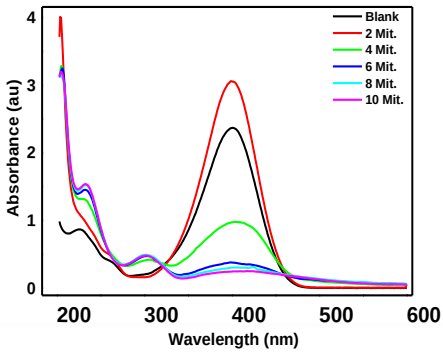
Abstract: Biosynthesis of silver nanoparticles is a simple, cheap and environmentally benign alternative to physical and chemical procedures. Green Synthesis of silver nanoparticles from leaves extracts is more compatible, large scale up and less time consuming process. Tea leaves extract act as a capping agent and reducing agent in the nanoparticles synthesis. This green method is a single step process, economic viability, effective and rapid production of nanoparticles could be used for biomedical and degradation of organic pollutants. The optical properties of reduces silver ions to

nano silver hence, the colour will be change from light pink to green, colour shown. The prepared AgNps were characterized by powder X-ray diffraction (XRD), UV-Visible spectroscopy and Scanning electron microscope (SEM), Fourier transformer Infrared spectroscopy (FTIR). X-ray diffraction pattern confirmed the formation of face centered cubic symmetry. The obtained nanoparticles are in the size range of 20–40 nm and crystallized in face centered cubic symmetry.

Keywords: XRD, FESEM, TEM, Uv-Visible, 4-nitrophenol reduction, ecofriendly, surface plasmon resonance etc.



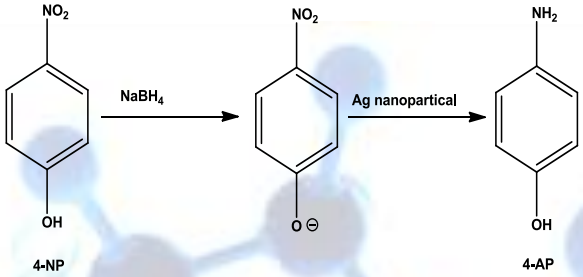


Figure: Catalytic Reduction of 4-Nitrophenol to 4-Aminophenol using biogenic silver nanoparticles derived from Tea leaves extract.

POSTER ID- 109_ Tapdiya_ICRCS2017

Micro Structural Analysis and Magnetic Characteristics of Rare Earth Substituted Cobalt Ferrite

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A series of ultrafine nanoparticles of Gd^{3+} doped Co-ferrites $CoGd_xFe_{2-x}O_4$ (x=0.0, 0.1 and 0.15) were prepared by wet chemical co-precipitation method using nitrates of respective metal ions. Structural and morphology studies were performed using XRD, SEM and FTIR. Indexed XRD patterns confirm the formation of cubic spinel phase. Average crystallite sizes found to be decreases with trivalent rare earth ion substitution. Lattice constant (a) and lattice strain increases with increase in Gd^{3+} concentration due to large ionic radii (0.94nm) of Gd^{3+} replacing Fe^{3+} (0.64nm). The two absorption bands υ_1 and υ_2 are presents in FTIR spectra confirm the formation of spinel ferrites. SEM images show the spherical morphology and uniform growth of nanoparticles. Magnetic studies show that magnetization (Ms), decreases with increase in Gd^{3+} concentration from 60.21 emu/gm to 36.26 emu/gm.

POSTER ID- 110_Shrivastav _ICRCS2017

Multisite Ion-Pair Receptor Technology: A versatile approach for recognition of toxic cationic and anionic species

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Heavy metals and anions are ubiquitous in nature and their presence in small quantities is essential for living systems. However they pose a serious threat to the environment and human health if they are present in excess or scarcity to a permissible limit[1-5]. The removals of these toxic ions are still a great scientific challenge due to their undistinguishable odor and color. Due to the high cost, least selectivity or sensitivity of available technology for removal of toxic ions requires to develop a more sensitive as well as cost-effective technology. Such sensor technologies are sorely needed by the monitoring, ecological, and environmental engineering communities. In this context, designing of a cost-effective but high quality macrocyclic based multisite molecular receptor technologies[6-8] are one of the best choice for the sensing and then removal of two or more toxic cationic and anionic species or both ions[9,10] from environments and water bodies with higher selectivity through allosteric effects wherein binding of one ion markedly influences the binding of the other ion[11,12]. Calix[n]arene scaffolds[13,14] would offer a suitable molecular architecture for novel multisite ion pair receptors, as they provide unique possibilities of assembling arrays of appropriate and complementary binding sites at both hydrophobic upper and hydrophilic lower rim as well as conformational characteristics for simultaneous recognition and extraction of both cationic and anionic species. A series of multisite molecular receptors have been synthesized by incorporating various functionalities into calix[n]arene scaffold either at the upper or lower rim. The simultaneous recognition and extraction studies for these receptors for various hazardous metal ions like Hg^{2+}, As^{3+}, Cr^{3+}, Cs^{2+}, Cd^{2+}, Pb^{2+}, Co^{2+}, Zn^{2+}, Ni^{2+} Mo^{+2} etc. and anions like F^-, Cl^-, Br^-, I^-, ClO_4^-, NO_3^-, AcO^-, HSO_4^- etc. have been completed by using UV-Visible, fluorescence and NMR studies and other spectroscopic techniques.

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POSTER ID- 111_Shakeel _ICRCS2017

Synthesis and Structural Characterization of Transition metal doped MgO: $Mg_{0.94}Mn_{0.01}TM_{0.05}O$ (TM = Co, Ni, Cu)

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In the present work, preparation and characterization of transition metal doped MgO: $Zn_{0.94}Mn_{0.01}TM_{0.05}O$ (*TM* = Co, Ni and Cu) nanoparticles have been reported. Transition metal doped samples of MgO were synthesized by Sol gel auto combustion method. Structural characterisation from XRD and SEM show the formation of single-phase primary particles, nearly of spherical shaped nanocrystallites. The crystallite size was found to be 78.2, 67.02, 78.11 and 64 nm for pure, Co, Cu and Ni doped MgMnO nano particles, respectively. Hence, the average crystallite size increases monotonously from Co to Cu doping.

POSTER ID- 112_Adhikari _ICRCS2017
Corrosion inhibition properties of hedge plants extracts against mild steel in acidic environment
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ABSTRACT: Aqueous extract of two purple hedge plants were studied to investigate their corrosion inhibition properties against mild steel in acidic environment. Gravimetric and electrochemical techniques like electrochemical impedance and potentiodynamic polarization were used to evaluate the corrosion inhibition efficiencies of the plant extracts. These studies have been done at different temperatures and different concentrations which showed that plant extracts acted as an efficient corrosion inhibition properties. That the dissolution properties is activation controlled and plant extracts acted as mixed type inhibitor were shown by EIS and potentiodynamic polarization studies respectively. Adsorption isotherm studies revealed that plant extracts followed Langmuir adsorption isotherm and corresponding thermodynamic parameters were calculated from adsorption equilibrium constants. To visualize the effect of PHPL on mild steel coupon under corrosive environment surface analysis was carried out using Scanning Electron Microscope (SEM) and Atomic Force Microscope (AFM) studies to establish the corrosion inhibitive property of this extract in 1M HCl solution.

POSTER ID- 113_Tiwari _ICRCS2017
Polythene glycol (PEG) as a Reusable Solvent System for The Synthesis of 1,3,5-triazines via Aerobic Oxidative Tandem Cyclization of Benzylamines and N-substituted Benzylamines with Amidines under Transition Metal-Free Conditions

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A green and highly efficient protocol for the synthesis of 1,3,5-triazines from benzylamines and N-substituted benzylamines with amidines in PEG-600 has been developed. This protocol is transition-metal free, phosphine ligand free and uses inexpensive, easily available molecular oxygen (O2) as an oxidant. A series of 1,3,5-triazines derivatives were synthesized in good to excellent yields in a shorter reaction time. The ease of the product separation and reusability of PEG-600 makes it more environmentally benign and economically affordable for gram-scale synthesis.

POSTER ID- 114_Tapdiya _ICRCS2017
Micro Structural Analysis and Magnetic Characteristics of Rare Earth Substituted Cobalt Ferrite
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A series of ultrafine nanoparticles of Gd^{3+} doped Co-ferrites $CoGd_xFe_{2-x}O_4$ (x=0.0, 0.1 and 0.15) were prepared by wet chemical co-precipitation method using nitrates of respective metal ions. Structural and morphology studies were performed using XRD, SEM and FTIR. Indexed XRD patterns confirm the formation of cubic spinel phase. Average crystallite sizes found to be decreases with trivalent rare earth ion substitution. Lattice constant (a) and lattice strain increases with increase in Gd^{3+} concentration due to large ionic radii (0.94nm) of Gd^{3+} replacing Fe^{3+} (0.64nm). The two absorption bands υ_1 and υ_2 are presents in FTIR spectra confirm the formation of spinel ferrites. SEM images show the spherical morphology and uniform growth of nanoparticles. Magnetic studies show that magnetization (Ms), decreases with increase in Gd^{3+} concentration from 60.21 emu/gm to 36.26 emu/gm.

POSTER ID- 115_Verma _ICRCS2017
Green Synthesis, Characterization and Applications of Novel Supramolecular Complex of Cobalt (II)

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Supramolecular chemistry is a multidisciplinary field which impinges on various other disciplines, such as the traditional areas of organic and inorganic chemistry, needed to synthesize the precursors for a supramolecule, physical chemistry, to understand the properties of supramolecular systems and computational modelling to understand complex supramolecular behaviour. In the present research investigations on novel Co(II)-amide supramolecular complexes by means of IR, NMR, ESR and magnetic susceptibility measurement have been carried to find applications in various fields of engineering and technology. IR spectral data revealed that $\nu_{(C=O)}$ and $\nu_{(C-O)}$ stretching frequencies in the region 1700-1720 cm^{-1} and 1420-1400 cm^{-1} observed for free ligands and assigned to asymmetric and symmetric modes respectively are shifted in the complexes. The IR bands due to amide $\nu_{(N-H)}$ mode observed at 3353-3163 cm^{-1} for the free ligands are shifted to higher frequencies indicating non-participation of N of amide group in coordination. Amide-I bands due to $\nu_{(C=O)}$ shift negatively opposite to that of $\nu_{(N-H)}$ in the complexes suggesting carbonyl oxygen coordination. Electronic spectral data coupled with fluorescence studies provides information about the transition states is also presented. The d-d and CT bands of the complexes are found to play important roles in the DNA cleavage and photolytic reactions.

POSTER ID- 116_ Pandey_ICRCS2017
Aerobic Degradation of Petroleum Hydrocarbons in Soil by Microbial Consortium
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ABSTRACT: The biodegradation of petroleum and its components in the environment is a complex process that's quantitative and qualitative features depends on stimulating biodegradative activities by creating favourable environmental conditions, the types of leading petroleum hydrocarbon in polluted matrix and bioavailavility of the contaminants to microflora. Abundant microorganisms have been identified for their ability to metabolise these petroleum hydrocarbons partially or completely. Mixed cultures of hydrocarbon degrading microbes prove to be better in degradation of

these petroleum hydrocarbons aerobically. The present review was focus on aerobic degradation process of a variety of components of petroleum by microbial consortia.

POSTER ID- 117_Ganwanil _ICRCS2017

The oxidation state of iron and manganese in polymetallic nodules from the Central Indian Ocean Basin

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The study of oxidation states of iron (Fe) and manganese (Mn) in polymetallic nodules were carried out by means of 57Fe Mössbauer and X-ray photoelectron spectroscopic techniques. The polymetallic nodules were collected from different locations of the Central Indian Ocean Basin (CIOB). Spectroscopic analyses allowed the differentiation of these nodules from their origins: "hydrogenous" or "hydrothermal". The valence state of iron (Fe) and manganese (Mn) were obtained from XPS studies. Despite of variation in chemical composition and location, the Mössbauer spectra and parameters are almost identical. The isomer shift (IS) value is centered about 0.3 mms-1 and quadrupole splitting (QS) value is centered about 0.5 mms-1, which is characteristic of paramagnetic high spin Fe3+ state. The binding energies of Mn 2p3/2 (ranging from 641.5 to 642.4 ev), Fe 2p3/2 (ranging from 711.0 to 711.8 ev) and O 1s (ranging from 530.2 to 530.9 ev) from XPS reveal that most of manganese is in Mn4+ and iron is in Fe3+ state. The Mössbauer and XPS results are corroborating to each other. Further the present study also indicate that these polymetallic nodules have been formed by the hydrogenetic process where metals were supplied from the water column.

Keywords: "Mössbauer spectroscopy, X-ray photoelectron spectroscopy, Polymetallic nodules, Central Indian Ocean"

References:

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POSTER ID- 118_Joshi _ICRCS2017

1,3,5-triazine Derivatives As Anticancer Agent : A Molecular Docking Study

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Abstract:
Studies on the various types of anticancer drugs are one of the important fields of medical research. 1,3,5-triazine is one of the most interesting chemical core structures for biological activities such as antimicrobial, antifungal, anti-protozoal and mostly many triazine derivatives have been developed as anti cancer drugs (for lungs, breast and ovarian cancer etc). The hydrophobic substitutions on 1,3,5-triazine explains the inhibition of Hsp90 chaperoning machinery and anti-proliferative activity against H1975 (lungs cancer cell line) was reported by Taeho Lee and Young Ho Seo. Prompted

from these, we have designed five sets of 1,3,5–triazine compounds, further each set having four derivatives with different substitutions. The molecular docking studies have been carried out with Heat Shock Protein 90 (Hsp90). Hsp90 is a molecular chaperone that plays an important role in regulating the maturation and stabilization of many cancer causing proteins. The most active structure can be predicted based on the binding energy and mode of interactions of compounds with the help of molecular modelling software like Blaster, Schrodinger (Glide, GOLD), Auto-Dock, Auto-Dock Vina etc. From the five sets of compound, Set-1 is showing better activity due to presence of π-π interaction between hydrophobic substituted part of triazine and phenylalanine 138 (Phe138) present in the hydrophobic region of Hsp90.

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POSTER ID- 119_Bhardwaj _ICRCS2017
Electronic Study of CeHg Intermetallic Compound

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Abstract
Structural and electronic study of binary intermetallic compound is performed by means of first principle calculation. The results for the standard PBE are presented by CRYSTAL09 computer code. This intermetallic is stable in CsCl-type B2 structure at normal conditions. Ground state properties such as lattice constant, bulk modulus and pressure derivative of bulk modulus are calculated. The electronic properties such as band structure and density of states (DOS) reveal that no band gap leads to metallic character of CeHg.

Keywords: Intermetallic, Electronic property, Band structure, Density of states.

POSTER ID- 120_Kumar _ICRCS2017
Conducting Polymer Poly(3-Methylthiophene) Active Material Used As Electrode In Electrochemical Supercapacitors With Polymer Based Electrolytes

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The conducting polymer poly(3-methylthiophene) active electrode material based pseudocapacitors with ion conducting polymer based electrolytes (phosphoric acid and ammonium salt incorporated), and lithium based organic liquid electrolyte were designed. Their performance studies were carried out using cyclic voltammetric measurements. The polymer gel electrolytes were used to fabricate pseudocapacitor comprised of poly(vinylidene fluoride)-co-hexafluoropropene (PVdF-HFP)-ammonium thiocynate (NH4SCN), aqueous gel electrolyte comprised of poly vinyl alcohol (PVA)–phosphoric acid (H3PO4) and organic liquid electrolyte of lithium salt comprised of 1 molar lithium perchlorate (1.0M LiClO4) in the organic solvent proplylene carbonate (PC), which generally used as plasticizer in polymer based electrolytes. The characterization studies of the redox pseudocapacitor cells based on conducting polymer poly(3-methylthiophene) based electrode

prepared by two different techniques 1) by constant current and 2) constant voltage electrodeposition of electrode materials impedance analysis were presented.

POSTER ID- 121_Kaur _ICRCS2017

Electrochemical Degradation of Congo Red Dye From Aqueous Solution Under Amperostatic Conditions

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ABSTRACT:
Removal of Congo Red dye has been carried out at graphite anode and platinum cathode under amperostatic conditions by electrolyzing 100 mL aqueous solution of dye containing 0.5 g of supporting electrolyte (KCl) for two hours. The potential across the electrodes has been adjusted so that a current of 0.30 mA (which is very small as compare to that reported in literature) passed through the cell. The solution has been stirred efficiently with the help of magnetic stirrer. After different intervals of electrolysis (i.e., 15, 30, 45, 60, 90 and 120 minutes) 5 mL of solution has been drawn and subjected to UV- Visible spectrophotometer in order to determine the amount of dye left in solution after electrolysis. The batch electrochemical studies have been performed to evaluate the effect of operating parameters such as current density (0.602 – 2.406 mA cm^{-2}), initial dye concentrations
(50 – 150 mg L^{-1}), amount of supporting electrolyte (0.1 – 0.9 g) and nature of supporting electrolyte. Fourier transform infrared spectroscopy and mass spectra show that Congo red dye has been degraded to small molecules. It has been concluded from the data that electrochemical degradation of Congo red by using low-cost graphite electrodes proves to be an efficient method at an optimum current density of 1.805 mA cm^{-2}.

Keywords: Electrochemical oxidation, Congo Red dye, Graphite anode, Wastewater treatment.

POSTER ID- 122_Singh _ICRCS2017

Analysis Of Optical And Electronic Properties Of Various Structures Of Cu-Doped CrC Using DFT

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ABSTRACT
The structural, optical and electronic properties of orthorhombic and fcc structures of Cu-doped CrC were compared by orthorhombic Cr7C3 and fcc Cr23C6 structures of CrC using density functional theory (DFT) in simulation software MedeA. Dissimilarities in band structure, density of states and electron density are studied for contrasting the electronic properties. An absorption and transmission spectra for photon energy shows improvement after doping of Cu with orthorhombic and fcc structures of CrC

POSTER ID- 123_Gupta _ICRCS2017

Investigation of Photoluminiscence and Dielectric Properties of Pure and Fe Doped Nickel Oxide Nanoparticles

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Abstract: The nanocrystallites of pure and Fe doped Nickel Oxide (NiO) were synthesized by the cost effective co-precipitation method using nickel nitrate as the initial precursor. The synthesized nickel oxide nanoparticles were characterized by X-Ray Diffraction (XRD), Photoluminiscence Spectroscopy (PL), LCR meter. The crystallite size of synthesized pure Nickel Oxide nanoparticles obtained by XRD using Debye Scherer's formula was found to be 21.8nm and the size decreases on increasing the dopant concentration. The optical properties were analyzed by PL and dielectric ones by using LCR meter.

Keywords: Co-precipitation, XRD, PL , dielectric properties..

POSTER ID- 124_Palla _ICRCS2017

Double Diffusive Convection in a Porous Medium due to Partial Heating at Bottom of Vertical Plate

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ABSTRACT: Double diffusion in a porous medium adjacent to vertical plate due to partial heating is the subject of study for current article. The porous medium is assumed occupy large area along the x-coordinate. The bottom half of vertical plate is heated with isothermal temperature with far away conditions in x-direction being maintained at ambient temperature. The vertical plate is constant concentration which is expected to diffuse into porous medium due to lower concentration at far away condition. The results indicate that the heat transfer as well as mass transfer is affected due to partial heating at bottom of the plate. The heat transfer behavior is particularly different for current problem as compared to the case of whole wall heating.
Keywords: Double Diffusion**,** Vertical Plate, Porous Medium

POSTER ID- 125_Fahimuddin _ICRCS2017

Effect of partial heating at mid of vertical plate adjacent to porous medium.

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ABSTRACT
Heat and mass transfer in porous medium due to heating of vertical plate at mid-section is analyzed for various physical parameters. The heat and mass transfer in porous medium is modeled with the help of momentum, energy and concentration equations in terms of non-dimensional partial differential equations. The partial differential equations are converted into simpler form of algebraic equations with the help of finite element method. A computer code is developed to assemble the matrix form of algebraic equations into global matrices and then to solve them in an iterative manner to obtain the temperature, concentration and streamline distribution inside the porous medium. It is found that the heat transfer behavior of porous medium heated at middle section is considerably different from other cases.
Keywords: Heat mass transfer**,** Vertical Plate, Porous Medium, Mid-section Heating

POSTER ID- 126_Khaleed _ICRCS2017

Heat and Mass Transfer in a Porous Medium Due to Upper Half Heating of Vertical Plate

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ABSTRACT
The current research is dedicated to understand the heat and mass transfer behavior inside a porous region fixed to a vertical plate. The boundary conditions are applied in such a way that the upper half of the vertical plate is heated with isothermal temperature and right side vertical edge of porous medium is maintained at lower temperature. Similarly, the vertical plate has higher concentration and right vertical edge is maintained at lower concentration. The diffusion of heat and mass due into the porous medium is studied with respect to physical parameters such as buoyancy ratio etc. The results are discussed in terms of the isotherms, iso-concentration and streamline distribution inside the porous region. It is found that the Nusselt number increases with increase in buoyancy ratio.
Keywords: Heat mass transfer**,** Vertical Plate, Porous Medium

POSTER ID- 127_Khaleed _ICRCS2017

Heat Transfer in Porous Annulus: Effect of Aspect ratio

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ABSTRACT
This article discusses the investigation of heat transfer in a porous annulus. The porous medium is assumed to be placed between the inner radius r_i and outer radius r_o of vertical annulus. The boundary conditions are maintained in such a way that the outer surface of annulus is heated to hot isothermal temperature T_h and inner radius is maintained at cool temperature T_c. The momentum and energy equations are solved to iteratively to get the solution variables. The results are discussed with respect to aspect ratio which is the ratio of height to width of porous medium fixed in annulus. The aspect ratio is found to affect the heat transfer behavior substantially.
Keywords: Porous medium, Annulus, Aspect ratio

POSTER ID- 128_Faimuddin _ICRCS2017

Influence of Radius Ratio on Heat Transfer in Porous Annulus

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ABSTRACT:

Porous medium has been studied extensively for many years but still the field offers many problems for new generation of researchers. The current article is aimed to investigate one such problem that is influence of radius ratio on the heat transfer behavior in a porous medium fixed in annular cylinder. This article is particularly focused on effect of radius ratio which is the ratio of width of porous medium to the inner radius of annuls. The outer surface of annulus is maintained at hot isothermal temperature whereas the inner radius is maintained at cold isothermal temperature. Results are discussed in terms of isotherms and Nusselt number. It is found that the radius ratio affects the heat transfer behavior substantially for problem under consideration.
Keywords: Porous medium**,** Annulus, Radius ratio

POSTER ID- 129_Faimuddin _ICRCS2017
Soliton beam scattering from ZnO Nanostructure film deposited on Silica Substrate using Inverse Scattering Transform Method

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Abstract:
In the present paper, the problem of Soliton beam scattering at an interface of ZnO nanostructure and Silica substrate has been discussed. Here both the mediums are nonlinear and parameters of ZnO film are obtained by Maxwell-Garnet effective medium theory. The silica substrate is taken as monomode optical fiber. Scattering of incident beam is controlled by two factors. One is Power of incident beam and second is angle of incidence. Effects of both the factors are well discussed by using soliton perturbation theory based on the inverse scattering technique. Proble is solved for light solitons which is the adiabatic shape of the soliton solution and nonlinearity is considered as kerr law nonlinearity.
Key Words: ZnO Nanostructures, Kerr Nonlinearity, light solitons, Perturbation theory.

POSTER ID- 130_Aseri _ICRCS2017
Assessment of heavy metals in sewage water of different areas around Bikaner city

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Abstract
Ever increasing population, urbanization and industrialization have led to generation and indiscriminate discharge of large volume of water from domestic, commercial, industrial uses from which natural water sources become unfit for human usage. The use of sewage water for irrigation is a matter of major concern due to the presence of toxic metals and other pollutants, which ultimately contaminate the soil. Unscientific management practices of pollutants lead to ecological imbalance. The use of sewage for irrigation is a common practice in majority of peri-urbans. The presence of heavy metals in sewage water is one of the main causes of water and soil pollution. The aim of the present study was to investigate the ammount of Cd, Cr , Ni, As and Pb in sewage water. Chandmal baag, Sujandesar, Kadari colony (Shriramsar), Kocharo ka bhaththa (Gangashahar-Bhinasar) and Gharsisar areas are the biggest vegetable producing area in Bikaner city and they use sewage water for irrigation. Various physiological disorders are present in plants/crops growing here, which might be due to the use of sewage water. For analyzing the amount of heavy metals 28 samples were collected. The results show that the heavy metal content in sewage water samples have excess in range than permissible value.

Key words : **Heavy metals, sewage water, toxicity, health, contamination**

POSTER ID- 131_Mandal _ICRCS2017
AC Impedance Spectroscopy of NASICON type $Na_3Fe_2(PO_4)_3$ Ceramic
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Super ionic conductor (e.g.; $A_3M_2(XO_4)_3$, A=Li, Na) have received attention in applied research due to their interesting electrochemical property and inherently high conductivity [1]. However, structural requirements and compatibility for fast ion transport is stringent and it plays a crucial role. In $A_3M_2(XO_4)_3$, a suitable cage formation in the crystal framework due to corner sharing arrangement of XO_4 tetrahedra and MO_6 octahedra creates voids that acts as host/guest site for cation transport.
In this work, we report Nasicon structure $Na_3Fe_2(PO_4)_3$ (NFP) prepared via sol-gel route mediated by citric acid. Structural analysis confirmed that NFP sample belongs to monoclinic crystal structure having Cc space group (S. G. No 9) with lattice parameters, a=15.106 Å, b=8.722 Å, c=8.775 Å and β=124.96°. Electrical properties of the prepared sample have been studied by AC impedance spectroscopy technique. The AC conductivity results provided typical signature of ionically conducting system.

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POSTER ID- 132_ Tiwari_ICRCS2017
Enhancement in Light Harvesting ability of Photoactive Layer P3HT: PCBM using CuO Nanoparticles

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In this paper, we have synthesized CuO nanoparticles via precipitation method and incorporated CuO nanoparticles in the P3HT-poly (3-hexyl) thiophene: PCBM-[6, 6]-phenyl-C61-butyric acid methyl ester heterogeneous blend. The ratio of P3HT to CuO in the blend was varied, while maintaining the fixed ratio of PCBM .The UV-visible absorption spectra of P3HT: PCBM photoactive layer containing different weight percentages of CuO nanoparticles showed a clear enhancement in the photo absorption of the active layer. The absorption band starts from 310 nm to 750 nm for P3HT: CuO:PCBM (0.5:0.5:1). This shows that incorporation of CuO nanoparticles leads to larger absorption band. In addition, the X-ray diffraction (XRD) shows improvement in P3HT crystallinity and the better formation of CuO nanostructures.

POSTER ID- 133_Madan _ICRCS2017
GREEN & SUSTAINABLE NANOCATALYSED SYNTHETIC ROUTE FOR AN EXPLORATION OF KNOEVENAGEL CONDENSATION

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Abstract
Indole-3-carbaldehyde has a wide variety of applications, as a versatile synthon in organic chemistry, also found to be remarkably active as 12- & 15- lipoxygenase inhibitors, anti-tumour, antimicrobial and anti-inflammatory agents. In this work, we report the synthesis of targeted knoevenagel condensed products of indole-3-carbaledehydes **(1a-f)** and active methylene containing moieties 3-

methyl-1-phenyl-5-pyrazolone **(A)** and cyclohexane-1, 3-dione **(B)** in the presence of ZnO nanoparticles by using solvent free grindstone method and compared with traditional refluxing method. Grindstone method for preparation of libraries of these knoevenagel condensed products lead to many advantages in terms of excellent yields, short reaction time, high reaction rate and also attracts the attention from the environment point of view as well as economic perspective. All the synthesized compounds have been characterized by their IR, ^{1}H NMR, and Q-TOF mass spectral data and elemental analyses.

POSTER ID- 134_ Chaoudhary_ICRCS2017

Physicochemical and Quantum Mechanical Studies of Potential Antimicrobial Diorganotin (IV)phenoxyacetohydroxamates as Bioactive Molecules

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Abstract. The organotin(IV) complexes have received immense research interest over theyears due to their interesting structural features and a broad spectrum of potential applications in agriculture, medicine, industry and material science. Hydroxamic acids an important class of organic bio-ligands act as excellent chelating agents possessing high physiological and biochemical activity. The new diorganotin(IV) complexes of composition [$Me_2Sn(C_6H_5OCH_2CONHO)_2$] and [n-$Bu_2Sn(C_6H_5OCH_2CONHO)_2$] have been synthesized by the reactions of n-Bu_2SnCl_2 and Me_2SnCl_2 with potassium phenoxyacetohydroxamates in (1:2) molar ratio in MeOH + C_6H_6 solvent medium and characterized by physicochemical and spectroscopic methods (I.R, ^{1}HNMR and mass spectrometry). The optimized geometry of complexes has been visualized by DFT in SIESTA code using quantum mechanical calculations. The newly synthesized complexes assayed for their *In vitro* antimicrobial activity against pathogenic bacteria viz. *Salmonella typhi*, *E. coli*, *Bacillus cereus*, *Staphylococcus aureus* and fungi *Aspergillus niger* and *Alternaria alternata* have exhibited appreciable antimicrobial activity comparable to the respective standard Chloramphenicol and Nystatin drugs.

POSTER ID- 135_Yadav _ICRCS2017

α-L-Rhamnosidase from *Aspergillus terreus* MTCC - 3374 use as debittering agent in orange fruit Juice Industry

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Abstract

α-L- rhamnosidase is an important biotechnologically enzymes that dermnosylated terminal α-L-rhamnose from a variety of natural products. The de-rhamnosylated products are rare compound of pharmaceutical importance. In these studies, an indigenous strain of *Aspergillus terreus* MTCC-3374 has shown to be secrete α-L- rhamnosidase in liquid culture growth medium. The effects of different inducers on the production of α-L- rhamnosidase from *A. terreus* MTCC-3374 were investigated. Additions of solid citrus wastes have been found to increases the production of α-L-rhamnosidase. Addition of 20% (w/v) citrus solid waste and 3.5 % naringin enhance the activity of α-L- rhamnosidase from A. flavipus. The Km, pH and temperature optima of this enzyme using p-nitrophenyl α-L-rhamnopyranoside as substrate, has been found to be 1.5mM, 3.5 and 55°C,

respectively. The enzyme hydrolyses naringin present in orange juice and hence it is suitable for debittering of citrus fruit juices.

POSTER ID- 136_Zaman _ICRCS2017

Synthesis and Characterization of Spin-coated Ternary Cu_2SnS_3 Thin Films

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Ternary compound Cu_2SnS_3 (CTS) thin films were fabricated by using sol-gel method. The films were grown at 220 °C and vacuum annealed at elevated temperatures, i.e. 300 °C and 350°C. The effect of annealing temperature on the structural, morphological and optical properties of the thin films was studied. The XRD results show that these samples crystallize in tetragonal structure with average crystallite size below 5 nm. The SEM studies reveal the uniform morphology of films. Optical analysis displays high absorption coefficient with optimum energy band gap, which indicates that the CTS thin films could be a promising absorber material for the high efficiency thin film solar cells.

POSTER ID- 137_Dubey _ICRCS2017

Synthesis, Characterization and Anti-inflammatory activity of benzo[b]thiophene based Hydroxytriazenes derivatives.

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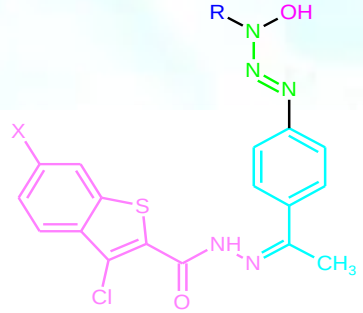
Abstract

Twelve benzo[b]thiophene derivatives containing hydroxytriazene moiety have been designed, synthesized and tested as anti-inflammatory agents. Inflammation inhibiting actions for the designed compounds have been predicted by PASS[1,2] (**Prediction of Activity Spectra for Substances**) with probability "to be active" Pa ranged from 0.73 to 0.92, which indicating their excellent probability to have anti-inflammatory activity. Anti-inflammatory activity of the synthesized compounds has been confirmed by the experiment. The most potent effect has been observed for all the n-propane derivatives. 3-chloro-*N*'-[1-{4-[3-hydroxy-3-propyltriaz-1-en-1-yl]phenyl}ethylidene]-1-benzothiophene-2-carbohydrazide was the most potent derivative of the series, showing percent inhibition of edema volume 77.24% and 82.07% at 2 and 4 hour respectively. For the anti-inflammatory activity acute inflammation model of carrageenan induced rat paw edema method has been used at doses of 100 mg kg^{-1}.



X= H, F, Cl

R= -CH_3, -C_2H_5, iso-C_3H_7, n-C_3H_7

Figure: Structure of synthesized compounds

POSTER ID- 138_Paliwal _ICRCS2017

Facile Hydrothermal Synthesis and Characterization of Novel $CoNi_2O_4$ Hexa-nanocones and $CoNi_2O_4$-Graphene Heteronanocomposites

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$CoNi_2O_4$ is a promising novel material which possess high specific surface area, excellent electronic conductivity, short diffusion path for ions and exceptional electrochemical activity. Therefore it is recognized as a very good electrode material for various applications such as energy storage, catalysis and sensors. In this context, we have synthesized very uniform $CoNi_2O_4$ hexa-nanocones and $CoNi_2O_4$-graphene heteronanocomposites with unique pore structure, using a simple precipitation followed by hydrothermal treatment method. The physiochemical properties of as synthesized materials have been investigated by PXRD, HRSEM, HRTEM and Raman analysis. The PXRD and HRSEM results shows that the crystallite size of the materials are clearly in the nanometre range and the uniform hexa-nanocone structure is composed of layer-by-layer self-assembly of $CoNi_2O_4$ porous nanosheets.

Keywords: $CoNi_2O_4$, $CoNi_2O_4$-graphene composite, hydrothermal synthesis, hexa-nanocone

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POSTER ID- 139_Jain _ICRCS2017

Management Of Temple Flower Waste By Vermicomposting And Its Effect On plant growth

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Abstract

Solid waste management is one of the major challenges faced by many countries around the globe. Inadequate collection, recycling or treatment and uncontrolled disposal of waste in dumps leads to, health hazards and environmental pollution .In India, at most of the religious places, a huge tonnage of solid waste is generated largely during functions, worships, ceremonies and festivals. The quantity of flower waste generated by few major temples of Jaipur city was assessed . In the present study different proportions of mixture of cattle dung and floral wastes were taken and vermicomposting process was done using *Eisenia foetida* earth worm species.The control(soil) took longer time to decompose while the mixtures of floral waste and cow dung decomposed in less time . The bioconversion ratio i.e., waste into vermicompost was found to be high in 50:50 and 60:40 proportion. After the vermicomposting process analysis of various physical and chemical parameters was done. It was found that 25◦C temperature, 8.0 pH, 1-2mm particle size , 80% moisture content, black colour, odourless,0.88 bulk density were optimum parameters for the composting process. Vermicomposting resulted in lowering of EC, C : N ratio, C : P ratio and increase in nitrogen, phosphorus , potassium ,. Calcium , Magnesium and Sulfur. In the pot culture

studies of plants (using prepared floral waste vermicompost as fertilizer) various growth parameters showed good enhancement of growth .The results indicate that integrated effect of all the nutrients present in flower waste vermicompost results in the increased growth and yield.

Keywords* : *Temple Floral Waste, Vermicomposting, growth parameters

POSTER ID- 140_Sharma _ICRCS2017

Synthesis and Complexation Studies of PTA included Schiff bases

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1,3,5-triaza-7-phosphaadamantine (PTA) included 4-(1,3,5-triaza-7-phosphaadamantine)benzaldehyde hydrochloride(1) was synthesized from a reaction of PTA with p-chlorobenzaldehyde. Compound 1 was then reacted with series of amines to form resulting water soluble Schiff bases : 2-[{(4-(1,3,5-triaza-7-phosphaadamantane)phenyl)methylene}amino]phenol hydrochloride (2); Benzyl[4-(1,3,5-triaza-7-phosphaadamantane)benzylidene]amine hydrochloride (3); [4-(1,3,5-triaza-7-phosphaadamantane)benzylidene]phenylamine hydrochloride (4); N^1,N^3-Bis[{4-(1,3,5-triaza-7-phosphaadamantane)phenyl}]-1,3-diaminopropane hydrochloride (5); N^1,N^5-Bis[{4-(1,3,5-triaza-7-phosphaadamantane)phenyl}]-2-methyl-1,5-diaminopentane hydrochloride (6); N^1,N^4-Bis[{4-(1,3,5-triaza-7-phosphaadamantane)phenyl}]-1,4-diaminobutane hydrochloride (7). These schiff bases were characterized by H^1 NMR, P^{31} NMR, elemental analysis and IR to reveal structural arrangements. Complexation behaviour of all Schiff bases were explored by reacting them with $CoCl_2.6H_2O$.

POSTER ID- 141_Rahman _ICRCS2017

Optical Properties of Titanium-di-oxide (TiO_2) Prepared by Hydrothermal Method

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Abstract

TiO_2 has received much attention as an n-type semiconductor for optoelectronic devices, such as electronic device fabrication, photo catalysis, photovoltaics, energy storage, gas sensing, Dye Sensitized Solar Cell etc [1]. Till now numerous synthetic strategies liken sol−gel, hydrothermal, solvothermal, electrochemical anodization, electrodeposition etc. have been employed for the formation of TiO_2-based. Recently, research on titanate and its derived TiO_2 nanostructures with large specific surface area have received great attention due to their enhanced efficiency in photocatalysis [2], DSSC etc.

Here, in this communication TiO_2 has been prepared by hydrothermal method at 180˚C. In this work we have shown the changes in optical properties with sintering temperature. The morphological information of the prepared materials has been obtained from Field emission scanning electron microscopy (FESEM). The prepared samples have been characterized by UV-Vis spectrophotometer to know the band gap of the material in the range 200 ─ 800 nm. The vibrational bands present in the material have been identified from the Fourier transform infrared (FTIR) spectroscopy. The photoluminescence (PL) spectra of the prepared samples are recorded at room temperature in the range of 400 ― 700 nm. The main scope of this work is the use of this material in low cost photocatalytic technology.

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POSTER ID- 142_Yousuf _ICRCS2017

Mechanical and Thermodynamic Properties of New Zr_2NiAl Heusler Alloy

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Using the first-principles plane-wave full potential method within the generalized gradient approximation framework, we have investigated the mechanical and thermodynamic properties of new simulated Zr2-based Heusler alloys. Calculation of the elastic constants allows us to answer more important question of mechanical stability and applicability of a given crystal structure. The Reuss (R), Voigt (V), and Hill (H) average values of the Young modulus (E), the shear modulus (G), and the Poisson ratio (ν) are determined and define the greater extent of strength of material with better ductile nature. Using quasi-harmonic Debye model, the effects of pressure and temperature on thermal expansion coefficient, Debye temperature and heat capacity have also been investigated and can classify the compound among the hard materials grace to its high Debye temperature.

POSTER ID- 143_Sharma _ICRCS2017

Ionic liquid assisted convenient one-pot synthesis of structurally diverse dihydrochromenopyrimidine-2-thiones, dihydopyrimidopyrimidine-2-thiones and dihydroarylpyrimidine-2-thiones derivatives

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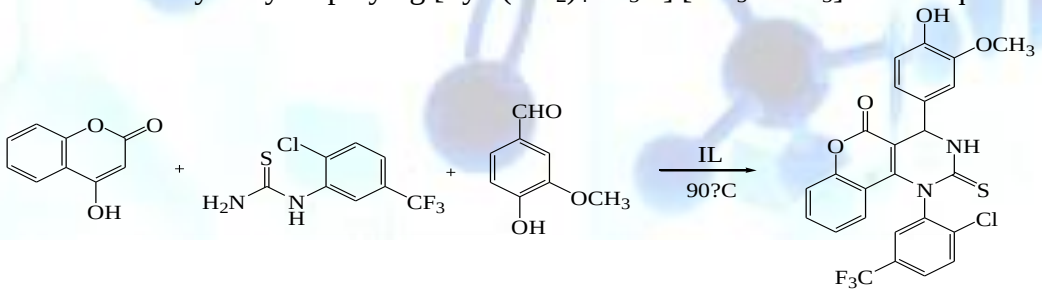
Abstract

Structurally diverse dihydrochromenopyrimidine-2-thiones, Dihydopyrimido-pyrimidine-2-thiones and dihydroarylpyrimidine-2-thiones derivatives have been synthesized by one-pot three-component reaction of phenylthiourea, 4-hydroxycoumarin/ 1,3-dimethylbarbituric acid/ ethyl acetoacetate and aromatic aldehyde by employing $[PyN(CH_2)_4SO_3H]$ $[CH_3PhSO_3]$ ionic liquid as catalyst.



Key words. Dihydropyrimidine (DHPM), heterocycles and Iionic liquid.

POSTER ID- 144_Gangwar_ICRCS2017

Study of Electronic & Optical Properties of ZnO & La Doped ZnO Using DFT In MedeA Software.

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ABSTRACT
The energy band structure and optical spectra of ZnO and La doped ZnO with different La contents are computed with Density Functional Theory using MedeA®-VASP. It was observed that the calculations of energy band structure give a direct band gap of 0.87eV for ZnO, 0.95eV for 3% La doped ZnO and 1.10eV for 6% La doped ZnO which tends to be increasing by La doping. Furthermore, results are computed of optical spectra which gives absorption index, conductivity, dielectric function, reflectivity, refractive index, respectively. The optoelectronic properties of various devices can be controlled as the conductivity is decreasing due to doping of different La contents in ZnO.

POSTER ID- 145_Thakur _ICRCS2017
Removal of Hazardous Rhodamine B Dye by Using Chemically Activated Low Cost Adsorbent: Pine Cone Charcoal

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Water, the main elixir of life, is being contaminated with various toxic pollutants in a gradual way. Many industries, especially the textile industry consume a major share of fresh water for processing, washing and dyeing of products and afterwards, this wastewater containing toxic dyes has been discharged directly into water system. Most of the synthetic dyes are non-biodegradable and even Carcinogenic in nature. Rhodamine B dye is widely used in textile, cotton, paper and food industry. This dye cause many health related problems including, irritation, redness and pain in eyes and respiratory problems. So the present investigation revealed a potential use of Pine cone charcoal (PCC) for the removal of hazardous Rhodamine B dye from aqueous solution by using adsorption technique. The adsorbent has been characterized with the help of FT-IR, SEM, EDS and BET analysis. The adsorption studies have been carried out at different temperatures, adsorbent dose, dye concentrations and pH. The experimental data has been analyzed by Langmuir, Freundlich and Temkin adsorption isotherms and data fitted well for all these models. Thermodynamic parameters, i.e. ΔH, ΔS and ΔG have also been evaluated. 99% Rhodamine B dye has been removed by using PCC, which shows that this adsorbent can be used as highly effective and potential adsorbent for the removal of hazardous dyes.

POSTER ID- 146_Kaur _ICRCS2017
Adsorption of Amido black 10B from aqueous solution using natural plant as adsorbent

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Abstract
In the present work calotropis procera leaf powder was studied to assess its capacity for the adsorption of hazardous dye Amido black 10B from aqueous solution. The adsorbent was characterized by scanning electron microscopy and Fourier transformer infrared spectrometer. The influence of various experimental parameters such as contact time, initial dye concentrations, adsorbent dosage, ionic strength, temperature and pH of dye solution was studied. The adsorption equilibrium was represented with Langmuir, Freundlich. Tempkin and Dubinin-Radushkevich isotherms. The maximum adsorption capacity of Amido black 10B onto adsorbent was 19.31 mg g^{-1}. Pseudo second order kinetics was best fitted, with high correlation coefficients. The calculated values of thermodynamic parameters such as ΔH° and ΔS° for uptake of dye were found to be 26.8811 kJ mol^{-1} and 78.5697 J $mol^{-1}K^{-1}$ respectively. Data indicates the endothermic and physical nature of the process.

Keywords: Water remediation, Calotropis procera, Amido black 10B, Characterisation, Environment.

POSTER ID- 147_Ray _ICRCS2017

Chemical Reactivity of Hydrogenated Boron-Lithium Clusters (B20Li4H8): A Theoretical Study

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We present the theoretical investigation based on density functional theory (DFT) of the global chemical reactivity descriptors (GCRD) of lithium doped hydrogenated boron cluster (B20Li4H8) at the B3LYP/6-31+G (d) level of theory. The GCR parameters such as hardness (η), chemical potential (μ), electronegativity (χ), softness (S), electrophilicity index (ω), HOMO and LUMO energies, and binding energies are determined and used to identify the differences in the stability and reactivity of doped boron clusters. Among all the investigated clusters, the high ω of B20 cluster (8.72 eV) signifies the cluster to be a good electrophile. In addition, the larger HOMO-LUMO gap and hardness determines the greater stability and also less reactivity of B20 cluster. We also study the nature of bonding of B20Li4H8 by employing Bader's topological analysis. Further, we observed that the adsorption of hydrogen to the B20Li4 cluster increases the reactivity of the cluster.

POSTER ID- 148_Vandana _ICRCS2017

The Effect Of Paracetamol On 5-Fluorouracil And Bovine Serum Albumin Interaction: A Biophysical Study

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Serum Albumin is a major carrier protein and its binding with drugs is important to examine to see the change in pharmacokinetic properties due to interaction amongst drugs [1]. In the present study we attempted to understand the relevant drug-drug interaction (DDI) between two common drugs *viz*, paracetamol, an anti-inflammatory and fluorouracil, an anti-cancer drug. *In-vitro* spectroscopic methods *viz*., fluorescence quenching, UV-VIS and Circular Dichroism (CD) have been employed for the free drugs, Bovine Serum Albumin (BSA) protein and the drug-protein complexes. The binding parameters and quenching constants have been determined for BSA-paracetamol and BSA-5-FU complex according to literature models [2–5]. It is also predicted from the quenching studies that BSA-FU is a stronger complex than BSA-Paracetamol. On the other hand paracetamol can alter binding affinity of 5-FU towards BSA. Hence it becomes clear that although the drugs could be administered simultaneously but they influence each other's binding with protein in a concentration dependent fashion. Further these results also show that availability of free 5-FU in blood increased in presence of paracetamol [1,6].

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POSTER ID- 149_Sinha _ICRCS2017

Demonstrating a green emitting Y_4MoO_9: Er^{3+}/Yb^{3+} upconversion phosphor for optical thermometry and optical heating

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The infrared to green upconversion emission in tetragonal phase of Y_4MoO_9: Er^{3+}/Yb^{3+} phosphor via co-preicipitation method were explored. The 980 nm laser light excited upconversion study along with its dependence on input pump power and external temperature were investigated. The temperature dependent fluorescence intensity ratio of 530 nm and 552 nm emission bands originated from two thermally coupled $^2H_{11/2}\rightarrow{}^4I_{15/2}$ and $^4S_{3//2}\rightarrow{}^4I_{15/2}$ transitions of Er^{3+} ions were measured in the 300-480 K temperature range. The maximum temperature sensitivity was derived as 0.013 K^{-1} at 380 K, which is among the highest measured sensitivities reported so far. Moreover, the samples were enable to act as an optical heater by converting NIR light into heat. The result indicates that present material has potential applications in optical temperature sensors and optical heaters for photothermal therapy.

POSTER ID- 150_Singh _ICRCS2017

Synthesis and Photoluminescence Properties of $CaTiO_3$:Dy^{3+} Perovskite Nanophosphors for Lighting Applications

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Abstract: A series of Dy^{3+} ions activated $CaTiO_3$ perovskite downconverting nanophosphors were successfully synthesized by solid state reaction method for the demonstration on development of solid state lighting devices. In order to investigate the structural, morphological and optical properties, the prepared $CaTiO_3$:Dy^{3+} nanophosphors were characterized by XRD, FESEM, EDS, Photoluminescence and PL decay time analysis. This paper summarizes the conclusion regarding the evolution of the structural and optical properties of $CaTiO_3$: Dy^{3+} perovskite nanophosphors. Under the excitation with 386nm UV-light, the $CaTiO_3$: Dy^{3+} nanophosphors exhibits their characteristic excellent emission in blue and yellow region at the wavelength 484 and 575nm due to transition $^4F_{9/2}\rightarrow{}^6H_{15/2}$ and $^4F_{9/2}\rightarrow{}^6H_{13/2}$ respectively. The optimum doping concentration of Dy^{3+} was determined to be 4 mol% in order to achieve maximum emission intensity. The CIE chromaticity co-ordinate for $Ca_{0.96}TiO_3$:0.04 Dy^{3+} nanophosphors was observed as (0.26, 0.31) which is found in

blue region. The experimental results indicates that the synthesized nanophosphor can be a promising candidate for lighting applications.

POSTER ID- 151_Panda _ICRCS2017

PREPARATION OF FLY ASH BASED ZEOLITE FOR REMOVAL OF FLUORIDE FROM DRINKING WATER

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Abstract
Fluoride contamination of drinking water is a worldwide phenomenon and scientists are working relentlessly to find ways to remove fluoride from drinking water. Out of the different methods employed for removal fluoride from drinking water adsorption process is the most suitable because in this process the adsorbent is regenerated. In the present study fly as is used as the raw material, which is treated with alkali (NaOH) to form NaP1 zeolite. This zeolite is then subjected to characterization by standard procedures. It is found that the synthesized zeolite has more crystalline character than the raw fly ash and has also has residual positive charge on its surface. The synthesized zeolite is employed for removal of fluoride under varying pH, contact time, initial concentration of fluoride , temperature and adsorbent dose etc. The adsorption data is then put to Freundlich and Langmuir Isotherm It is found that the equilibrium data for removal of fluoride by adsorption onto synthesized zeolite fits better into the Langmuir isotherm than the Freundlich isotherm.
Keywords: Fly ash,Zeolite,Contamination,Fluoride,Isotherm,

POSTER ID- 152_Gondia _ICRCS2017

Spectroscopic Investigation and Luminescent Properties of Schiff base Metal Complex for OLED

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Organic light emitting diode (OLED) display technology has demonstrated high efficiency and brightness, is leading to a strong commercial interest. One of the remaining problem with the OLED technology is efficiency and color saturation .The efficiency of OLED devices can be improved by doping the host organic layer with a suitable phosphorescent material in the emissive layer.

We have synthesized a Schiff base zinc metal complex for OLEDs applications. Metal complex was characterized by FTIR, HNMR technique. PL emission spectra were recorded by keeping excitation wavelength fixed at 240 nm. A strong intense emission peak was observed at 410 nm. CIE chromaticity colour coordinates were observed at x = 0.239 & y = 0.159. HOMO/LUMO energy gap were found to be -0.223 and -0.067 respectively for prepared zinc metal complex. It could be considered as a good light emitting phosphor material for possible application as emissive layer in OLEDs.

POSTER ID- 153_Mohapatra _ICRCS2017

Simulation Of Multilayer Metal-Dielectric-Metal Device For Surface Plasmon Resonance Sensor

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Abstract. Label free and lab-on-chip sensing capability are the two key features of Surface Plasmon Resonance (SPR) based biosensors.In the present work, a theoretical investigation of SPR properties of a multilayer film (Au-SiO_2-Au) coated on a glass prism was being carried out. In this multilayer structure, each interface corresponds to multiple SPR modes.To obtain the maximum reflection dips in the SPR modes, the thickness of SiO_2 layer was optimized by varying it from 450-600 nm. Our calculation also revealed that SPR mode corresponding to Au-ambient interface is very sensitive to the changes in the surrounding medium, least affecting the other SPR modes. The theoretically calculated bulk refractive index sensitivity was calculated.Such multilayer SPR sensing device has advantages over conventional SPR devices in terms of their bulk sensitivity and self referencing,claiming itself as a potential candidate for the development of highly sensitive biological sensor.

POSTER ID- 154_Khader _ICRCS2017

Effect of $BaTiO_3$ Doping on the Magnetic Properties of $Ni_{0.75}Cu_{0.25}Fe_2O_4$-BTO Composites

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Abstract : The composites of ferrite and ferroelectric phases having the general formula (x) $Ni_{0.75}Cu_{0.25}Fe_2O_4$ + (1-x) $BaTiO_3$ (x=15%, 30%, 45%) were synthesized by sintering mixtures of ferroelectric $BaTiO_3$ (BTO) and ferri-magnetic component $Ni_{0.75}Cu_{0.25}Fe_2O_4$ (NCF) and investigated the effect of BTO doping on their structural, dielectric and magnetic properties of proposed NCF-BTO composite system. Presence of constituent phases of ferri-magnetic, ferroelectric and their composites were probed and confirmed by X-ray diffraction (XRD) studies. Surface morphology of the samples has been investigated using Field Emission Scanning Electron Microscope (FESEM). The variation of dielectric constant and dissipation factor as a function of frequency from 100 Hz to 1 MHz at room temperature were carried out using a Hioki LCR Hi-Tester. The dielectric constant and dielectric loss were found to decrease rapidly in the low frequency region and became almost constant in the high frequency region. The electrical conductivity deduced from the measured dielectric data has been thoroughly analyzed and found that the conduction mechanism in these composites is in conformity with small polaron hopping model. The magnetic ordering in the synthesized magneto-electric composites was measured using Vibrating Sample Magnetometer (VSM).

Keywords: Dielectric; magnetic order; composite; ferroelectric.

POSTER ID- 155_Parveez _ICRCS2017

Structural, Dielectric and Conductivity Studies of Transition Metal Ions Doped ZnO Nanoparticles by Combustion Method

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Abstract: Transition metal ions (Fe, Co and Ni) doped ZnO nanoparticles were synthesized by combustion method using citric acid as fuel. Synthesized and TMI doped nanopowders were investigated for their structural, dielectric and a.c conductivity properties. Phases of pure and TMI doped ZnO nanopowders were probed and confirmed by X-ray diffraction (XRD) studies. Surface morphology of the samples has been investigated using Field Emission Scanning Electron Microscope (FESEM). The variation of dielectric constant and dissipation factor as a function of frequency from 100 Hz to 1 MHz at room temperature were carried out using a Hioki LCR Hi-Tester. The dielectric constant and dielectric loss were found to decrease rapidly in the low frequency region and became almost constant in the high frequency region. The electrical conductivity deduced from the measured dielectric data has been thoroughly analyzed for studying conduction mechanism in these samples and found that the conduction mechanism in these samples is in conformity with small polaron hopping model.
Keywords: Dielectric; Transition metal ions ; Combustion; Conductivity.

POSTER ID- 156_Poonia _ICRCS2017

Optical band gap and Urbach energy analysis of $10ZnO-(20-x)Bi_2O_3-60SiO_2-10K_2O-xNd_2O_3$(where x= 0.5,1,0.1,5) glass system

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Abstract
Neodymium doped bismuth-silicate glasses of composition $10ZnO-(20-x)Bi_2O_3-60SiO_2-10K_2O-xNd_2O_3$ with concentration from 0.5 to 1.5 mol% were synthesized by conventional melt-quenching technique and their physical and optical properties were investigated. The absorption spectra for these glasses were recorded in the UV-Visible spectral range. The optical absorption coefficient just below the absorption edge varies exponentially with photon energy indicating the presence of Urbach's tail. Davis and Mott relation is used to compute the optical energy gap and Urbach energy and were found to lie in the range 1.81 to 1.78 eV while the Urbach energy values lie between 0.23-0.20 eV. They were found to be dependent on the glass composition.

POSTER ID- 157_Sadhu _ICRCS2017

CHLORPYRIFOS INDUCED HISTOLOGICAL CHANGES IN THE LIVER OF AN AIR BREATHING FISH *CHANNA GACHUA*

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ABSTRACT
Pesticides have been one of the most effective weapons discovered by man to protect agricultural products from pests. However, they are the major cause of concern for aquatic environment due to their toxicity, persistency and tendency to accumulate in the organisms and it is difficult to remove them from any aquatic ecosystem. A bioassay was conducted to determine the lethal toxicity (LC50) of commercial grade organophosphate insecticide chlorpyrifos (20% EC) on *Channa gachua*. The 96

hours LC50 for chlorpyrifos (20% EC) was found to be 0.022 ppm. For sub lethal toxicity study the fishes *Channa gachua* were exposed to two sublethal concentrations such as 1/5th of LC 50 and 1/10th of LC 50 for 21days respectively.The histopathological changes in liver ranged from vacuolization, necrosis, aggregation of melano macrophge, increase in number of kuffer cells at different time of exposure such as 7, 14 and 21 days respectively. There are some basic pathologies that pollutants in general may cause to fish *Channa gachua* liver like swelling, disorganisation of hepatic cords, increased level of mitosis an liver parenchyma cells, changes in nuclear size and shape, nuclear migration of nuclei and focal necrosis. The liver of pesticide treated fish showed dilation of blood sinusoids, vacuolization, disintegration of cell boundaries and necrosis. The details will be dealt in this paper.

Key words: Histology, Chlorpyrifos, Lethal toxicity, *Channa gachua.*

POSTER ID- 158_Rahman _ICRCS2017

EFFECTS OF HEAVY METALS ON BEHAVIOUR AND RESPIRATORY RESPONSES IN AN AIR BREATHING MURREL FISH *CHANNA GACHUA*

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ABSTRACT

Heavy metals are being introduced into aquatic environment through industrial process, sewage disposal, soil leaching and rainfall. These metals are relatively toxic even at fairly low concentration and affect the survival of fishes and other aquatic organisms. Sub lethal effects of Copper, Zinc and Cadmium on behaviour and respiratory responses of *Channa gachua* were studied individually and in combinations. The fishes exposed to Cu + Zn and Cu + Cd combinations exhibited the strange phenomenon of behavioural changes than the animals exposed to Copper, Zinc or Cadmium individually. The rates of oxygen consumption and opercular movements were increased when the fish were exposed to chosen metals individually and in combinations on first day while it was declined on 15th days respectively. The behavioural changes of *Channa gachua* were found to be different on lethal and sub lethal treatments of chosen metals individually and in combinations. Animals exposed to sub lethal concentration of metals were trying to adjust with their ambient medium for regaining their normal activity and sometimes they showed their avoidance response against the toxicant media. It is observed that *Channa gachua* have exhibited an avoidance response to low concentrations of certain pollutants. At lethal concentrations, they tried to avoid the toxicant by irregular erratic swimming, jerky movements, rapid opercular movements, restlessness, frequent surfacing, gulping of air upside down surface movement, revolving, convulsions and extension of fins. An important local effect was the abundant discharge of mucus at the gills and on the skin. The details will be discussed in this paper.

Key words: Heavy metal, Behaviour, Respiratory movements, *Channa gachua.*

POSTER ID- 159_Sandhu _ICRCS2017

EFFECT OF ARSENIC ON CERTAIN BIOCHEMICAL PARAMETERS IN LIVER TISSUE IN AN AIR BREATHING FISH *CHANNA GACHUA*

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ABSTRACT

Fishes are primary aquatic vertebrates using gills for respiration, changes of water qualities such as pH, dissolved oxygen, toxicity and amount of toxic compounds and are some of the major causes of respiratory distress to fish with relatively high level of environmental stressors. The effect of heavy metal toxicant on enzymatic activity is one of the most important biochemical parameters which are affected under stress. The environment is currently polluted by thousands of chemicals or xenobiotic introduced into the environment by man to meet the demands of the modern era. The pollution is continuous and alarming in flux to aquatic environment worldwide from both naturally occurring and anthropogenic sources. The polluted water may lead to the destruction of the beneficial species either directly effecting aquatic forms of life in directly through breaking the biological food chain such as fish and their habitat and behavioral pattern. The fish as a bio indicator of aquatic medium it plays an important role in the monitoring of water pollution because of the sudden death of fish indicates heavy pollution and the effects of exposure to sub lethal levels can be measured in terms of biochemical, physiological and histological responses of the fishes. In the present study, the sub lethal effects of arsenic on various biochemical parameters of *Channa gachua* were studied. The fish was exposed to sub lethal concentration of arsenic for 20 days for chronic toxicity studies. In the present study total protein, amino acid and acetyl cholinesterase, glycogen and lactic acid were observed. The present study showed the protein content was decreased and amino acid content was increased significantly and also Acetyl cholinesterase was increased in the liver tissue of arsenic treated fish, *Channa gachua*. The present study shows the level of glycogen decreased and lactic acid increased in the liver tissue of fish exposed to arsenic. These changes were concentration dependent. The details will be discussed in this paper.

Key words: Biochemical parameters, Arsenic, Liver, *Channa gachua.*

POSTER ID- 160_Rahman _ICRCS2017

ADAPTIVE CHANGES IN RESPIRATORY MOVEMENTS IN AN AIR BREATHING MURREL FISH *CHANNA GACHUA* EXPOSED TO ENDOSULFAN

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ABSTRACT

With the industrialization the water of the streams, lakes and rivers are receiving an increasing load of industrial wastes. Besides polluting water in many cases these water kills the fish and other aquatic organisms. Fresh waters are highly vulnerable to pollution since they act as immediate sinks for the consequences of human activity always associated with the danger of accidental discharges or criminal negligence. Primary effects such as fish kills can be detected but secondary effects may go unnoticed. The ability to detect identifies and properly respond to natural chemical stimuli is an important component of the environmental physiology of fishes. The classic ecotoxicology approach to testing aquatic toxicity is to measure the direct effect in simple experiments using death, more often than not, as the end point. In situations where no toxicity is available bioassays become extremely important. Development of acute toxicity bioassay data must be viewed as a necessary step for providing comparative toxicity information on different toxicants and species of organism. In the present investigation an attempt has been made to study the toxic effects of endosulfan in the fresh water air breathing fish *Channa gachua*. It was observed that the sub lethal (LC0) Median (LC50) and Lethal (LC100) concentration of endosulfan for 120 hours were assessed as 190, 240 and 260 ppm respectively. From the 120 hours LC50 value, the 1/3rd and 1/6th sub lethal concentration

were calculated as 80 ppm and 40 ppm respectively, to which the fishes were exposed. The pattern of changes in the respiratory movements of endosulfan exposed in *Channa gachua* were taken to suggest that the fish showed adaptive increase in its frequency of surfacing with a tremendous drop in its opercular movements during first hour of exposure to higher concentration of endosulfan. The reduced opercular movement is also considered adaptive for the fish to prevent itself. The details will be discussed in this paper.

Key words: Endosulphan EC50, Respiratory movements, *Channa gachua.*

POSTER ID- 161_Sudsuha _ICRCS2017
Preparation and characterization of polymer Clay Nanocomposite

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Abstract
The project was to understand the effect of nano clay on clay polymer nanocomposite obtained by melt blending technique. The nanocomposite comprises of organic and inorganic hybrid matrices containing platelet shaped clay particles with a few nanometer size thick layers of clay dispersed in polymers. These are generally stiffer, stronger and tougher than normal polymeric material and can be potentially useful in a variety of applications. Two different polymers namely Polyester and Poly Vinyl Chloride were chosen as the polymer matrix and bentonite clay was used dispersed phase in the composites. The thermal stability of the clay polymer composite has been investigated from thermal degradation behaviour of the materials studied by thermo gravimetric analysis and activation energies for the degradation process have been estimated in relation to the loading of clay particles from Kinetic study following Friedman's approach.

Keyword:- Polyester, Poly Vinyl Chloride, Bentonite Clay, activation Energy, Melt Blending **Technique and Thermal stability.**

POSTER ID- 162_Sharma _ICRCS2017
Inhibiting effect of Sodium Benzoate in autoxidation of S(IV) in aqueous solution Catalyzed by Ag (I) in acidic medium

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Abstract
The kinetics of atmospheric autoxidation of S (IV) by Ag(I) in the pH range 4.02-5.25 has been studied. The aqueous phase autoxidation of S (IV) is the major factor responsible for acidification of atmospheric aqueous system. The role of Sodium Benzoate act as an inhibitor of Ag(I) catalysed autoxidation of S (IV) in acidic medium has been identified, and based on the observed results following rate law given and a free radical mechanism has been proposed.

$$d[S(IV)]/dt = (k_1 + k_2[Ag(I)])\,[S(IV)]/1 + B\,[Sodium\ Benzoate]$$

Experiments were carried out at 30≤T°C≤40, 4.02≤pH≤5.25, 1×10^{-3} mol/cm^3≤ [S(IV)≤10×10^{-3} mol/cm^3, 5×10^{-6} mol/cm^3≤[Ag(I)]≤2.5×10^{-5} mol/cm^3, 8×10^{-8} mol/cm^3≤[Sodium Benzoate]≤2×10^{-4} mol/cm^3. Based on the experimental results, rate constants and orders of the reactions were determined. The reaction order in S(IV) were first order for both reactions in the presence and absence of Sodium Benzoate. The effect of Ag(I) ion and Sodium Benzoate concentrations as well as an initial pH of the solution on the S(IV) oxidation rate were discussed. It was found that the rate of the S (IV) oxidation depends on the initial pH of the solution but it is independent of the pH change during the reaction. Addition of Sodium Benzoate leads to the introduction of an induction period and decrease in reaction rate, most likely due to SO_4^{-1} radicals. The value of apparent energy and inhibition constant B were calculated in the presence of Sodium Benzoate found as 24.11 KJ mol^{-1} and 1.48 x 10^4 mol dm^{-3} respectively.
Keywords: Kinetics; Autoxidation; S(IV); Ag(I); Catalysis; Inhibition ; sodium benzoate

POSTER ID- 163_Kumari _ICRCS2017

Blue upconversion emission studies in $Gd_2(MoO_4)_3$:Tm^{3+} phosphor for lighting application

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Abstract

Upconversion luminescence properties in Tm^{3+} doped $Gd_2(MoO_4)_3$ phosphors have been studied by using 980 nm laser diode radiation. Tm^{3+} doped $Gd_2(MoO)_4$ phosphors have been prepared by chemical co-precipitation technique by varying the concentration of Tm^{3+} ions [1, 2]. The phase and crystal structure identification of the doped phosphors have been confirmed via X- ray diffraction analysis. Overall intense blue upconversion emission peak at 476 nm corresponding to the $^1G_4 \rightarrow {}^3H_6$ transition has been obtained. In the red and NIR region also the emission peaks due to $^1G_4 \rightarrow {}^3F_6$ and $^3H_4 \rightarrow {}^3H_6$ transitions peaking at 650 nm and 798 nm respectively of Tm^{3+} ion has been reported [3-5]. The pump power dependence study performed in the doped phosphor has been explained by using suitable energy level diagram. The colour co-ordinate analysis confirmed that the prepared phosphors can be used in making blue colour emitting devices.

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POSTER ID- 164_Prajapat _ICRCS2017

Thermal and Biological evolution of Fe(III)-Sulfanilamide complexes synthesized by Green strategy

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ABSTRACT

Sulfonamides belong to a category of sulfadrugs, that are widely used as antibiotic medicines. Their metal complexes, also called Metallodrugs, are known to have diverse pharmacological applications and are significantly used as therapeutic agents for treatment of several human diseases. Fe(III) complexes of two sulfonamides, namely Sulfanilamide and Sulfadiazine have been synthesized by the method of Microwave Assisted Organic Synthesis (MAOS), using acetone as solvent medium. Presence of excellent donor atoms such as N and O, induce these drugs to exhibit a chelating behavior with the metal ion, and to act as bidentate ligands. Both the complexes were found to have four coordinated, tetrahedral geometry with two molecules of water of crystallisation. Thermal decomposition studies were carried out in an inert nitrogen atmosphere by Thermogravimetric (TGA) and Derivative Thermogravimetric (DTA) analysis. Interpretation of thermograms have been done to evaluate various kinetic and thermodynamic parameters, using integral method of Coats and Redfern. The antibacterial activity for both complexes have been screened against E.coli, S.aureus and B.subtilis.

Keywords : Microwave assisted organic synthesis (MAOS), Thermal decomposition , Fe(III) complex of Sulfanilamide and Sulfadiazine, TGA / DTA analysis, Coats- Redfern equation, Antibacterial activity.

POSTER ID- 165_Soni _ICRCS2017

Effect of Li^+ Ions in Tm^{3+}-Yb^{3+} Codoped Y_2WO_6 Phosphor For Improved Upconverter

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Abstract

Effect of Li^+ ions in the Tm^{3+}-Yb^{3+} codoped Y_2WO_6 phosphor have been studied by monitoring photon upconversion spectroscopy. Crystal structure of the resulted phosphor has been identified by using X-ray diffraction analysis. The upconversion emission bands and their pump power dependence study have been performed with the help of 980 nm laser diode radiation. The optimum doping concentration of Li^+ ions (4 wt%) has been established via concentration dependent upconversion emission intensity study. Improvement in the colour co-ordinate located in the blue region of the chromaticity diagram has been reported. The developed phosphor could be useful for improved upconverter and display device applications.

Keywords: Phosphor, Rare earth ions, X-ray diffraction, Colour co-ordinate.

PACS: 78.60.Lc, 85.60.Jb, 85.60.Pg, 87.15.mq

POSTER ID- 166_Sharma _ICRCS2017

Biomass Energy: Global Potential For Sustainable Future

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Energy demand is increasing continuously due to urbanization and industrialization. The conventional energy sources such as coal, oil, natural gas, etc. are depleting incessantly. There use also adversely affect the environment. Therefore renewable energy has the potential to play an important role in providing energy. Thus biomass energy can replace fossil fuel-derived energy and reduce environmental impacts including global warming and acid rain. Although biomass energy is more costly than fossil fuel-derived energy but it is energy. The present review article aims to highlight various aspects of production of biomass energy.

POSTER ID- 167_Sharma _ICRCS2017

Recovery and Recycling of Solid Waste in Present Scenario

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In last few years solid waste management has moved to the vanguard of the national agenda. Industrial and daily activities are regularly generating enormous amount of materials which may toxic and contaminate the environment and public health. The Insertion of waste materials as raw materials in productive cycle might be interesting from both an environmental and economical replace with Pont of view. On the other hand replace with such insertion also contributes to diversify products, reduce manufacturing costs, provide alternative raw materials, save resources and improve public health.

POSTER ID- 168_Maurya _ICRCS2017

Synthesis and Upconversion Emission Studies of $NaYF_4$: Er^{3+}/Yb^{3+} Phosphor Nanoparticles

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Abstract: The Er^{3+}/Yb^{3+} codoped $NaYF_4$ upconversion nanoparticles are synthesized via facile thermal decomposition route. In order to remove the organic impurities of sample, it is further annealed at 500 ^oC and 900 ^oC as confirmed by FTIR analysis. FESEM images are acquired to confirm the shape and size of particles. The controlled spherical shape and 50 nm size of particles are measured for 900 ^oC annealed sample. The comparative studies in structural and optical upconversion behaviour of these three powder samples (ASP, 500 ^oC and 900 ^oC) are carried out. The visible photon emission bands are observed at 520, 556 and 670 nm due to $^2H_{11/2}\rightarrow{}^4I_{15/2}$, $^4S_{3/2}\rightarrow{}^4I_{15/2}$ and $^4F_{9/2}\rightarrow{}^4I_{15/2}$, manifolds, respectively. Illumination of 976 nm diode laser is used for different annealed samples. The CIE color diagram confirms that the present phosphor nanoparticles are suitable for white light display devices.

POSTER ID- 169_Nayeen _ICRCS2017

Structural, Dielectric and Conductivity Studies of $ZnFe_2O_4$-NiO Composites Using Combustion Method

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Abstract: Nano-composites of $ZnFe_2O_4$-NiO with general composition $ZnFe_2O_4$ (1-x) + NiO (x), (here, x=5%, 10% and 15wt %) were synthesized by combustion method using citric acid as fuel. Synthesized Pure as well as NiO doped Zinc ferrite composite samples were investigated for their structural, dielectric and a.c conductivity properties. Phases of pure and composite nanopowders were probed and confirmed by X-ray diffraction (XRD) studies. Surface morphology of the samples has been investigated using Field Emission Scanning Electron Microscope (FESEM). The variation of dielectric constant and dissipation factor as a function of frequency from 100 Hz to 1 MHz at room temperature were carried out using a Hioki LCR Hi-Tester. The dielectric constant and dielectric loss were evaluated from the obtained C_P and tanδ values. The electrical conductivity

deduced from the measured dielectric data has been thoroughly analyzed for understanding, the conduction mechanism in these samples.
Keywords: Ferrite; Dielectric; Composites; Combustion; Conductivity

POSTER ID- 170_Pareek _ICRCS2017
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Prioritizing and Time Management in the Laboratory and Work place

Time Management is the process of organizing and planning how to divide your time between specific activities. Good time management enables you to work smarter- not harder- so that you get more done in less time,even when time is tight and pressures are high. Failing to manage your time damages your effectiveness and causes stress.
Time cannot **be 'managed'** in the same way as we manage other resources like human, physical, capital information. Time is a resource that must be used instantly as it is received. Time cannot be saved, you cannot get more of it and it cannot be replaced. Wasted time is the time gone for ever. Time must be used at the same rate of 60 seconds per minute 60 minutes per hour, 24 hours a day and so on.
We cannot 'manage' time. What we can do is to learn to manage ***ourselves*** and other ***resources*** in relation to time.

For scientists, time management in the laboratory can be difficult. There are external pressures, like the first-to-file patent system and investor demands that can create a sense of urgency to produce results. Then there are internal pressures, such as the importance of documentation completeness and results analysis that are crucial and must be consistently completed. Determining how to balance urgent versus important tasks is one of the most difficult aspects of time management. In **the laboratory, it is important to distinguish between tasks that are important and tasks that are urgent.**

In my experience, there is no single time management solution that works for everyone. However, there are principles that, if applied within the laboratory environment, can help you find the right balance between urgency and importance. Three of these principles include the following:

POSTER ID- 171_Parveez _ICRCS2017
Effect of Ni^{+2} Doping on Magnetic Properties of Nano $MgFe_2O_4$ by Combustion Method
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Abstract: Ni^{+2} doped Magnesium ferrite nano-particles having the basic composition $Ni_xMg_{1-x}Fe_2O_4$(x=0, 0.25, 0.5, 0.75, 1) were synthesized using nitrate-citrate method. The structural and dielectric properties of these samples, which are sintered at 800^0C were investigated. The structure and phase of the synthesized samples were probed by X-ray diffraction (XRD) studies. The peaks observed in the XRD spectrum confirms the formation of single phase spinel cubic structure for the synthesized pure and Ni^{+2} doped $MgFe_2O_4$ samples. Surface morphology of the samples has been investigated using FESEM. The dielectric constant (ε') and dielectric loss tangent (tan δ) of nano-crystalline Magnesium ferrites were investigated as a function of frequency and Ni^{+2}

concentration at 300K, over the frequency range 100 Hz to 1 MHz , using Hioki make LCR Hi-Tester 3250. Frequency dependence of ε' and tan δ is in accordance with the Maxwell-Wagner type interfacial polarization. The electrical conductivity (σ_{ac}) is deduced from the measured dielectric data, and found that the conduction mechanism in $Ni_xMg_{1-x}Fe_2O_4$ nanoferrites are in conformity with the electron hopping model. Effect of Ni^{+2} doping on the magnetic properties of nano $MgFe_2O_4$ were investigated using vibrating sample magnetometer (VSM).
Keywords: combustion; dielectric; a.c conductivity; Maxwell-Wagner; nanoferrites

POSTER ID- 172_Kumari _ICRCS2017
Nondestructive Evaluation of Degradation of Papaya Fruit using intensity based algorithms
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Abstract: In the proposed work degradation of Papaya fruit has been evaluated nondestructively using laser biospeckle technique. The biospeckle activity inside the fruit has been evaluated qualititatively and quantitatively during it's ripened to degradation process using intensity based algorithms. For qualititative analysis Co-occurence matrix (COM) and for quantitative analysis Inertia Moment (IM), Absolute value Difference (AVD) and Autocovariance methods have been used. The biospeckle activity has been found to first increase and then decrease during study period of five days. In addition Granulometric size distribution (GSD) has also been used for the first time for the evaluation of degradation of the papaya. It is concluded that the degradation process of papaya fruit can be evaluated nondestructivelyusingallthementionedalgorithms.

POSTER ID- 173_Gupta _ICRCS2017
Synthetic, spectroscopic and structural aspects of Trimethylantimony(V) complexes with oximes containing heterocyclic ring system.
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Trimethylantimony complexes with oximes containing heterocyclic ring of the type [$Me_3Sb(ON\text{-}C(Ar)Me)_2$ (Ar = C_5H_4N, C_4H_3O and C_4H_3S) have been prepared by the action of Me_3SbBr_2 with corresponding oxime in 1:2 molar ratio in anhydrous benzene. The reaction of above complex with Me_3SbBr_2 in 1:1 molar ratio yield a redistribution product of the type $Me_3Sb(Br)L$. Controlled hydrolysis of this product yield $Me_3Sb(OH)L$. All these compounds have been characterized by elemental analysis, IR, NMR (^1H and ^{13}C) spectroscopic studies.

POSTER ID- 174_Rana _ICRCS2017
A theoretical study on Cerium-Nickel intermetallic compound
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The structural, electronic and magnetic properties of Cerium-Nickel (Ce-Ni) are performed within the frame work of spin-polarized density functional theory. By employing first principles method the present compound is found to be stabilize in orthorhombic chromium boride (CrB) structure. The optimized value of muffin-tin radii (RMT) of Ce atom is 2.28 a.u. (atomic units) while the sphere size for Ni atom is 2.0 a.u. The spin polarized self consistent calculations with *GGA+U* scheme have been used to analyze electronic properties.The thermal and magnetic behaviour of the compound has also been studied at various temperature and pressure ranges.

POSTER ID- 175_Sharma _ICRCS2017
Investigations on Photo-electrochemical Performance of Boron doped ZnO Nanorods Synthesized by Facile Hydrothermal Technique

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Abstract: Transparent and conductive materials are of immense use in various optoelectronic devices. The structural, optical and electrical properties of ZnO host lattice can be modified by doping different elements. In the present work, we have grown one dimensional ZnO nanorods (NRs) (undoped and 10% boron-doped) on ITO glass substrates using a facile hydrothermal method, and investigated the effect of boron doping on the surface morphology, photo-electrochemical and optical performances of the doped ZnO NRs. The XRD pattern confirmed the formation of pure hexagonal phase with space group $P6_3mc$ (186). The UV-Vis study shows tuning in band gap from 3.25 eV to 3.13eV after incorporation of 10% boron in ZnO NRs, indicating a clear red shift. The B-doped ZnO NRs sample showed an enhanced photocurrent density of 1.31 mA/cm^2 at +0.5 V (vs. Ag/AgCl), which is more than 171% enhancement compared to bare ZnO nanorods (0.483 mA/cm^2) in 0.1 M Na_2SO_4 aqueous solution. The results clearly indicates that the boron doped ZnO NRs can be used as efficient photo electrode material for photo-electrochemical cell.

POSTER ID- 176_Kumar _ICRCS2017
Quality Assessment Of The Ground Water Of The Villages Of Sirsa District (Haryana).

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Abstract: Individuals on globe are under enormous risk because of undesired changes in the physico-chemical and natural qualities of air, water and soil. Because of expanded human population, industrialization, utilization of composts and man-made movement water is profoundly dirtied with various harmful contaminants. The quality of ground water is based on physico-chemical parameters. Therefore some ground water samples were collected from different villages of district Sirsa. The quality analysis has been made through the pH, EC, TDS, TH, Calcium, Magnesium, Chloride, Sulphate, Nitrate, Fluoride and Iron. By comparing the results with WHO, BIS and USPH, it has found that some water samples are beyond the limit. The results revealed that some parameters were in higher concentration and quality of potable water has deteriorated to a large extent.
Keywords. Drinking water, Groundwater, Physicochemical parameters, Water quality.

POSTER ID- 177_Mehla _ICRCS2017
ANALYSIS OF WATER QUALITY OF AROUND THE NEI LIMITED . GUNSI, NEWAI,TONK(Raj.) INDIA PRE-MONSOON SEASON, MAY 2013

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ABSTRACT
Gunsi Newai, Tonk, Rajasthan, India is the well known place because of National Engineering Industries ltd and etc, NEI part of C.K. Birla group, a growing US $ 1.6 Billion conglomerate that has a history of enduring relationships with renowned global companies. With over 20,000 employees, 24 manufacturing facilities and numerous patents and awards, the Group's businesses are present across five continents. NEI plant is located 60Kms from Jaipur . Spread over a total area of 2,27,000 m2 and a covered area of 7,195 m2, This plant is equipped with state of art fully automatic grinding and assembly lines and is manufacturing Ball bearings.It was Established in the year 1980-81 as an expansion project of NEI Ltd.

The present study deals with the Ground water quality of Around the National Engineering Industries Ltd. Campus Gunsi Newai, Tonk, Rajasthan, India, which is assessed by examine various physico-chemical parameters of open wells, bore wells and hand pumps. The studies reveal that the water of most of the sampling area is exceeding permisible limit of the concentration of Total alkalinity as CaCO3 and fluoride as F.

Key Words : Ground Water Quality , Standard Value, NEI Ltd.,Physico-Chemical parameters

POSTER ID- 178_Vyas _ICRCS2017
Atmospheric black carbon Aerosols scattering & absorbtion coefficient parameters Over Western Indian Thar Dessert Location

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Abstract. The first time satellite space based observational results over Indian Thar Desert regions concerning to atmospheraic black carbon (BC) aerosols parameters such as BC scattering and absorption parameters have been discussed specifically over two Great Indian Thar desert station at Jaisalmer (26.90°N, 69.90°E, 220 m above surface level (asl)) and Bikaner (28.03º N, 73.30º E, 224 m asl**)** located in the main Thar dessert vicinity of the western Indian site. Such types of atmospheric aerosols investigation are undertaken in view of understanding the active role of optical absorption of solar light radiation at useful wavelength 500nm over dust dominated provinces for longer period. On the basis of long term satellite observation available long period of database, the monthly, seasonal and yeaarly behavior of the above parameters has been described in the present course of work. These analyses would also give the clear scientific evidence of alteration in direct inference of air visibility change, incident solar radiation level etc., through determination of single scattering albedo parameter. The basis of the present work would be collection of longer period of daily measurement of the above parameters and computed single scattering albedo of about 26year i.e., 1980 to 2016. Several other interesting features of climate change implication in refrernce to the changing nature of monthly, seasonal, yearly variation on the basis long term changes have been discussed in detail in this paper.

POSTER ID- 179_Choudhary _ICRCS2017
LiO^{t}Bu Promoted Intramolecular [3+2]-dipolar Cycloaddition Reaction- A Rapid Access to Benzo-pyrano Pyrazoles.

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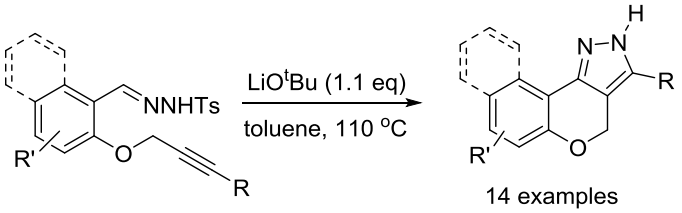
Abstract: LiO^{t}Bu promoted intramolecular [3+2]-dipolar cycloaddition reaction of in-situ generated diazo compounds from *N*-tosyl hydrazones and tethered alkynes is reported. The transition metal-

free method generates benzo-pyrano pyrazoles in good to excellent yields in short reaction time. Most of benzo-pyrano pyrazoles could be isolated without column chromatography.



R = alkyl, aryl, heteroaryl

14 examples
upto 84% yield

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POSTER ID- 180_Singh _ICRCS2017

Rare earth substitution on structural and optical behaviour of CdSe thin films

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Above results of structural optical spectra, Morphological studies are presented CdSe with rare earth like (samarium oxide, Gadolinium oxide) films, synthesised in aqueous solution phase at 80°C by using the Chemical Bath Method. CdSe films were charaterized by using different characterization. SEM and Composition studies show that films with smooth surface and well defined stoichiometry ratio of compounds. Optical values of some important parameters of the studied films were calculated by UVstudy Optical band gap Eg was calculated by tauc relation. Energy band gap of doped with Sm^{+3},Gd^{+3}) Bandgap were found to be 2.1eV,1.7eVand 1.5eVrespectively. XRD study confirms that CdSe films are polycrystalline in nature and have cubic structure. The Debye-Scherer formula was used to calculate average particle size of pure and doped CdSe film. Thus the particle size was decrease on doping.

POSTER ID- 181_Joseph _ICRCS2017

Synthesis, structural characterization and biological evaluation metal complexes of pyrazoline derivatives

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ABSTRACT: Metal complexes acquired a number of advantages that render them as attractive alternatives to organic small molecules for the development of therapeutic agents. In the past few decades, the research work was focused on the development of metal complexes for the treatment of inflammatory. In the present study, the anti-inflammatory activity of the metal complexes of pyrazoline analogs has been studied using the carrageenan induced hind paw oedema method in

albino rats. The metal(II) ions with the bioactive ligands (derived from chalcone analogs (formed by the condensation of 1-acetyl-2-hydroxynaphthalene with imidazole-2-carboxaldehyde) with substituted phenyl hydrazine). They were characterized using analytical data, FT-IR, electronic spectra and mass spectral studies. The ligands behave as bidentate nature. The antibacterial activities and anti-inflammatory activities were evaluated by the agar well diffusion method and carrageenan-induced hind paw edema method, respectively. All the synthesised compounds showed considerable antibacterial activities and moderate anti-inflammatory activities as compared to ibuprofen. The obtained results showed that the most active compounds could be useful as a template for future design, modification and investigation to produce more active analogs.

POSTER ID- 182_Sahay _ICRCS2017

Concentration Dependent mechanical properties of Nickel incorporated Diamond like carbon(Ni-DLC) thin film

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Abstract

Present study reports variation in hardness of Ni-DLC composite thin films with variation in concentration of Nickel nano particles in carbon matrix. Thin films M/50 and M/80 were synthesized by electrodeposition method at room temperature and low voltage. Solutions of two different molar concentration of Nickel acetate with 1% (v/v) acetic acid were taken as electrolytes. SEM and AFM were performed for Microstructural and morphological analysis of the thin films which shows granular features with homogeneous distribution of nano particles. EDAX shows peaks of carbon and nickel with the concentration variation of nickel in both the films. For hardness measurements Indentations were performed with Berkovich indenter. The applied load was 65.25µN for both films. The measured indented area for M/50 and M/80 Ni-DLC thin films were 38167 nm^2 and 32528 nm^2 respectively. Hence, estimated hardness of M/50 and M/80 thin films was 1.71×10^9 Pascal and 2.00×10^9 Pascal respectively. The hardness was found increases as molar concentration of Nickel acetate decreases.

POSTER ID- 183_Biswas _ICRCS2017

Optical Properties of Titanium-di-oxide (TiO_2) Prepared by Hydrothermal Method

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Abstract

TiO_2 has received much attention as an n-type semiconductor for optoelectronic devices, such as electronic device fabrication, photo catalysis, photovoltaics, energy storage, gas sensing, Dye Sensitized Solar Cell etc[1]. Till now numerous synthetic strategies liken sol−gel, hydrothermal, solvothermal, electrochemical anodization, electrodeposition etc. have been employed for the formation of TiO_2-based. Recently, research on titanate and its derived TiO_2 nanostructures with large specific surface area have received great attention due to their enhanced efficiency in photocatalysis[2], DSSC etc.

Here, in this communication TiO_2 thin films have been prepared by Dip Coating method and the sol for dip coating was prepared by hydrothermal method at 90˚C. In this work we have shown the changes in optical properties with variation of no of coating cycles. The morphological information of the prepared materials has been obtained from Field emission scanning electron microscopy (FESEM). The prepared samples have been characterized by UV-Vis spectrophotometer to know the band gap of the material in the range 200 ─ 800 nm. The vibrational bands present in the material have been identified from the Fourier transform infrared (FTIR) spectroscopy. The photoluminescence (PL) spectra of the prepared samples are recorded at room temperature in the range of 400 ― 700 nm. The main scope of this work is the use of this material in low cost DSSC.

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POSTER ID- 184_Nagashri _ICRCS2017

Synthesis, structural characterization and biochemical evaluation copper complexes of hydroxyflavone derivatives

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ABSTRACT: In the present investigations, a series of novel hydroxyflavone derivatives and their copper complexes were synthesized. All the copper complexes were characterized by elemental analyses, electronic, IR, NMR, mass and ESR spectroscopic techniques. The prepared copper complexes of flavone derivatives showed significant antibacterial activity against the organisms *Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa* and compared with the standard antibiotic Streptomycin. All the complexes showed good free radical scavenging activity which is comparable to that of the standard ascorbic acid. Among these complexes, the copper complex was showed higher activity. Based on the observed results, the flavone (structural core) and copper ion could be responsible for the potential candidate eliciting antioxidant activity. All compounds were evaluated for their *in vitro* antimycobacterial activity against *Mycobacterium tuberculosis*. The copper complex of L^1 showed to play a key role in the antitubercular potency of new class of metal-based compounds.

Keywords: antioxidant; flavone; standard; ascorbic acid.

POSTER ID- 185_Ahmed _ICRCS2017

Effect of Temperature on Microstructural, Optical and Dielectric Properties of Pure SnO_2 Nanoparticles

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Abstract. Pure SnO_2 nanoparticles have been synthesized by sol-gel process and calcined at different temperature 400°C, 500°C, 600°C. Microstructural analyses has been examined by XRD, SEM and EDS techniques. The crystallite size of all samples has been calculated by powder X-ray diffraction technique. It is observed that the particle size, lattice strain and crystallanity of SnO_2 nanoparticles increased with the increase in annealing temperature which may be due the atomic diffusion which is

more at higher temperatures. Whereas, UV-Visible technique is used to study the optical properties. It is also observed that ac conductivity increases with the increase in temperature, showing the mobility of charge carriers responsible for hopping causing the increase in the conductivity.

POSTER ID- 186_Kumar _ICRCS2017
$SrBi_4Ti_4O_{15}$ Aurivillius Phase Thin Films by Pulsed Laser Deposition using Nd:YAG Laser

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Abstract. We have synthesized the pure Aurivillius phase material in bulk by solid state route and in thin films by using pulsed laser deposition (PLD). Powder XRD and grazing incidence XRD (GIXRD) were used for phase purity confirmation. Thicknesses of the films were calculated from the x-ray reflectivity (XRR) curves. We show controlled thickness deposition of these natural superlattice films which can be used for various applications.

POSTER ID- 187_Sharma _ICRCS2017
Laplace Adomian Decomposition Method to study Chemical ion transport through soil

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Abstract: The paper deals with a theoretical study of chemical ion transport in soil under a uniform external force in the transverse direction where the soil is taken as porous medium. The problem is formulated in terms of boundary value problem that consists of a set of partial differential equations, which is subsequently converted to a system of ordinary differential equations through the use of a similarity transformation along with boundary layer approximation. The equations are solved by using Laplace Adomian Decomposition Method (LADM). The merit of this method lies in the fact that much of simplifying assumptions need not be made to solve the non-linear problem. The decomposition parameter is used only for grouping the terms, therefore, the nonlinearities is handled easily in the operator equation and accurate approximate solution are obtained for the said physical problem. The computational results are presented graphically. By using parametric variation, it has been shown that the magnitude of the external pressure considerably affects the flow behaviour.
Keywords: *Porous medium; Adomian's decomposition method; Laplace transformation, Reynolds number*

POSTER ID- 188_Meghwansi _ICRCS2017
Microbial Lipase Mediated Green Synthetic Processes

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The lipase from *Pseudomonas aeruginosa* is an exceptionally versatile catalyst of immense industrial importance. Due to their specificity and robustness they find applications in a wide variety of industrial processes/ commodities like detergent formulations, oleo-chemicals, agro-chemicals, pharmaceuticals, textiles, leather, tea, paper & pulp and bioremediation. In this paper few applications of lipase from an indigenously isolated strain of *Pseudomonas aeruginosa* are presented to emphasize the possibility of replacing the conventional **chemical processes** by **eco-friendly**

enzyme based processes. The use of these processes at commercial scale will result in establishment of *"Green Technology"* that would conserve the environmental biodiversity.

The *Pseudomonas aeruginosa* strain studied in this investigation is an alkalistable, 1, 3-regiospecific lipase, having broad substrate specificity with activity and stability in wide pH and temperature range and in different organic solvents. These properties qualify this lipase as a robust enzyme. Thus, it was felt worthwhile to investigate this enzyme for the following important industrial applications.

Food Industry

(i) Synthesis of flavour and fragrance precursors

(ii) Synthesis of biosurfactants

(iii) Synthesis of antioxidants

Oleochemical Industry

(i) Synthesis of glycerides

(ii) Optimization of synthesis of partial glycerides of lauric acid under solvent free condition

It is important to highlight here that the applications mentioned above could be done *chemically* also, but the wastes generated are *hazardous* for the *flora* and *fauna* of the environment.

POSTER ID- 189_Gautam _ICRCS2017

Adsorptive Removal Of Heavy Metals By Hydrothermally And Chemically Modified Fly Ash

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The contamination of water by heavy metals such as Cu, Zn, and Ni etc. is a worldwide environmental problem. Adsorption is the most popular method for waste water treatment due to its easy and inexpensive operation. Fly ash is a solid waste produced from thermal power plant, steel mills etc. It has been used for the treatment of industrial waste water. Hydrothermally treated fly ash (HFA) and surfactant modified hydrothermally treated fly ash (SMHFA) was examined for the adsorption of heavy metal ion from industrial waste water. The adsorption of metal ion on HFA as a function of initial metal ion concentration, contact time, initial adsorbent doses, and temperature was investigated for their optimization.

KEY WORDS
Adsorption, Hazardous pollutants, hydrothermally treated fly ash

POSTER ID- 190_Maurya _ICRCS2017

Upconversion Emission Studies of Y_2O_3: Tm^{3+}/Yb^{3+} Phosphor Nanoparticles as a Temperature Sensor

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Y_2O_3: Tm^{3+} /Yb^{3+} phosphor nanoparticles have been synthesized by the solution combustion route by using urea as a fuel agent. The nitrate of all rare earths $RE(NO)_3.6H_2O$ (RE = Y, Yb, Tm) are used in a schematic ratios to get the optimum emission. Each sample is characterized further for confirmation of phase formation by using XRD. FESEM images are analysed to confirm the shape

and size of particles. The distinguished and lucid spherical size is monitored for as synthesized sample. The as-synthesized phosphor (ASP) sample is further heated at two different annealing temperatures i.e. 800 ^{o}C and 1000 ^{o}C to investigate the heating effect on upconversion emission. The comparative studies in upconversion behaviour of these three powder samples (ASP, 800 ^{o}C and 1000 ^{o}C) are monitored, consequently, the improved emission intensity was found for the sample annealed at 1000 ^{o}C. The sensing behaviour of phosphor material is investigated as well.

POSTER ID- 191_Rajoriya _ICRCS2017
Imidazolium based ionic liquid immobilized on activated fly ash: efficient and recyclable catalyst for esterification reaction

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Abstract-
An efficient synthesis of imidazolium based ionic liquid under microwave irradiation is described in which 1-methylimidazole (Im) was modified by organosilane (3-chloropropyl triethoxysilane). This ionic liquid 1-methyl-3-[(triethoxysilyl)propyl]imidazolium chloride (TMICl) is grafted on mechanically activated fly ash (MFA) by co-condensation method to develop heterogeneous catalyst (TMICl/MFA). To determine the physio-chemi attributes of the samples, different techniques viz, XRD, FTIR, SEM-EDX, TGA, BET surface area, UV-Visible, H^{1}NMR are used. The catalytic performance of prepared TMICl/MFA catalyst is evaluated for esterification of aliphatic alcohols and propionic acid under dielectric heating.

Keywords: Ionic liquid, MFA, Microwave irradiation, Heterogeneous, Esterification

POSTER ID- 192_ Karsolia_ICRCS2017
Heterogeneous Catalyst For Biodiesel Synthesis With High Catalytic Performance
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The production of biodiesel from vegetable oil , offers a triple-facet solution: economic, environmental and waste management**.** Here preparation of catalyst for biodiesel synthesis also has a waste management solution of different type of stone slurry waste .Several catalysts are synthesized by using many types of stone slurry waste materials as precursor. Raw stone waste was not active to have sufficient catalytic activity for transestrification. A hydrotelcite of mg and Al prepared from stone slurry via chemical precipitation showing good catalytic activity for biodiesel production. KF loaded at the surface of prepared HTlc by impregnation method further generated highly active basic sites to increase the basicity of the catalyst as tested for biodiesel synthesis at 338 K temperature and microwave assisted synthesis. The synthesis is optimized for temperature, catalyst weight and reactant mole ratio. The purification of synthesized bio diesel was done using standard method through vacuum separation.
KEYWORDS
Biodiesel, Vacuum separation, Basicity

POSTER ID- 193_Ahmed _ICRCS2017

Raman and UV-visible absorption Spectra of $Sn_{1-x}V_xO_2$ (x = 0.00 and 0.05) Nanoparticles

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Abstract. In our work, pristine and 5% Vanadium (V) doped SnO_2 nanoparticles have been prepared via sol-gel route. These nanoparticles have been examined by various techniques. Structural properties were investigated by X-ray diffraction (XRD) and Raman spectroscopy. A single phase rutile-type tetragonal structure has been perceived in pure and V doped samples. It is observed that, average crystallite size of doped sample is less than of pure tin oxide due to smaller size of $V^{+3,+4\ 0r\ +5,}$ ions than Sn^{+4} ions. A Raman spectrum of Pure SnO_2 displays two bands at 423cm^{-1} and 634cm^{-1}, which are the regular E_g and A_{1g} vibrations of SnO_2. A slight shifting in the bands is observed which also confirms the doping of V ions into host material. Absorption spectra of all samples have been obtained by UV-visible spectroscopy which show a red shift for doped nanoparticles. Band gap energy of both samples are calculated by tauc plots. It is also noticed that doping of V ions affects the optical properties effectively, and band gap is also found to decrease with doping. Furthermore, these results show that V ions incorporation induces a leading effect on the structural and optical properties of SnO_2 NPs.

POSTER ID- 194_Yadav _ICRCS2017

Analyzing Effect of Gas Flow Rate on Electrical and Sensing Properties of Conducting Polymer based Gas Sensor

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Abstract: Conducting Polymers have gained a wide spread interest for real-life gas sensing applications because of their room temperature operation. In this research paper, the effect of change of gas flow rate on the sensitivity (change in resistance) of conducting polymer based gas sensor has been analyzed for conducting polymer based ammonia gas sensor. To study this effect, the PTSA (P-Toulene Sulphonic Acid) doped polyaniline (PANI) coated IDEs based sensor is constructed by depositing a thin film of 100 micron on gold IDEs. The length of IDEs electrodes 2 mm, width is 1 mm, and gap between two electrodes is 7.5 micron. The electrical characterization (resistive change) is done for the fabricated sensor for different gas flow rates. The electrically wired PTSA doped PANI based devices was enclosed in a gas chamber and subsequently the change in resistivity of the film was measured by passing ammonia gas through the glass chamber at various flow rate of ammonia at a fixed concentration. With increasing gas flow rate the sensitivity of the sensor improves. Also the fabricated device shows the reversible behavior i.e. change in resistance is reversible when ammonia gaseous environment is removed.
Keywords: Ammonia Gas Microsensor, Conducting Polymer based Sensor, Gas Flow Rate Effect.

POSTER ID- 195_Kumar _ICRCS2017

Fourier Transform Infrared Spectroscopic Characterization of BSCCO superconductors

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Abstract: In the present work, the study of Fourier Transform Infrared Spectroscopic (FTIR)of the samples series $Bi_2Sr_2Ca_{n-1}(Cu_{1-x}Fe_x)_3O_{2n+4}$is discussed. The interaction between an IRradiation and a sample can be determined by the FTIR technique. This technique is based on IR radiation for solid, liquid and gases materials. Here, the characterization of BSCCO superconductors with iron composition ($Bi_2Sr_2Ca_{n-1}(Cu_{1-x}Fe_x)_3O_{2n+4}$) were synthesis by ball mill with grinding time 6 hours continued 400 rpm. The compositional and structural studies were carried out by X-Ray diffraction (XRD), SEM with EDAX and FTIR technique in powder form. The sharper peaks in the infrared spectra reflected with functional group in the high frequency stretching and low frequency bending modes and few peaks of infrared spectra inferred to the range 100%. In this study the usefulness of FTIR technique in investigation ofquality and crystalline nature of BSCCO compounds.
Key Words- *Ball mill, SEM, EDS, X-ray diffraction, superconductors, FTIR*

POSTER ID- 196_Meena _ICRCS2017

Biosynthesis of Silver Nanoparticles from (Tea Leaves') for Organic Pollutants Degradation

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Abstract: Biosynthesis of silver nanoparticles is a simple, cheap and environmentally benign alternative to physical and chemical procedures. Green Synthesis of silver nanoparticles from leaves extracts is more compatible, large scale up and less time consuming process. Tea leaves extract act as a capping agent and reducing agent in the nanoparticles synthesis. This green method is a single step process, economic viability, effective and rapid production of nanoparticles could be used for biomedical and degradation of organic pollutants. The optical properties of reduces silver ions to nano silver hence, the colour will be change from light pink to green, colour shown. The prepared AgNps were characterized by powder X-ray diffraction (XRD), UV-Visible spectroscopy and Scanning electron microscope (SEM), Fourier transformer Infrared spectroscopy (FTIR). X-ray diffraction pattern confirmed the formation of face centered cubic symmetry. The obtained nanoparticles are in the size range of 20–40 nm and crystallized in face centered cubic symmetry.

Keywords: XRD, FESEM, TEM, Uv-Visible, 4-nitrophenol reduction, ecofriendly, surface plasmon resonance etc.

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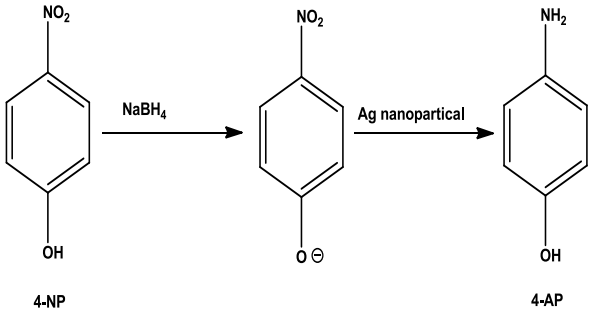

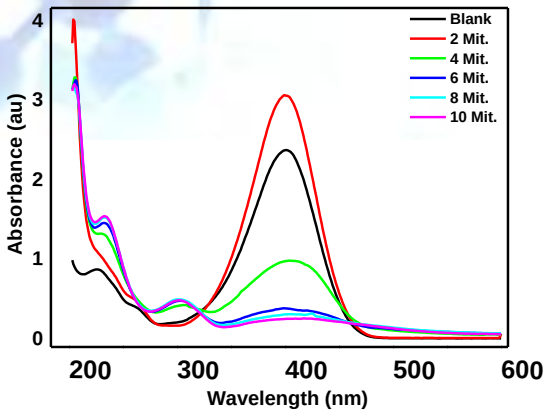

Figure: Catalytic Reduction of 4-Nitrophenol to 4-Aminophenol using biogenic silver nanoparticles derived from Tea leaves extract.

Novel Biosensor: Theory, Observations and Applications

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Sensitization is the primary feature of living beings. All organisms plants or animals posses and represent sensation in one or other way. Biosensors are analytical devices incorporating a biological sensing element. They harness the exquisite sensitivity and specificity of biology in conjunction with physicochemical transducers to deliver complex bioanalytical measurements with simple, easy-to-use formats. Biological activities in different compounds are found with a significant extent and has been reported extensively in various inorganic complexes. If a non living material comes in contact of living being particularly during germination or in embryonic state, there are certain changes which takes place in the non living system / material, this include the encapsulation of sensation. Our group has coined and reported this unique phenomenon termed as Bhojak's effect and designed new kind of Biosensors based on this phenomenon and materials . In this paper few applications of this effect is being elaborated.

POSTER ID- 197_Ghandhe _ICRCS2017
Synthesis and Dielectric Properties of L-Tyrosine amino acid doped TGS crystals

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Abstract. The effect of doping the pure TGS crystal with L-Tyrosine amino acid at 10 wt% weight percentage. The crystals are grown at room temperature by using "Slow evaporation method". The prepared crystals are used to study the dielectric properties such as dielectric constant and AC conductivity as a function of frequency ranging from 50 Hz - 5 MHz at room temperature.
Keywords: TGS Crystal, Frequency, Dielectric constant, A C conductivity.

POSTER ID- 198_Tazwar _ICRCS2017
Synthesis And Characterization Of Copper Nanoparticles Using Ascorbic Acid As Reducing And Capping Agent

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Metallic nanoparticles are of great interest due to their excellent physical and chemical properties such as high surface to volume ratio and high thermal conductivity. Copper nanoparticles have also been considered as an alternative for noble metals in many applications such as heat transfer and microelectronics. Chemical reduction of copper salts by L-ascorbic acid is a new and green approach in which L-ascorbic acid is used as reducing and capping agent in aqueous medium. The effects of reactant concentration and reaction temperature on morphology of dispersed copper nanoparticles were studied. The formation of copper nanoparticles in dispersion was monitored through the analysis of absorbance spectra by UV-Visible Spectrophotometer at different stages during the process of synthesis. The study revealed that L-ascorbic acid plays an important role of protecting the copper nanoparticles to prevent oxidation and agglomeration and they have good stability for application.

POSTER ID- 199_Bharti _ICRCS2017
Environmental Pollution and monitoring in Antarctica
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Abstract
Larsemann Hills is an ice-free coastal oasis in east Antarctica with exposed rock and low rolling hills and contains hundreds of freshwater lakes of varying sizes, depth and biodiversity. An environmental study was being conducted at Larsemann Hills to evaluate the Ambient air quality, Lake and Sea water quality, soil and sediment characteristics, Noise level, solid waste generation, handling and disposal practices, etc. Geographically, the core study area (Bharti Island) is situated on Latitude 69° 24’ 00.0” S and 76° 10’ 00.0” E on southern part of the Earth. Air, water, soil and sediment samples were collected from various locations of different Islands/Peninsulas like Bharti Island, Fisher Island, McLeod Island, Broknes peninsula and Stornes peninsula. This assessment and monitoring work was carried out to formulate the strategy for the conservation of natural resources of Antarctica continent. The aim of this study is to assess the general characteristics, metal content, pesticide, radiation contamination and bacteriological analysis of water, soil and sediment. The air quality of different islands was also conducted to assess the level of particulate matter, oxides of nitrogen, sulphur dioxide, carbon monoxide and volatile compounds in air. The present work is aimed towards developing base line data for the local environmental settings and to evaluate the impacts of various activities on the environmental components during the construction work of ‘Bharti’ station in east Antarctica.

Key words: **Antarctica, environmental monitoring, water quality, environmental components**

POSTER ID- 200_Barbar _ICRCS2017
Structural properties of Pr doped Zn-Mg Ferrite
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Abstract: Ferrites is a metal oxide which contains magnetic ions arranged in manner which produce spontaneous magnetization. In the present study, the Zn-Pr-Mg ferrite with the chemical formula

$Zn_{0.5}Mg_{0.5}Fe_{2-x}Pr_xO_4$ (x=0.0, 0.02, 0.06, 0.1) was successfully synthesized by high temperature solid state reaction method. The synthesized powders were characterized by X- Ray diffraction analysis and Fourier Transform Infrared Spectroscopy(FTIR). The X-Ray diffraction data was used to determine the lattice constant, particle size and density. The FTIR analysis confirms the intrinsic vibrational frequency of the tetrahedral and octahedral of the spinel structure.

Key Words: Ferrite, X-Ray diffraction, FTIR

POSTER ID- 201_Mandawta _ICRCS2017

Synthesis of Ag@ZnO/AgCl nanocomposites by one-pot refluxing method and optical properties

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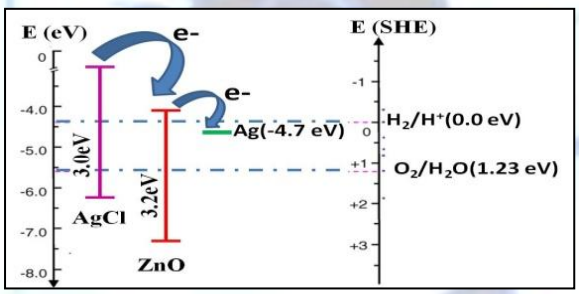
Abstract: Synthesis of Ag@ZnO/AgCl nanocomposites with different weight ratios were successfully prepared by a refluxing method at a low temperature of 90°C in 5h. X-ray diffraction (XRD) profile illustrated that the Ag@ZnO/AgCl NCs synthesized by above methods, was crystallized in the two phases i.e. face-centered cubic (AgCl) and wurtzite hexagonal phase (ZnO), and embedded by nanosilver. Remarkable changes in surface morphology and composition, was investigated by using the Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) studies and corresponding energy dispersive analysis of X-rays (EDX). These techniques were employed to determine the structure, morphology, optical, and magnetic properties of the as-prepared samples.

Keywords: Nanocomposite, Ag@ZnO/AgCl, conventional synthesis, water splitting, hydrogen generation.

Figure: Comparative energy level diagram of ZnO, AgCl and Ag, with their respective band positions.



POSTER ID- 202_Nagar _ICRCS2017

Synthesis of Fe_2O_3 Nanoparticles, Structural and Optical Properties

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Abstract: Nanocrystalline Fe_2O_3 were successfully synthesized by sol-gel method using citrate sulphate precursors. The prepared products were characterized by powder X-ray diffraction (XRD), UV-Visible diffuse reflectance spectroscopy (DRS) and Scanning electron microscope (SEM), Fourier transformer Infrared spectroscopy (FTIR). X-ray diffraction pattern confirmed the formation of single phase Fe_2O_3. SEM images indicates the obtained samples are micro porous sphere like morphology and its grain size will be in the range of 100-200nm. An optical property of Fe_2O_3 shows an energy band gap as 3.14eV.

Keywords: cobalt oxide, semiconductor, sol-gel method, optical property.

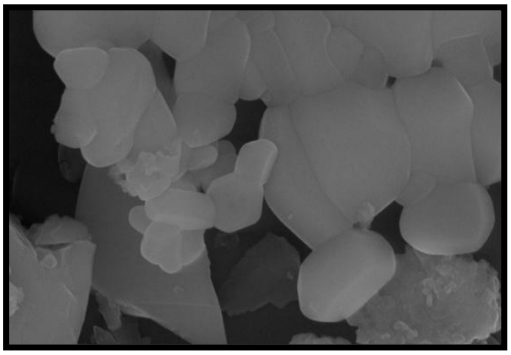

Figure: FESEM image of the Fe_2O_3 Nanoparticles

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POSTER ID- 203_Singh _ICRCS2017

Regio- and stereoselective synthesis of novel spiropyrrolidine /thiapyrrolizidines using deep eutectic solvent as a efficient reaction media.

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The biological and pharmaceutical importance of natural occurring products encouraged the synthetic organic chemists to design strategies for assembling their challenging structural complexity. The construction of spiropyrrolidine and pyrrolothiazoles by 1,3-dipolar cycloaddition reaction of azomethine ylides with activated olefins is an efficient and well developed route, because it offers high regio- and stereoselective results. Now days deep eutectic solvents (DESs) received the considerable attention of chemists in various organic transformations and in pharmaceuticals.
In continuation of our interest toward synthesis of biologically active spiroheterocycles by developing green and bio-comptitable methodologies, we report herein the regio- and diastereselective synthesis of spiro hybrid heterocycles comprising spiropyrrolidine/ pyrrolothiazole and isatin /acenaphthenequinone in single molecular frame work using choline chloride and urea based DES under eco-friendly conditions without using any hazardous catalyst and solvent. The employed DES plays role of solvent in addition to its catalytic effect and it is cheap, biologically degradable and non-toxic molecule.
The stereochemistry of the synthesized compounds including regio- and diastereo was confirmed by spectroscopic techniques and single crystal X-ray of one representative compound.
The detailed experimental procedure and mechanism of the synthesized compounds will be discussed in the conference.

POSTER ID- 204_Singh _ICRCS2017
PEG-SO_3H catalyzed, environmentally benign synthesis of novel spiro[acenaphthylene-thiazine]diones under sonication in aqueous medium.

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The discovery of new synthetic methodologies that facilitate the preparation of organic compounds is a central point of research activity in the field of modern organic, bioorganic, and medicinal chemistry. Ultrasound promoted efficient method has been developed for the synthesis of spiro[acenaphthylene-1,2[1,3]-thiazine]diones in the presence of a catalytic amount of polymer supported catalyst (PEG-SO_3H) as an inexpensive catalyst in water.
The catalytic activity of PEG-OSO_3H in aqueous media may be due to the formation of hydrophobic supramolecular cavity which brings molecules close to each other. In this particular MCR, we propose that, besides the formation of supramolecular cavity, the catalyst is also accompanied by inherent Bronsted acidity of SO_3H groups, which are capable of bonding with carbonyl oxygen of the acenapthoquinone assisting the nucleophilic attack by the aniline and in turn facilitates the formation of imine intermediate followed by reaction between the mercaptoacetic acid and imine derivative yielding spiro[acenaphthylene-1,2[1,3]-thiazine]diones. Rapid exclusion of water molecules from the hydrophobic core of the catalyst, generated during the condensation reactions may also facilitate the condensations. The significant advantage of this methodology is high yield, simple work-up procedure and easy handling of the catalyst.
The detailed experimental procedure and mechanism of the synthesized compounds will be discussed in the conference.

POSTER ID- 205_ Ahmed_ICRCS2017
Characterization of Lipases Isolated from Thermotolerant Bacteria of Thar Desert

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Bikaner
Bacterial lipases are exceptionally versatile catalysts of immense industrial importance. They catalyze a number of useful reactions including esterification, transesterification, regioselective acylation of glycols, sugars and menthols and synthesis of peptides and other chemicals. The use of enantioselective property of lipases for resolution of racemic drugs on an industrial scale is rapidly growing. Traditionally, prochiral or chiral alcohols and carboxylic acid esters served as the two main classes of substrates but over the years, the range of compounds has expanded rapidly to include dials, □- and β-amino derivatives etc. All this has led lipases to form a potential area of both basic and applied research. Due to their specificity and robustness they find applications in a wide variety of industries viz. detergent , oleo-chemicals, agro-chemicals , pharmaceutical, textiles, leather , tea & pulp and also in bioremediation.
This paper describes the characterization of two important lipases isolated from **thermotolerant** bacteria of **Thar Desert (**mainly Bikaner region**)**. The lipases characterized, showed broad pH tolerance, i.e. they were active in both acidic and alkaline pH ranges and showed good activity in temperature range of 30 ^{0}C to 50 ^{0}C. The lipases were also active in the presence of different heavy metals and organic solvents and exhibited good hydrolytic activity on different triglycerides.

POSTER ID- 206_Gawale _ICRCS2017

4-methyl-2H,5H-pyrano based 2-hydroxy-4H-pyrido[1,2-a]pyrimidin-4-one fluorescent brightening agents– synthesis, photophysical properties and dyeing studies

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Abstract

Four novel fluorescent brighteners based on 4-Methyl-2h,5h-pyrano[2,3-d]pyrido[1,2-a]pyrimidine-2,5-dione were synthesized using a simple two step route. All the structures of compounds were characterized by HRMS, ^{1}H, ^{13}C-NMR and elemental analysis. Compounds were applied to polyester fabric as fluorescent brightening agent and their performance was evaluated by measuring the color value, whiteness and brightness index and reflectance spectrum. These properties were compared with commercially available fluorescent brightener, hostalux ESR (C.I. FBs 199). Interestingly our synthesized optical whiteners showed pronounced enhancement in the whiteness and brightness index over the hostalux ESR (HX). Density Functional Theory computations used to correlate experimental photophysical properties in various microenvironments. These compounds

can be used as promising candidates for a fluorescent brighteners.

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POSTER ID- 207_Tripathi _ICRCS2017

Preliminary Studies On Nano Composite based gel Polymer Electrolyte

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Nano composite based gel polymer electrolyte has been synthesized using standard solution cast technique. Appropriate quantity of SiO_2 and ethylene carbonate (EC) propylene carbonate (PC) salt $TEABF_4$ was mixed with the polymer, poly (vinylidene fluoride-co-hexafluoro propylene (PVdF-HFP) for the formation of polymer electrolyte film having maximum conductivity of ~10^{-3} S cm^{-1} at room temperature. Temperature dependence behavior of electrical conductivity curve follows Arrhenius nature in the temperature range of 303 K - 373 K. Pattern of dielectric constant and their

losses as a function of frequency and temperature have been studied and is being explained on the basis of electrode interfacial polarization effect. Frequency dependent conductivity spectra obey the Jonscher's power law.

Keywords: Nano composite, Polymer gel electrolyte, Conductivity spectra.

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POSTER ID- 208_Sachdeva _ICRCS2017

Reactivity Of Etoricoxib Based On Computational Study Of Molecular Orbitals, Molecular Electrostatic Potential Surface And Mulliken Charge Analysis

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Etoricoxib is one of the selective cyclooxygenase inhibitor drug which plays a significant role in the pharmacological
management of arthritis and pain. The theoretical investigation of its reactivity is done using Density Functional Theory
calculations. Molecular Electrostatic Potential Surface of etoricoxib and its Mulliken atomic charge distribution are used for the prediction of electrophilic and nucleophilic sites. The detailed analysis of its frontier molecular orbitals is done. Several reactivity descriptors like global hardness, electrophilicity index, electronegativity and chemical potential are calculated.

POSTER ID- 209_Chopra _ICRCS2017

APPLICATION OF PARTICLE SWARM OPTIMIZATION FOR ECONOMIC LOAD-DISPATCH SOLUTION

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[b] M.Tech. Scholar , Govt. Engineering College Bikaner (India)-334004

Abstract - This paper offers the use of Particle Swarm Optimization (PSO) algorithm for solving Economic Load Dispatch problem which comes under category of large-scale, non- convex optimization problems. Although PSO is similar in nature with evolutionary computation techniques such as Genetic Algorithms (GA). However, unlike GA, PSO does not have evolution operators such as crossover and mutation. The potential solutions (called particles), fly through the problem space by following the current optimum particles.

Keywords: Particle Swarm Optimization, Economic Load Dispatch problem

POSTER ID- 210_Chopra _ICRCS2017

PERFORMANCE ENHANCEMENT OF ECONOMIC LOAD-DISPATCH USING GREY WOLF OPTIMIZER TECHNIQUE

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[b] M.Tech. Scholar , Govt. Engineering College Bikaner (India)-334004
Abstract - **In recent times, the importance of economic load - dispatch in the power system is gaining substantial att**

ention. Since power systems are becoming larger and intricate due to boost in load demand, fuel demand for power plants is increasing which guides to hike in prices and levels of emissions into the surroundings. Therefore, it is necessary to optimize operation of utilities in power system not only from view of saving the fuel cost but also for environmental safeguarding. An attempt has been made to improve the performance of economic load-dispatch using Grey Wolf Optimizer (GWO) technique.

Keywords: Grey Wolf Optimizer , Economic Load-Dispatch

POSTER ID- 211_Sachdeva _ICRCS2017
Reactivity Of Etoricoxib Based On Computational Study Of Molecular Orbitals, Molecular Electrostatic Potential Surface And Mulliken Charge Analysis
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Etoricoxib is one of the selective cyclooxygenase inhibitor drug which plays a significant role in the pharmacological
management of arthritis and pain. The theoretical investigation of its reactivity is done using Density Functional Theory
calculations. Molecular Electrostatic Potential Surface of etoricoxib and its Mulliken atomic charge distribution are used for the prediction of electrophilic and nucleophilic sites. The detailed analysis of its frontier molecular orbitals is done. Several reactivity descriptors like global hardness, electrophilicity index, electronegativity and chemical potential are calculated.

POSTER ID- 212_Singh _ICRCS2017
Synthesis, Characterization and Biological Studies of Cu(II) and Zn(II) Metal Complexes of Schiff base derived from 4-Amino-3-mercapto-6-methyl-5-oxo-1,2,4-triazine
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Department of Chemistry, Kurukshetra University, Kurukshetra 136119, India
Corresponding author E-mail: kiransinghkuk@yahoo.co.in
Abstract:
Cu(II) and Zn(II) metal complexes have been synthesized with Schiff base derived by the condensation of 4-amino-3-mercapto-6-methyl-5-oxo-1,2,4-triazine with 2,5-dimethoxybenzaldehyde. Newly synthesized complexes were characterized by IR, NMR, electronic, magnetic moment measurements and thermal studies. On the basis of above technique square planar geometry for Cu(II) and octahedral geometry around Zn(II) complexes have been proposed. Biological activity of Schiff base & its metal complexes have also been checked against various microbes and compare the studies.

POSTER ID- 213_Rajkamal _ICRCS2017
Chloramine T mediated facile synthesis of 1,2,4-triazole derivatives bearing benzothiazolyl and pyrazolyl moieties as pharmacologically active molecules
Raj Kamal[*], Vipan Kumar, Ravinder Kumar

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Keywords: Chloramine T, fused 1,2,4-triazole, benzothiazole, pyrazole.
Abstract:
In attempt to make significant pharmacologically active molecule, we report herein the synthesis of some novel 1,2,4-triazole derivatives having benzothiazolyl and pyrazolyl moieties as pharmacologically active molecules. Consequently, a simple and highly efficient one pot synthesis of 3-(3-aryl-1-phenyl-1*H*-pyrazol-4-yl)-[1,2,4]-triazolo[3,4-*b*]-1,3-benzothiazoles has been presented simply by condensation reaction of the 2-hydrazinobenzothiazole with appropriate 3-aryl-1-phenyl-1*H*-pyrazole-4-carbaldehyde derivative followed by oxidation of the corresponding formed hydrazone with chloramines-T in ethanol.

POSTER ID- 214_Sharma _ICRCS2017

Role of Polytungstometalate as Photocatalyst for Removal of Brilliant green

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ABSTRACT
Waste water engineers are concerned to develop some advanced treatment processes for treatment of waste water. Photocatalysis is an attractive route that can oxidize the organic matter present in aqueous system completely. In the present paper, iron containing polytungstometalate was used as a photocatalyst for the removal of brilliant green in aqueous solution. The effect of various operational parameters such as effect of pH, concentration of dye, amount of semiconductor and light intensity were studied. Kinetic studies revealed that the photocatalytic degradation of brilliant green follows pseudo- first order kinetics. A tentative mechanism for the removal of brilliant green was proposed and it was observed that superoxide anion radical $O_2^{-\cdot}$ was responsible for the degradation of dye.
Keywords: Photocatalysis, Polytungstometalate, Brilliant green.

POSTER ID- 215_Lokhande _ICRCS2017

Solvent Extraction and spectrophotometric determination of Copper (II) using 2 – hydroxy 1-naphthaldehyde thiosemicarbazone (HNT) as an analytical reagent

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ABSTRACT
2 – hydroxy 1- naphthaldehyde thiosemicarbazone (HNT) is synthesized in laboratory and characterized by NMR, IR and elemental analysis for its purity. This reagent forms a light green coloured complex with Cu (II) which can be quantitatively extracted into ethyl acetate at pH 7. Complex in ethyl acetate shows an intense absorption peak 404 nm. It is observed that Beer's law is obeyed in the range of 10µg to 100µg of metal solution. It gives linear and reproducible graph under appropriate conditions, the complex having a molar absorptivity of 0.338×10^6 L mol^{-1} cm^{-1}, Sandell's sensitivity calculated was found to be 3.380×10^{20} µg cm^{-2}. Nature of the extracted complex, determined by Job's continuous variation method, Slope ratio method and Mole ratio method shows that the composition of Cu (II): HNT is 1:1. Interference by various ions is studied and masking agents used where required. The proposed method has been applied for the determination of Cu (II) in brass and monel metal. The results of the analysis are found to be comparable with those obtained by standard method.

Keyword: Copper (II); solvent extraction-spectrophotometric determination; 2 – hydroxy 1-naphthaldehyde thiosemicarbazone (HNT).

POSTER ID- 216_Sahu _ICRCS2017

Study of Modified Electron Band Dispersion and Density of States Due To High Frequency Phonons in Graphene-On-Substrates

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Abstract
The synthesis of pristine graphene has attracted intense theoretical and experimental studies. The pristine graphene with honey-comb lattice structure displays semiconducting behavior with conduction and valence bands touching each other at Dirac point. It is pertinent to create a band gap $\sim$ 1 eV like the semiconductors to use graphene for spintronic applications. We propose here a theoretical model for band gap opening in graphene-on-substrate taking into account electron-phonon and Coulomb interactions in high frequency limit of phonon vibrations. The Hamiltonian consists of a tight-binding model study of π electron hopping's up to third-nearest-neighbors. The Hamiltonian describes the substrate effect, where A-site energy is raised by $+\Delta$ and B-site energy is suppressed by $-\Delta$ and hence producing a band gap of 2Δ , a few m eV energy. Further, we consider Hubbard type electron-electron repulsive interactions at A- and B-sub lattices which are considered within Hartree–Fock mean-field approximation. The electrons in the graphene plane interact with the phonons present in the polarized substrate in presence of phonon vibrational energy within harmonic approximation. The temperature dependent electron occupancies at A-and B- sub lattices for up and down spins are computed numerically and self-consistently. Using these electron occupancies, we calculate electron band dispersion and density of states which are studied for the effects of electron-phonon interaction, high phonon frequency, Coulomb energy and substrate induced gap.
Keywords: Graphene, Tight-binding model, electron-phonon interaction

POSTER ID- 217_Vijayshree _ICRCS2017

_Raising Awareness About Environment Through Ecotourism

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ABSTRACT
Ecotourism or nature travel has become the fastest growing segment of the tourism industry. According to The International Ecotourism Society (TIES) ecotourism is a responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.
The mission to develop this type of tourism is to raise awareness amongst travellers about the natural setting or place that they visit for and at the same time minimize any corrosive (in terms of negative impact on environment) impact of the human activity. The main characteristics of Ecotourism, concern mainly destinations where the cultural and environmental heritage are in abundance, in certain parts of our planet.
Ecotourism is about *uniting conservation, communities, and sustainable travel*. It *provides* effective economic incentives for conserving and enhancing bio-cultural diversity and helps protect the natural and cultural heritage of our beautiful planet by offering market-linked long-term solutions. It is an

effective vehicle for empowering local communities around the world to fight against poverty and to achieve sustainable development by increasing local capacity building and employment opportunities. It promotes greater understanding and appreciation for nature, local society, and culture.
Hospitality industry has a great role in ecotourism so it should incorporate the philosophy of all the vital concepts of ecotourism with sustainable tourism. According to Zoe Chafe (2005), sustainable tourism is the form of tourism that meets the need of present tourist and host regions while protecting and enhancing opportunities for future. Thus ecotourism aims to focus the discussion of ecotourism on the management and assessment of sites, destinations, communities and resources.
Key Words: Conservation, communities, sustainable travel, corrosive impact.

POSTER ID- 218_Ramesan_ICRCS2017

Effect of Chemically Modified and Unmodified Pumice Particles on the Mechanical and Dielectric Properties of Poly (vinyl alcohol)/ Poly (vinyl pyrrolidone) Blend

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Abstract.
Poly (vinyl alcohol) (PVA)/ poly (vinyl pyrrolidone) (PVP) blend with different content of chemically modified and unmodified pumice particles were prepared and characterized by XRD, SEM, impedance analyzer and tensile strength measurement. The XRD patterns indicated the amorphous domains of the blend decreases by the addition of pumice particles and the modified pumice blend composite showed a more ordered arrangement of macromolecular chain as compared to unmodified PVA/PVP composite. SEM images revealed the uniform dispersion of pumice particles in modified composite than unmodified samples. The unmodified blend composite with 15 wt. % of sample shows higher dielectric properties than pure blend, whereas the chemically modified composite shows higher dielectric properties at 10 wt. % of loading. The tensile strength of chemically modified composite was much higher than the unmodified PVA/PVP composite.

POSTER ID- 219_Saha _ICRCS2017

Removal of Toxic Metals from Drinking Water : Few Technologies

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ABSTRACT
Contamination in drinking water by heavy metals has become an eco- toxicological hazard in the past decades. At trace level many of these elements are necessary to support life. However, at elevated levels they become a significant health hazard. Toxic heavy metals such as lead, cadmium, copper, zinc, chromium, arsenic, mercury, manganese etc. are among the major contaminates in the drinking water. Safe drinking water is the current issue for the survival of a living habitat. This article is about the application of different technologies to remove heavy deadly metals from drinking water.
Key Words: Heavy metals, Conventional methods, Ion exchange, Bioadsorbents.

POSTER ID- 220_Gahlot _ICRCS2017

Investigation of Photochemical Smog In Bikaner City

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Abstract:*Air is a component of ecosystem which is a necessary resource for the survival of life on earth. The fresh air all over the Rajasthan is getting polluted thus decreasing the strength of the fresh air. Because of production of too much pollutants by industries and also from the vehicles, the air has different kind of smog in a day hours.* ***AIR QUALITY INDEX (AQI)*** *is used to characterize the quality of the air at a given location* ***(kotegate****-'middle center of the city vehicle polluted rush area',* ***industrial area****- 'outside from the city with industrial polluted area') Photochemical smog is created by sunlight promoted reactions in the lower atmosphere, which secondary pollutant such as PM, SO_2produce. These pollutants have destructive effects on human health, vegetation and materials. In this study the phenomena of photochemical smog in Bikaner city is investigated and studied. Data Analysis by RDS system.*

Keywords*: Air pollution, photochemical smog, Air quality index*

POSTER ID- 221_Chopra _ICRCS2017
ANFIS BASED METHODOLOGY FOR FAULT DIAGNOSIS OF POWER TRANSFORMER

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b M.Tech. Scholar , Govt. Engineering College Bikaner (India)-334004

Abstract -- In this paper, for improvement in the diagnostic results, the Adaptive Neuro Fuzzy Inference System(ANFIS) is proposed for condition monitoring of power transformers. In the oil immersed power transformer, to improve the fault diagnosis of DGA techniques Adaptive Neuro Fuzzy Inference System is being used. This would integrate the fuzzy system and neural network to present more effectiveness in the diagnosis.
Keywords: Adaptive Neuro Fuzzy Inference System (ANFIS), Condition Monitoring.

POSTER ID- 222_Chopra _ICRCS2017
INTELLIGENT TECHNIQUE FOR FAULT DIAGNOSIS PERFORMANCE IMPROVEMENT

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b M.Tech. Scholar, Govt. Engineering College Bikaner (India)-334004
Abstract - In this paper, to overcome the drawbacks of conventional dissolved gas analysis techniques in fault diagnosis of power transformer ,Artificial Intelligence based tool i.e. Fuzzy Inference System, is proposed to be used for diagnosis of incipient faults which occurs in power transformer. The improvement in fault diagnosis performance by using this technique supports the proposed methodology.
Keywords: Fuzzy Logic, Fault Diagnosis.

POSTER ID- 223_Kaur _ICRCS2017

Adsorption Of CO And O2 Molecules On Li Metal Adsorbed Graphene: Search For Graphene Based Gas Sensors

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Adsorption of small gas molecules (such as CO and O2) on pristine graphene (PG) and Li-adsorbed graphene (PG-Li) have been investigated using first principles methods within density functional theory (DFT). The adsorption energy, equilibrium graphene-molecule distance, density of states (DOS) and PDOS of small gas molecules adsorbed on PG and PG-Li have been calculated. We find that electronic properties of PG are sensitive to the adsorption of O2 molecule while it remains insensitive to the adsorption of CO molecule. We also notice that PG-Li has a higher chemical reactivity towards the gas molecules as compared to PG and these molecules have higher adsorption energy on this surface. Moreover, the strong interactions between PG-Li and the adsorbed molecules (as compared to PG and gas molecules) induce dramatic changes to the electronic properties of PG adsorbed with Li and make PG-Li a promising candidate as sensing material for CO and O2 gases.

POSTER ID- 224_Sharma _ICRCS2017

COMPARATIVE STUDY OF OXIDATION OF INOSITOL BY TERIARY BUTYL CHROMATE AND TERTIARY AMYL CHROMATE

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ABSTRACT

Oppenauer and Oberrauch introduced tert. – butyl chromate (TBC) an oxidizing agent and employed it in a mixture of 2-methylpropan and an inert none-polar organic solvent, either non-polar solvent alone in a mixture of the non-polar solvent and acetic acide. They observed that increased acidity made the oxidation more vigorous and less selective. We hoped to increase the selectivity of the reagent by performing the oxidation in the presence of an organic base. The chromic anhydride-pyridine complex seemed less suited to our purpose since this reagent, prepared and used as a suspension in pyridine, is less easy to handle in small quantities. We now report a series of experiments inteneded to assess the analytical value of tert.-butyl chromate and tert. Amyl chromate (TAC). A modified method for safe preparation of relatively large amount of new oxidant di-t-butyl chromate has been developed. In various oxidations employing this oxidant in three solvents, n-pentane, benzxene, and toluence, were used. Benzene was found to be superior from other two. Using both di-t-butyl chromate and di-t amyl chromate neopentyl alcohols has been oxidized to tri methy acetaldehyde in fair yield. Various secondary alcohols has been oxidized with di-butyl chromate in benzene to correspondeing ketones in nearly quantitive yield. Oxidation of highly

branched secondary alcohols has significantly dpressed the cleavage reaction they have been previously shown to undergo on oxidation with chormic acid. When excess pyridine is added the Cleavage reaction is further reduced to 0-10 percent and yield of ketone raised to 90-97 percent. Inosital 1.2 has been oxidized by TBC and TAC in different molar rasias in presence of water solvent. 3-14. On this paper the preparation and charatervization of the product has been discussed. effective catalysts for asymmetric reactions of spiroindole moieties than particles adsorbed on exteriors or conventional support materials with higher ee value ever since reported in literature.

POSTER ID-225 _Mondala _ICRCS2017
Structural and Optical Investigation in Er3+ Doped Y2MoO6 Phosphors

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Abstract: The Er3+ doped Y2MoO6 phosphors have been structurally and optically characterized by X-ray Diffraction (XRD), Field emission scanning electron microscopy (FESEM), UV-Vis absorption spectroscopy and frequency upconversion (UC) emission studies. The crystal and the particles size are found to be ~ 85 nm and ~ 200 nm from XRD and FESEM analysis. The intense peak at ~ 206 nm in the UV-Vis absorption spectroscopy is attributed due to the charge transfer transition between the Mo6+ and the O2- ions in the MoO4 group in the host molybdate. The frequency UC emission studies of the prepared phosphors under 980 nm diode laser excitation shows the intense UC emission in the 0.3 mol% concentrations for the Er3+ ions. In the UC emission spectra, the emission peaks at green (~ 525 nm and ~ 546 nm) and red (~ 656 nm) bands are corresponding to the 2H11/2, 4S3/2 → 4I15/2 and 4F9/2 → 4I15/2 transitions of Er3+ ions. The mechanisms involved in the UC process have been explored with the help of energy level diagram. Moreover, the CIE point (0.31, 0.60) lie in the green colour region which indicates that the developed phosphor have suitable applications in NIR to visible upconverter and in making green light display devices.

POSTER ID- 226_Lamba _ICRCS2017
Biological Important Co (II) Ternary Complexes Derived From 2-Substituted Benzothiazoles and Amino Acids

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Abstract : Biological important ternary complexes of the type [CoCl(L-L)(A-A)(H2O)] and [Co(L-L´)(A-A)(H2O)2], where A-A = Glycine (Gly), Alanine (Ala), L-L = 2-(2´-aminophenyl) benzothiazole (APBT) and L-L´ = 2-(2´-hydroxyphenyl) benzothiazole (HPBT), 2-(2´-mercaptophenyl) benzothiazole (MPBT) have been synthesized. These complexes have been characterized by elemental analysis, molecular weight determination, conductivity, magnetic measurements, infrared, electronic spectral and TGA studies. On the basis of above described studies an octahedral geometry has been suggested for these complexes. All these complexes are coloured, thermally stable, monomeric and non-electrolytic in nature. The ligands and their metal complexes were tested against pathogenic fungi Aspergillus niger and Fusarium oxysporum to assess their fungicidal properties, the antifungal activity data reveals that these metal complexes are found more fungitoxic than the parent ligands.
Keywords : Benzothiazole; Spectral studies; Conductivity; Antifungal activity.

POSTER ID- 227_Singh _ICRCS2017
Chemical Sensing study of acid on iron phthalocyanine pyridine thin film

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Metal Phthalocyanines are class of organic semiconductors and have considerable interest because of their potential applications in photovoltaic cell elements, organic light emitting diodes, sensors, printing inks photoconductors, conducting polymers, liquid crystals. In molecular crystals, the molecular energy levels are relatively less disturbed due to large intermolecular separation. Molecules forming a crystal are held together by weak attractive vander waals forces and because of this, they can be used to construct new flexible electronic devices. The instantaneous fluctuations in the electronic distribution cause momentary multipoles in adjacent molecules and interaction between these multipoles results in an attractive force. The most important forms of metal phthalocyanine are α and β forms. Most organic semiconductors should really be designated as insulators and are called semiconductor because their electric conductivity increases exponentially with temperature. Thin films of these materials have been prepared on glass substrates by the thermal evaporation technique by keeping the substrates at room temperature and base pressure ≈ 2 □ 10-5 mbar, using a molybdenum boat. The deposited films have been kept in the deposition chamber in the dark for 24 h to attain thermodynamic equilibrium. Pre-deposited thick indium electrodes on well- glass substrates are used for the electrical contacts. The dark conductivity of many organic compounds depends on molecular structure and increases with increasing number of π-electrons in the individual groups of the compounds. The thermal activation energy in the intrinsic region and impurity scattering region can be found from Arrhenius plot. The crystalline and amorphous nature of these thin film is characterized by using X-ray diffraction technique. The photoconductivity and dark conductivity of these thin films complexes changes when exposed to acids and gases.

POSTER ID- 228_Sharma _ICRCS2017
FTIR Study Of RhB in Some Solvents
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Fourier Transform Infra red spectra of RhodamineB dye in powder form and in different solvents are reported. Positions of some of the observed FTIR bands show noticeable change in solvents. The bands, which shift, have contributions from the vibrational motion of nitrogen atoms of the diethylamine groups, oxygen atom of the carboxylic group attached to the phenyl ring and oxygen atom of the Xanthene ring.

POSTER ID- 229_Suthar _ICRCS2017
Study of Thermodynamic and Transport Properties of Binary Liquid Mixture of Diesel with Biodiesel At 298.15K
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Abstract. Properties of diesel and biodiesel (produced from corn oil) are used. Densities and viscosities of binary mixture of diesel with biodiesel (produced from corn oil) have been computed by using liquid binary mixture law over the entire range of compositions at T=298.15K and atmospheric pressure. From the computed values of density and viscosities, viscosity deviation ($\Delta\eta$), the excess molar volume (VE) and excess Gibbs energy of activation of viscous flow ($\Delta G^{\#E}$) have been calculated. The results of excess volume, excess Gibbs energy of activation of viscous flow and viscosity deviation have been fitted to Redlich -Kister models to estimate the binary coefficients and standard errors.The results are communicated in terms of the molecular interactions and the best suited composition has been found.

POSTER ID-230 _Janagal _ICRCS2017

Study of Particle Size Distribution of China Clay of Nagaur District, Rajasthan, India

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Abstract. This paper investigates the particle size distribution of china clay samples collected from china clay deposists of Nagaur district viz from Junjala, and Indawar. First mineralogical study of all collected sample were recorded. The particle size distributions of four samples (A1, A3, A4 and A6) were determined using laser technique. The sample A4 has higher percentage of fine particles compare to others.
Keywords: China Clay, Particle Size Distribution,Nagaur District, Rajasthan.

POSTER ID- 231_Maru _ICRCS2017

Variation in "physico chemical parameters of waste water" CET & ECB of Bikaner district

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Abstract:
Water is basic necessity pure filtered unaltered water is the only water that will hydrate our cells. This paper deals with the Physico - Chemical parameter of waste water deposit around CET & ECB Bikaner, Rajasthan. This paper aims to determine the polluted sources responsible for the poor drinking water quality and to suggest a scientifically sound water quality management plan to improve the same water. During year 2017 water sample were taken from sites and analyzed for pH, TDS, Alkalinity, Total Hardness, Chloride, Water temperature, Specific Conductivity using standard techniques in laboratory. Significant variations were also observed between the Physico – Chemical characteristics of studied water.