

# **Theme Wise Programme**

## OXIDE ELECTRONICS

**Date** 12<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs**  
M.S. Ramachandra Rao  
Dhanvir Singh Rana  
M K Jayaraj  
Shaibal Mukherjee  
K. Mohan Kant

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Prellier Wilfred</u>	Functional Oxide thin film for diverse applications
14.30-15.00 hrs Invited Talk (2)	<u>D. Nakamura</u> Y. Wakiyama H. Oshima M. Higashihata H. Ikenoue N. J. Vasa, and M. S. R. Rao	Fabrication of Oxide Semiconductor Nano/Micro Crystals for Optoelectronic Application
15.00-15.30 hrs Invited Talk (3)	<u>Dennis V. Christensen</u> and Nini Pryds	Tuning the electronic and magnetic properties of $\gamma$ -Al <sub>2</sub> O <sub>3</sub> /SrTiO <sub>3</sub>
15.30-15.45 hrs Oral (1)	<u>Ashish Khandelwal</u> , L. S. Sharath Chandra M. K. Chattopadhyay and R. J. Choudhary	Temperature and frequency dependence of dielectric properties of Fe <sub>3</sub> O <sub>4</sub> thin film deposited on Si substrate using THz time domain spectroscopy
15.45-16.00 hrs Oral (2)	<u>Shailendra Kumar</u>	Study of Valence Electron Plasmons in Oxides using Photoelectron Spectroscopy

## PHOTONIC MATERIALS

**Date** 12<sup>th</sup> February 2019  
**Venue** Materials Engineering Lecture Hall Theatre  
**Co chairs**  
Mahesh Hariharan  
G.V. Pavan Kumar  
Sankar Kumar Selvaraja  
Kamal Lohani  
K V Adarsh  
Tarun K Sharma

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Reji Varghese</u>	DNA-Decorated Soft Nanostructures
14.30-15.00 hrs Invited Talk (2)	<u>Debjani Karmakar</u>	2D Graphene Analogous Heterostructures: Doping Modulated Exciton and Transport
15.00-15.30 hrs Invited Talk (3)	<u>M Hariharan</u>	Ultrafast Excited State Dynamics in Twisted Aromatics

15.30-16.00 hrs Invited Talk (4)	<u>Ambarish Ghosh</u>	Plasmonic nanoparticles on graphene, helices and motors
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## NANOMATERIALS DEVICES AND APPLICATIONS

**Date** 12<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** Kaushik Ghosh  
Akhilesh Pandey  
M M Shaijumon  
B L V Prasad  
Pika Jha  
C V Yelamaggad

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Subhasis Ghosh</u>	Magnetic Skyrmions in Cu <sub>2</sub> OSeO <sub>3</sub>
14.30-15.00 hrs Invited Talk (2)	<u>S. Annapoorni</u>	Interfacial interactions in hard/soft magnetic multilayers: Experimental and theoretical studies
15.00-15.30 hrs Invited Talk (3)	<u>P. S Alegaonkar</u>	Application engineering of nano-carbons in strategic sector
15.30-15.45 hrs Oral (1)	<u>Amitesh Kumar</u> Mangal Das, Sanjay Kumar, Ruchi Singh, Pawan Kumar Abhinav Kranti and Shaibal Mukherjee	Role of interface modulation during resistive switching for ZnO based RRAMs
15.45-16.00 hrs Oral (2)	<u>S. Mukherjee</u> S. Jana , S. Das and S. K. Ray	MoS <sub>2</sub> -PbS Hybrid Heterostructure for Visible to Infrared, Broadband Photodetector

## MULTIFERROICS

**Date** 12<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Rajeev Ranjan  
Ranjith Ramadurai  
Venimadhav Adyam  
A Sundaresan  
P Murugavel

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Jun Hee Lee</u>	Designing multistate ferroelectric-ferromagnetic materials for neuromorphic computation
14.30-15.00 hrs Invited Talk (2)	<u>K Kimura</u> T. Katsuyoshi, P. Babkevich, M. Toyoda, K. Yamauchi, H. M. Rønnow, Y. Sawada, S. Kimura, and T. Kimura	Anisotropic magnetoelectric response from convex-shaped spin clusters

15.00-15.30 hrs Invited Talk (3)	<u>A Arockiarajan</u> Sk. M. Subhani	Nonlinear Studies on Layered Magnetolectric (ME) Composites
15.30-16.00 hrs Invited Talk (4)	<u>Ramamoorthy</u> <u>Boomishankar</u>	Organic and Organic-Inorganic Hybrid Ferroelectric Materials Supported by Amino-phosphorus (V) Scaffolds

## COMPUTATIONAL MATERIALS SCIENCE

**Date** 12<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Abhishek K Singh  
Manish Jain  
Umesh V Waghmare

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Udo Schwingenschlög</u>	Ab-initio Calculations of the Thermoelectric Properties of MXenes
14.30-15.00 hrs Invited Talk (2)	<u>G.P. Das</u>	Computational design and functionalization of 2D materials and their heterostructures
15.00-15.30 hrs Invited Talk (3)	<u>Vijay Kumar</u>	Novel nanostructures of boron – Fullerenes, nanotubes, and borophenes
15.30-15.45 hrs Oral (1)	<u>Rinkle Juneja</u> Ravindra Shinde and Abhishek K. Singh	Pressure-Induced Topological Phase Transitions in CdGeSb <sub>2</sub> and CdSnSb <sub>2</sub>
15.45-16.00 hrs Oral (2)	<u>Nirpendra Singh</u> and Udo Schwingenschlogl	A route to permanent valley polarization in monolayer MoS <sub>2</sub>

## CHARACTERIZATION TECHNIQUES

**Date** 12<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** S.M. Yusuf  
Ranjan Datta  
Chandrabhas Narayana  
S Arumugam

**Session I : 14.00-15.45 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>B R Sekhar</u>	Tuning of Surface State Bands in some Topological Insulators
14.30-15.00 hrs Invited Talk (2)	<u>P N Santhosh</u>	Powder diffraction: Understanding the structure property Correlation in Materials
15.00-15.30 hrs Invited Talk (3)	<u>K R Priolkar</u>	Understanding functional materials with EXAFS

15.30-15.45 hrs Oral (1)	<u>Sarathlal Koyiloth Vayalil</u> K. G. Ajesh, A. Mukhopadhyay M. Schwartzkopf, Stephan . V. Roth and P.S. Anil Kumar	An in-situ $\mu$ GISAXS investigation of the growth of Permalloy thin films on ion beam eroded self organized nanotemplates
15.45-16.00 hrs	<u>Mahendra B Chaudhari</u>	Shimadzu Analytical India Pvt Ltd (Sponsor's talk)

## VAMAS LECTURES

**Date** 12<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Time** 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>Daisuke Fujita</u>	International Standardization of Nanoscale Characterization using Scanning Probe Microscopy through VAMAS
14.30-15.00 hrs Invited Talk (2)	<u>Fernando A. Castro,</u> George Koutsourakis, Alina Zoladek- Lemanczyk, Yameng ao Sebastian Wood and James C. Blakesley	In Situ Characterization of Degradation of Printed Solar Cells
15.00-15.30 hrs Invited Talk (3)	<u>S. R. Dhakate</u>	Role of material metrology for creating quality research and standardization
15.30-16.00 hrs Invited Talk (4)	<u>Sam Gnaniah</u>	VAMAS measurement and standards research increases the take-up of emerging, and complex materials

## OXIDE ELECTRONICS

**Date** 12<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs**

M.S. Ramachandra Rao  
Dhanvir Singh Rana  
M K Jayaraj  
Shaibal Mukherjee  
K. Mohan Kant

**Session II : 16.30-18.30 hrs**

16.30-17.00 hrs Invited Talk (4)	<u>Werner PAULUS</u>	Sub-mesoscale oxygen ordering in $(\text{Nd/Pr})_2\text{NiO}_{4+\delta}$ explored by in situ neutron powder and synchrotron single crystal diffraction
17.00-17.30 hrs Invited Talk (5)	<u>Ajay Agarwal</u>	Metal Oxides for Gas Sensing
17.30-18.00 hrs Invited Talk (6)	<u>ARIANDO</u>	Interface-Engineering and Emergent Phenomena in Oxide Heterostructures

18.00-18.15 hrs Oral (3)	<u>Aldrin Antony</u> Swasti Bhatia, Kurias K Markose, Manu Shaji and Pradeep R. Nair	Selective charge extraction from silicon using Transition metal oxides deposited at low temperature
18.15-18.30 hrs Oral (4)	<u>Mukesh Kumar</u>	

## PHOTONIC MATERIALS

**Date** 12<sup>th</sup> February 2019  
**Venue** Materials Engineering Lecture Hall Theatre  
**Co chairs** Mahesh Hariharan  
G.V. Pavan Kumar  
Sankar Kumar Selvaraja  
Kamal Lohani  
K V Adarsh  
Tarun K Sharma

### Session II : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (5)	<u>Shankar Kumar</u> <u>Selvaraja</u>	Effect of material properties on silicon integrated photonic devices
17.00-17.30 hrs Invited Talk (6)	<u>Rajeev N Kini</u>	Terahertz spectroscopy: from fundamental science to industrial applications
17.30-18.00 hrs Invited Talk (7)	<u>Shourya Dutta Gupta</u>	Plasmonic metasurfaces for cancer diagnosis and active light modulation
18.00-18.15 hrs Oral (1)	<u>Venkataramana Bonu</u> Arindam Das and Harish C. Barshilia	Sub-wavelength Waveguide Properties of Different Morphological and Surface Functionalized SnO <sub>2</sub> Nanowires
18.15-18.30 hrs Oral (2)	<u>Arup R. Pal</u> and Santanu Podder	Plasmonic Titanium Nitride based Hot carrier Infrared responsive Devices

## NANOMATERIALS DEVICES AND APPLICATIONS

**Date** 12<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** Kaushik Ghosh  
Akhilesh Pandey  
M M Shaijumon  
B L V Prasad  
Pika Jha  
C V Yelamaggad

### Session II : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (4)	<u>Harish C Barshilia</u>	Current Trends and Future Challenges in Spectrally Selective Coatings for Solar Thermal Power Generation Applications
17.00-17.30 hrs Invited Talk (5)	<u>Tata Narasinga Rao</u>	Translational Nanomaterials Research (From Laboratory to the market)

17.30-17.45 hrs Oral (3)	<u>Jude T. Inyalot</u> Emma P. Mukhokosi Devanshi Bhardwaj D. Sheela, Saluru B. Krupanidhi and Arun M. Umarji	High Photoresponse VO <sub>2</sub> (M1) Thin Films synthesized by d.c reactive sputtering
17.45-18.00 hrs Oral (4)	<u>G. V. Sai Manohar</u> and <u>K. K. Nanda</u>	Engineering of photo-induced electron transfer for the enhanced photoresponse through suppression of charge carrier recombination
18.00-18.30 hrs Invited Talk (6)	<u>Mayank Shrivastava</u>	Defect Assisted Atomic Orbital Overlap Engineering for Metal - 2D Material's Contacts & Record High Performance 2D Material Transistor Technologies

## MULTIFERROICS

**Date**                    **12<sup>th</sup> February 2019**  
**Venue**                   Hall A, National Science Seminar Complex  
**Co chairs**              Rajeev Ranjan  
                                   Ranjith Ramadurai  
                                   Venimadhav Adyam  
                                   A Sundaresan  
                                   P Murugavel

**Session II        : 16.30-18.00 hrs**

16.30-17.00 hrs Invited Talk (5)	<u>P. Murugavel</u> and A. Pal	Tailoring of magnetic ordering and magnetodielectric reversal in multiferroic rare earth manganites
17.00-17.30 hrs Invited Talk (6)	<u>Varadarajan Srinivasan</u> and Paresch Chandra Rout	Epitaxial Strain Control of Hole-doping Induced Phases in a Multiferroic Mott Insulator Bi <sub>2</sub> FeCrO <sub>6</sub>
17.30-17.45 hrs Oral (1)	<u>Goverdhan Reddy Turpu</u> Ganesh Bera, V. R. Reddy, P. Mal and P. Das	Structural, Magnetic and Magneto - electric studies of Fe <sub>1-x</sub> Cr <sub>x</sub> VO <sub>4</sub> Type II Multiferroic Material
17.45-18.00 hrs Oral (2)	<u>Bhavna C Keswani</u> S. M. Ansari, Deepashri Saraf, A. L. Kshirsagar, S. I. Patil, A. R. James C. V. Ramana and Y. D. Kolekar	Ca modified BaTiO <sub>3</sub> lead free piezoelectrics: Experimental and Theoretical studies

## PHOTOVOLTAICS

**Date**                    **12<sup>th</sup> February 2019**  
**Venue**                   Hall C, National Science Seminar Complex  
**Co chairs**              Sushobhan Avasthi  
                                   Murali Banavoth  
                                   Habib M Pathan  
                                   Dinesh Kabra

**Session I        : 16.30-18.00 hrs**

16.30-17.00 hrs Invited Talk (1)	<u>Habib M Pathan</u>	Quantum Confinement Free Nanocrystalline Metal Oxides for Solar Cell Applications
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17.00-17.30 hrs Invited Talk (2)	<u>Nandu. B. Chaur</u>	Development of low-cost thin film photovoltaic solar cell devices and effect of Plasmonic nanoparticles
17.30-17.45 hrs Oral (1)	<u>Prashant K. Baviskar</u> Babasaheb R. Sankapal and Habib M. Pathan	Chemically grown ZnO towards quantum dot and dye sensitized solar cells
17.45-18.00 hrs Oral (2)	<u>Ashish Kulkarni, Ajay Jena, Masashi Ikegami</u> and Tsutomu Miyasaka	Solvent Engineering to Enhance the Performance of Silver-bismuth Halide Material for Lead-free Perovskite Solar Cells

## MATERIALS FOR ENERGY AND ENVIRONMENT

**Date** 12<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Sebastian Peter  
Vivek Polshettiwar

### Session I: 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (1)	<u>Swadhin K Mandal</u>	Transition Metal Free Catalytic Reduction
17.00-17.15 hrs Oral (1)	<u>Manjusha Battabyal</u> Minati Tiadi and Raghavan Gopalan	Enhancement of the thermoelectric properties in p-type Mg <sub>3</sub> Sb <sub>2</sub> through band engineering and nanostructuring
17.15-17.45 hrs Invited Talk (2)	<u>Kaustubh R Mote</u>	Developments in solid state NMR tailored for material sciences
17.45-18.00. hrs Oral (2)	<u>Sherine Alex,</u> Kamanio Chattopadhyay and Bikramjit Basu	Tailored specular reflectance properties of bulk Cu based intermetallics
18.00-18.30 hrs Invited Talk (3)	<u>Neeraj Khare</u>	Multifunctional Nanocomposites for Clean Energy Generation and Environmental Remediation

## NITRIDE ELECTRONICS

**Date** 12<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Mahesh Kumar  
Poornendu Chaturvedi  
Thirumaleshwara N Bhat  
Anirban Bhattacharyya  
Suchandan Pal

### Session I : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (1)	<u>Mahesh Kumar</u> and Neeraj Goel	Multifunctional High-Performance MoS <sub>2</sub> /GaN Heterojunction: The Futuristic Optical and Gas Sensors
17.00-17.30 hrs Invited Talk (2)	<u>Praveen Kumar</u> and Pooja D	Directly grown In <sub>x</sub> Ga <sub>1-x</sub> N on Si for efficient energy harvesting and sensing applications
17.30-18.00 hrs Invited Talk (3)	<u>Thirumaleshwara N Bhat,</u> B K Pandey and S B Krupanidhi	BaTiO <sub>3</sub> /GaN Heterojunctions



18.00-18.15 hrs Oral (1)	<u>Rohit Pant</u> Deependra Kumar Singh, Basanta Roul, Arun Malla Chowdhury, K K Nanda and S B Krupanidhi	Self-powered Ultrahigh responsivity of visible-IR blind nonpolar a-GaN based selective UV-A MSM photodetectors
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## **POSTER SESSION**

### **Nitride Electronics**

**Date**                    **12<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

08-Poster-01	Basanta Roul Rohit Pant, Greeshma Chandan, A M Chowdhury, Deependra Kumar Singh, K. K. Nanda and S. B. Krupanidhi	III-Nitrides Hybrid Heterostructures Based Infrared and Visible-Blind Ultra-violet Photodetectors
08-Poster-02	Deependra Kumar Singh, Arun Malla Chowdhury, Rohit Pant, Basanta Kumar Roul, K.K. Nanda and S.B. Krupanidhi	Large area PLD grown MoS <sub>2</sub> thin films on c-plane and a-plane GaN/Al <sub>2</sub> O <sub>3</sub> for UV photodetection
08-Poster-03	Arun Malla Chowdhury, Deependra Kumar Singh, Rohit Pant, Basanta Roul, Greeshma Chandan, K K Nanda and S B Krupanidhi	Self-powered, broad band and ultrafast InGaN based photodetector
08-Poster-04	C.H. Shraddha M.S. Murari ManjunathaPattabi and T.N. Bhat	Cu <sub>2</sub> ZnSnS <sub>4</sub> on Molybdenum Foil for Flexible Solar Cell Application

## **POSTER SESSION**

### **Batteries, Fuel Cells and Supercapacitors**

**Date**                    **12<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

12-Poster-01	A. Rambabu P. Barpanda and S.B Krupanidhi	Fabrication of Layered SnS <sub>2</sub> Thin films for Solid-State Sodium-ion batteries
12-Poster-02	Vikram K. Bharti Ananya Gangadharan and Chandra S. Sharma	Coconut Husk Derived Carbon- Sulfur Composite Electrode for Lithium Sulfur Battery
12-Poster-03	Ishita and Richa Singhal	Synthesis of porous carbon nanofibers from waste polystyrene for supercapacitor application

12-Poster-04	M. Jayachandran R. Jeevani, Helen Annal Therese and T. Vijayakumar	Safety and Electrochemical Performance of Hollow $\text{LiNi}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$ Nano sphere as Lithium-ion Battery Cathode Materials for Space Applications
12-Poster-05	Sajitha Surendren and Biswapriya Deb	$\text{MnO}_2$ coated $\text{V}_2\text{O}_5$ nanowires as electrode material with improved cyclic stability for application in bifunctional electrochromic energy storage devices
12-Poster-06	V.S. Ajay Piriya M. Kamaraj and S. Ramaprabhu	Chemical immobilization of sodium polysulfides by $\text{MoO}_2$ for high performance room temperature sodium sulfur battery
12-Poster-07	Monika Singh and Akhilesh Kumar Singh	Developing a Sr-Containing Anode for Ceria-Based Electrolyte with Electron-Blocking Layer
12-Poster-08	Garapati Meenakshi Seshadhri and Sundara Ramaprabhu	Metal carbide filled nitrogen doped carbon nanotubes anode for enhanced Li-ion storage capability in Li-ion battery
12-Poster-09	Vinayak Shrote Nikhil Choudhary and Kunal Kishore	Fabrication of A Supercapacitor Material With Enhanced Specific Capacitance
12-Poster-10	Narasimharao Maragani K Vijaya Kumar and N.Krishna Jyothi	Structural and Electrical Studies of PAN- $\text{Al}_2\text{O}_3$ Nano composite Gel Polymer Electrolytes for Polymer battery Applications
12-Poster-11	Sujith Kalluri Zaiping Guo, and Jaephil Cho	Better Battery Materials and Electronic Control for Li-ion Battery Systems
12-Poster-12	Pragati Singh and Prabhakar Singh	Influence of sintering temperature on the conductivity of $\text{N}_{0.5}\text{B}_{0.5}\text{TiO}_3$
12-Poster-13	Ajay S. Bangwal and Prabhakar Singh	Anomalous high temperature auto – combustion route of $\text{PrBaCo}_2\text{O}_{6.8}$ as cathode material for IT-SOFC
12-Poster-14	Manisha Chauhan and Prabhakar Singh	Structural and Electrical study of $\text{Sm}_{1.6}\text{Sr}_{0.4}\text{NiO}_4$ as a cathode material for IT-SOFC
12-Poster-15	Shashwat Singh Debasmita Dwibedi and Prabeer Barpanda	Alluaudites as Rich Insertion Hosts for High-Voltage Sodium-Ion Batteries
12-Poster-16	Chinnasamy Murugesan Baskar Senthilkumar and Prabeer Barpanda	Incorporation of Insertion Mechanism in Cobalt Phosphate Based Bifunctional Electrocatalysts for Hybrid Na-air Batteries
12-Poster-17	Deepa Singh Ritambhara Gond, Angalakuthi Rambabu and Prabeer Barpanda	Investigation of Pyrophosphate Cathode Materials for Bulk and Thin Film Rechargeable Batteries
12-Poster-18	V. Sai Pranav B. Senthilkumar and P. Barpanda	Structural Stability and Electrochemical Performance of Boron and/or Fluorine Doped in $\text{P2-Na}_{0.7}\text{MnO}_{2+y}$
12-Poster-19	Shubham Lochab Baskar Senthilkumar and Prabeer Barpanda	Carbon Coated $\text{Na}_4\text{Co}_3(\text{PO}_4)_2\text{P}_2\text{O}_7$ and $\text{Na}_4\text{Ni}_3(\text{PO}_4)_2\text{P}_2\text{O}_7$ : Multifunctional Cathode Materials for Energy storage applications

12-Poster-20	Piyush Avasthi and Viswanath Balakrishnan	90 fold boost in energy density of CVD grown VACNT-TiO <sub>2</sub> hybrid supercapacitor by electrolyte induced microstructure engineering
12-Poster-21	Guruprasad S Hegde and Sundara Ramaprabhu	Manganese Oxide/Carbon Nanofiber Composite as a Free Standing, Binder Free Cathode for Lithium Air Battery
12-Poster-22	M. Haripriya R. Sivasubramanian and Anuradha M. Ashok	Hydrothermal synthesis of NiCo <sub>2</sub> O <sub>4</sub> and the influence of secondary phases in Asymmetric supercapacitors
12-Poster-23	G Prashanth and J. Ezhil	Electrophoretic Deposition Of Aluminium Doped Lithium Lanthanum Zirconate Electrolyte For Microbattery Application
12-Poster-24	Cheluri Nagendra Prasad and Tharanikkarasu Kannan	Synthesis and Properties of Novel Sulfonated Poly (oxyimide) (SPOI) - Membranes Bearing Quinoline Pendant Groups as Side Chains for PEM - Fuel Cell Applications
12-Poster-25	Chinnasamy Sengottaiyan Katshukiko Ariga Lok Kumar Shrestha and Ramasamy Jayavel	Vanadium Sulfide/Reduced Graphene Oxide Composite with Enhanced Supercapacitance Performance
12-Poster-26	Rutuparna Samal Dattatray J Late and Chandra Sekhar Rout	Phase dependent electrochemical energy storage performance of MnO <sub>2</sub> nanostructures
12-Poster-27	Sandhya Rani Mangiseti Sundara Ramaprabhu and M. Kamaraj	Nitrogen doped one dimensional graphene wrapped carbon nanotubes for high Electrochemical Performance
12-Poster-28	Mahboob Ali and Sevi Murugavel	The Anomalous Behaviour in Structural and Electronic Properties of Lithium Iron Phosphate Cathode Material
12-Poster-29	Aisha Siddiqa H. R, Chandan D. H. Nagaraju and Mahesh Padaki	Biomass derived carbon materials as novel electrode materials for super capacitor application
12-Poster-30	S N Karthick K.V. Hemalatha F. Manik Clinton and S. Akshaya	Structural, Electrochemical Repercussion of Chromium in Cobalt Oxide with Graphite
12-Poster-31	Shweta Chalotra Rameez Ahmad Mir Gurbinder Kaur and O. P. Pandey	Oxygen deficient V <sub>2</sub> O <sub>3</sub> and V <sub>3</sub> O <sub>7</sub> as the electrode materials for Double layer and super capacitors
12-Poster-32	G Durai, P. Kuppusami, T.Maiyalagan J.Theerthagiri, P. Vinoth Kumar and Hyun-Seok Kim	Influence of Chromium Content on Microstructural and Electrochemical Supercapacitive Properties of Vanadium Nitride Thin Films Developed by Reactive Magnetron Co-Sputtering Process.
12-Poster-33	Smita Acharya and Ruhi Naz	Understanding of cationic substitutional effect on order/disorder phase transition and accompanied oxy-ion conductivity of La <sub>2</sub> Mo <sub>2</sub> O <sub>9</sub> based system: Electrolyte for IT-SOFC

## POSTER SESSION

### Composites, Light Metals and Alloys

**Date** 12<sup>th</sup> February 2019  
**Time** 14.00-18.30 hrs

14-Poster-01	Prashant Mittal and Nitya Nand Gosvami	In Situ Nanoscale Growth and Tribology of ZDDP Antiwear Tribofilms on AlSi Alloys
14-Poster-02	Vickey Nandal Jayant Jain and Suresh Neelakantan	Microstructure and Mechanical Property of Non-equiatomic AlCoCrFeNi High Entropy Alloy
14-Poster-03	Abinash Panigrahi Hemalata Jena and B Surekha	The effect of clam shell powder on kinetics of water absorption of jute epoxy composite
14-Poster-04	M.S. Murari and Manjunatha Pattabi	Effect of different heat treatment conditions on transformation temperatures in NiTi Shape memory alloys
14-Poster-05	Sai Smruti Samantaray and Ramaprabhu. S	Room temperature hydrogen storage in a graphene based nanocomposite
14-Poster-06	Kunal Kishore Nikhil Choudhary and Vinayak Shrote	CREATING A POLYMER-CERAMIC COMPOSITE WITH ENHANCED PIEZOELECTRIC PROPERTIES
14-Poster-07	Battula Durga Siva Deeraj, Appukkuttan Saritha and Kuruvilla Joseph	Simultaneously Toughened and Strengthened Electrospun fiber/Epoxy systems: Performance evaluation w.r.t fiber loading
14-Poster-08	Remyamol T Gopi R, Krishnaraj K and Ajith M. R	Hot pressed Graphite/SiC composites with improved properties for high temperature and high heat flux applications
14-Poster-09	Younes Ahmadi and Sharif Ahmad	Surface-Active Antimicrobial and Anticorrosive Oleo-Polyurethane/Graphene Oxide Nanocomposite Coatings: Synergistic Effects of In-situ Polymerization and $\pi$ - $\pi$ Interaction
14-Poster-10	Lailash Kumar P. K. Singh, Chidvilas K R G.S. Avadhani and S. Suwas	Hot Deformation Behavior of a newly developed Cr and V containing steel
14-Poster-11	Amartya Acharya and Sanjib Bhattacharya	Lithium ion Conductor: Evolution of Electrical Transport
14-Poster-12	Srijan Acharya Shaurya Singh Dabas, Sumit Bahl, Satyam Suwas and Kaushik Chatterjee	Mechanical and biological performances of single- and dual-phase low modulus titanium alloys
14-Poster-13	Kasturi Sala Swapnil Morankar and Rahul Mitra	The microstructural characterization of hypereutectic Nb/Nb <sub>5</sub> Si <sub>3</sub> alloys
14-Poster-14	Srinagalakshmi Nammi Raivat Patnana and Nilesh J Vasa	Study of 532 nm pulsed Nd <sup>3+</sup> :YAG laser machining of nanoclay/Glass fiber filled epoxy resin composites

14-Poster-15	Subash Padhan, Tapan Kumar Rout and G. Udayabhanu	Graphene oxide incorporated silane sol-gel coatings for corrosion protection of galvanized steel
14-Poster-16	Nimmi C.Sekhar and Lity Alen Varghese	Preparation and Characterization of Phenolic Resin – Intercalated Graphite Composites
14-Poster-17	P Ramesh, B Durga Prasad, and K L Narayana	Characterization of Kenaf / Aloe vera fiber Reinforced PLA Hybrid biocomposites
14-Poster-18	Vagini T , Nimmi C Sekhar, and Lity Alen Varghese	Synthesis and Characterization of Shape Memory Epoxy Polymer Composites for Smart Structures
14-Poster-19	Itkankhya Mahapatra and Ritwik Sarkar	Effect of ZrO <sub>2</sub> addition on MgAl <sub>2</sub> O <sub>4</sub> spinel : Comparison between coprecipitation and oxide reaction routes
14-Poster-20	Sanghamitra Sethia and Bankim Chandra Ray	The comparison study of three and four point fixtures with loading rate sensitivity of glass fibre/epoxy composites at high temperatures
18-Poster-21	S Mohapatra J.Jain, and R.Prasad	Microstructural changes and grain growth kinetics in extruded pure magnesium

## POSTER SESSION

### Materials for Energy and Environment (01 to 14)

**Date**                    **12<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

19-Poster-01	Sumanta Sahu Raj Kishore Patel	Adsorption of Cr (VI) by Spherical Thorium Oxide-Polyaniline Core Shell Nanocomposite
19-Poster-02	Bidushi Sarkar Debanjan Das and Karuna Kar Nanda	Noble metal (Pd, Pt and Ru) Supported On Metal Organic Framework (MOF) Derived N-doped Carbon Polyhedra For Excellent Bifunctional Electrocatalysis
19-Poster-03	Nitika Arya Piyush Avasthi and Viswanath Balakrishnan	Centimeter scale CVD growth of phase pure $\alpha$ -MoO <sub>3</sub> single crystals with stepped surface structure for remarkable electrocatalytic activity towards hydrogen evolution reaction
19-Poster-04	Rachna D. Hemam Ravi Nandan and K.K. Nanda	3D-CoNi based oxides as efficient electrocatalyst for oxygen evolution reaction
19-Poster-05	Shreevalli M Ran Vijay Kumar, Bhabani Shankar Dash, Padmaprabu C, Venkiteswaran C.N, Karthik V and Divakar R	Microstructural investigation on neutron irradiated Austenitic stainless steels
19-Poster-06	Vaibhav Shrivastava	Microwave synthesis generated controlled vacancy network affecting electrical properties of Bismuth layer Aurivillius Materials for new applications

19-Poster-07	Aravind Baby Baskar Senthilkumar and Prabeer Barpanda	Rapid, Template-free Combustion Synthesis of Nano-Zinc-Spinels for Energy Storage and Electrocatalytic Applications
19-Poster-08	Rituporn Gogoi Astha Singh and Prem Felix Siril	Nanostructured Conducting Polymers- Metal free visible light photocatalysts
19-Poster-9	Swati Dhua and Somnath Chanda Roy	Comparison of TiO <sub>2</sub> nanotubes to Fe <sub>2</sub> O <sub>3</sub> nanorods decorated on TiO <sub>2</sub> nanotubes as a photoanode for photoenergy conversion through water splitting
19-Poster-10	Omeshwari Bisen Ajay Gautam and Karuna Kar Nanda	High oxygen electrochemistry helps in meeting the energy demand
19-Poster-11	S Mondal S. K. Kundu, and A. Bhaumik	Hydroxyl-rich microporous organic networks as efficient adsorbent for CO <sub>2</sub> capture and H <sub>2</sub> storage
19-Poster-12	Ramesh Kumar Gajula and M. Jaya Prakash	A Fluorescent porous organic cage molecule for small molecule sensing applications
19-Poster-13	Kushal Mazumder Alfa Sharma and Parasharam M. Shirage	Effect of transition metal doping (x=Cu, Ni) on physiochemical properties of topological insulator Bi <sub>2</sub> Se <sub>3</sub> with multifunctional application.

## POSTER SESSION

### Nanomaterials Synthesis and Solutions Route

**Date**                    **12<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

06-Poster-01	Mrunalini K. Gaydhane Apurva S. Bhagat and Chandra Shekhar Sharma	Urea-Neem Oil Encapsulated Electrospun Nanofibers for Fertilizer-cumPesticide Application
06-Poster-02	Mrunalini K. Gaydhane Sampada P. Pudke Chandra Shekhar Sharma	Neem Oil Encapsulated Electrospun Antimicrobial Polyurethane Nanofibers for Seed Storage Application
06-Poster-03	Sanjay W. Pawar Prashant K. Baviskar, Vilas A. Tabhane and Habib M. Pathan	Deposition of Colloidal Nanocrystalline CdSe on TiO <sub>2</sub> for Solar cell Application
06-Poster-04	Ramya Prabhu B K. Bramhaiah and Neena S John	Sea urchin –MoO <sub>3</sub> nanostructure as an efficient substrate for SERS detection of dyes
06-Poster-05	Aleena Rose and T. Vijayakumar	Synthesis of metal chalcogenide/conductive carbon composite nanofibers through electrospinning followed by carbonization
06-Poster-06	Gubran Alnaggar K.R. Raksh and S. Ananda	Electrochemical synthesis of large-area MoO <sub>2</sub> nanosheets and their photocatalytic activity

06-Poster-07	Parth Raval Daimiota Takhellambam and Debrina Jana	White light emission from stable CsPbCl <sub>3</sub> :Mn <sup>2+</sup> perovskite and carbon polymer dot composite
06-Poster-08	S. M. Giripunje and Vijayalaxmi Thite	Effects of Precursor Molar Ratio and PH on Morphology and Photoluminescence Characteristics of Zn-Al & Zn-Fe Layered Double Hydroxide Nanoparticles
06-Poster-09	Daimiota Takhellambam Tinku Ram Meena and Debrina Jana	Mesoporous alumina mediated synthesis of CsPbBr <sub>3</sub> nanocrystals with tunable emission
06-Poster-10	Chandini Behera and Saroj L Samal	Facile synthesis of Copper-Antimony-Sulfide ternary nanocrystals for photovoltaic application
06-Poster-11	Mahima Singh Piyali Maity, Prajyoti Singh, A. K. Ghosh and Sandip Chatterjee	Optical and magneto-transport properties of Bi <sub>2</sub> (S <sub>1-x</sub> Se <sub>x</sub> ) <sub>3</sub>
06-Poster-12	Rajesh Belgamwar and Vivek Polshettiwar	Dendritic Fibrous Nanosilica (DFNS) Supported Boron Nitride as Heterogeneous Catalysts
06-Poster-13	Vandana Shinde and Pradip Patil	Nanosheet of an ammonium vanadate phase and mixed valance vanadium oxide: Synthesis and Characterization
06-Poster-14	Kaustav Bhattacharjee and B. L. V. Prasad	Gold supracrystal by solvent destabilization precipitation: Effect of the excess ligand
06-Poster-15	Anurag Pritam and Vaibhav Srivastava	Microstructure analysis of microwave sintered ball milled prepared layered SrBi <sub>2</sub> Nb <sub>2</sub> O <sub>9</sub> ceramics by Reitveld refinement method
06-Poster-16	B. Bharati and Chandana Rath	Effect of Ion Irradiation: Phase Transformation, Pattern Formation and Magnetism in TiO <sub>2</sub> Thin Films
06-Poster-17	Baljinder Kaur Lakhbir Singh, Tarun Garg Navneet Dabra and Jasbir S. Hundal	Impedance Spectroscopy and Optical Studies of Mullite Bismuth Ferrite
06-Poster-18	Chilukoti Srilakshmi	Synthesis, characterization and evaluation of microwave synthesized SrTiO <sub>3</sub> Nanocatalyst for condensation, hydrogenation and amination reactions
06-Poster-19	Lakshmi Vijaya Sruthi Suresh and E. Bhoje Gowd	Polar crystal Formation in Poly(Vinylidene Fluoride) induced by layered Nanofillers
06-Poster-20	V. Yogaraj S.Muthamizh, K. Boopathi and R.Jayavel	Synthesis, Morphological Characterization, and Electrochemical Sensing Property of Bismuth molybdate
06-Poster-21	Piyush Sharma and O. P. Pandey	Investigating thermal kinetics during oxidation of Cr <sub>2</sub> AlC MAX phase
06-Poster-22	Sanjit Mandal and Ujjal K. Gautam	Graphene Quantum Dots from non-biodegradable polymers exhibiting high ambient oxygen uptake and photocatalytic efficiency for oxidation

06-Poster-23	Lipipuspa Sahoo	Self-immobilized Pd nanowires as an excellent platform for a continuous flow reactor: Efficiency, stability and regeneration
06-Poster-24	Nirmal Roy Sayantan Ghosh and S. S. Banerjee	Synthesis of cobalt carbide nano particle composite and its anomalous transport behavior at low temperature
06-Poster-25	Kalyani Prusty and S K Swain	Nano ZrO <sub>2</sub> embedded cellulose incorporated poly ethylmethacrylate/polyvinyl alcohol nanocomposite films as a super capacitor

## OXIDE ELECTRONICS

**Date** 13<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** M.S. Ramachandra Rao  
Dhanvir Singh Rana  
M K Jayaraj  
Shaibal Mukherjee  
K. Mohan Kant

**Session III : 14.00-15.15 hrs**

14.00-14.30 hrs Invited Talk (7)	<u>Anupam Jana</u> R.J. Choudhary and D. M. Phase	Strain induced Mott-Hubbard insulating state of epitaxial LaVO <sub>3</sub> thin films
14.30-15.00 hrs Invited Talk (8)	<u>K. Mohan Kant</u>	Exchange interaction in CoFe <sub>2</sub> O <sub>4</sub> based nanocomposites
15.00-15.15 hrs Oral (5)	<u>Vijaya Prakash</u>	

## PHOTOVOLTAICS

**Date** 13<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Co chairs** Sushobhan Avasthi  
Murali Banavoth  
Habib M Pathan  
Dinesh Kabra

**Session II : 14.00-15.45 hrs**

14.00-14.30 hrs Invited Talk (4)	<u>Murali Banavoth</u>	Hybrid Perovskites and Bulk Heterojunction Cost Effective Photovoltaics
14.30-15.00 hrs Invited Talk (5)	<u>Praveen C Ramamurthy</u>	Opto-electronic enhancement in nano-structured polymer thin film photovoltaic devices
15.00-15.30 hrs Invited Talk (6)	<u>Mukesh Kumar</u> Kulwinder Kaur	Suppression of Cu <sub>2-x</sub> S secondary phases and Cu <sub>Zn</sub> defects to enhance photoconversion efficiency in earth abundant CZTS Solar Cells
15.30-15.45 hrs Oral (3)	<u>Namrata Pant</u> Masatoshi Yanagida, Yasuhiro Shirai and Kenjiro Miyano	Influence of hole transport layer on the perovskite film and perovskite solar cell devices



## PHOTONIC MATERIALS

**Date** 13<sup>th</sup> February 2019  
**Venue** Materials Engineering Lecture Hall Theatre  
**Co chairs** Mahesh Hariharan  
G.V. Pavan Kumar  
Sankar Kumar Selvaraja  
Kamal Lohani  
K V Adarsh  
Tarun K Sharma

### Session III : 14.00-15.00 hrs

14.00-14.30 hrs Invited Talk (8)	<u>Jyotishman Dasgupta</u>	Tracking Charge Transfer States for Photovoltaic and Photocatalytic Applications
14.30-15.00 hrs Invited Talk (9)	<u>Angshuman Nag</u>	Possibility of Dual Bandgap in Organic-Inorganic Pb-halide Layered Perovskite

## NANOMATERIALS DEVICES AND APPLICATIONS

**Date** 13<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** Kaushik Ghosh  
Akhilesh Pandey  
M M Shaijumon  
B L V Prasad  
Pika Jha  
C V Yelamaggad

### Session III : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (7)	<u>Sameer Sapra</u>	MoSe <sub>2</sub> TMD based nanoheterostructures for optoelectronic applications
14.30-15.00 hrs Invited Talk (8)	<u>Akhilesh Pandey</u>	III-Nitride Nanostructured thin films and Multilayer for Device Applications
15.00-15.30 hrs Invited Talk (9)	<u>Kaushik Ghosh</u> KhushbooSoni, Sushil Kumar, SkRiyajuddin, Damini, Komal Gill, Surender P. Gaurand	1D and 2D Hybrid Nanostructures for Solar Energy Capture, Conversion and Storage
15.30-15.45 hrs Oral (5)	<u>Kolla Lakshmi Ganapathi</u> Martando Rath and M.S. Ramachandra Rao	PZT back gated multilayer MoS <sub>2</sub> field effect transistors for next generation Non-volatile memory
15.45-16.00 hrs Oral (6)	<u>Surender P. Gaur</u> Sushil Kumar, Komal Gill, Damini Badhwar, Sk Riyajuddin and Kaushik Ghosh	Large area-few layer graphene films for flexible touch screen application

## MULTIFERROICS

**Date** 13<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Rajeev Ranjan  
Ranjith Ramadurai  
Venimadhav Adyam  
A Sundaresan  
P Murugavel

### Session III 14.00-15.45 hrs

14.00-14.30 hrs Invited Talk (7)	<u>E V Sampathkumar</u> and Sanjay K Upadhyay	Multiferroicity in spin-chain compounds with the formula, $R_2BaXO_5$ , and exceptionally large magnetodielectric coupling in polycrystalline form"
14.30-15.00 hrs Invited Talk (8)	<u>Davinder Kaur</u>	Smart Material Thin Films with Unprecedented Functionalities
15.00-.15.30 hrs Invited Talk (9)	<u>Rajeev Ranjan</u> Bastola Narayan and Rishikesh Pandey	Large electromechanical response in non-MPB piezoelectrics
15.30-15.45 hrs Oral (3)	<u>Manoranjan Kar</u> Lagen Kumar Pradhan	Antiferroelectric to Relaxor Antiferroelectric Ordering Transition on BNT-BKT Ferroelectric Solid Solution

## COMPUTATIONAL MATERIALS SCIENCE

**Date** 13<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Abhishek K Singh  
Manish Jain  
Umesh V Waghmare

### Session II: 14.00-15.15 hrs

14.00-14.30 hrs Invited Talk (4)	<u>Priya Mahadevan</u>	Engineering spin valley physics in bilayers of $MoSe_2$
14.30-15.00 hrs Invited Talk (5)	<u>Manish Jain</u> and Mit H. Naik	Ultraflatbands and Shear Solitons in Moiré Patterns of Twisted Bilayer Transition Metal Dichalcogenides
15.00-15.15 hrs Oral (3)	<u>Pawan Kumar Tripathi</u> and Somnath Bhowmick	Oriental dependence of interface velocities and mobilities of an austenite-ferrite interface in pure Fe using molecular dynamics simulation

## ORGANIC ELECTRONICS

**Date** 13<sup>th</sup> February 2019  
**Venue** Management Studies Classroom II  
**Co chairs** Manoj A G Namboothiry  
S. Sundar Kumar Iyer  
Rajneesh Misra  
Satish Patil

### Session I : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>Amlan J. Pal</u>	All Organic Dual Spin Valve (DSV) Devices
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14.30-15.00 hrs Invited Talk (2)	<u>Kothandam Krishnamoorthy</u> and Arulraj Arulkashmir	Impact of Hydrophobic Hole Transport Layer on Organic Solar Cell Efficiency
15.00-15.30 hrs Invited Talk (3)	<u>Sriram Kanvah</u>	Emission and Color Tuning of Styryltriphenylamines
15.30-16.00 hrs Invited Talk (4)	<u>Rajneesh Misra</u>	Stimuli responsive AIE active emitters in non-doped OLEDs

## CHARACTERIZATION TECHNIQUES

**Date** 13<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** S.M. Yusuf  
Ranjan Datta  
Chandrabhas Narayana  
S Arumugam

### Session II : 14.00-15.45 hrs

14.00-14.30 hrs Invited Talk (4)	<u>Chandrabhas Narayana</u>	Probing Topological phases by Raman Spectroscopy
14.30-15.00 hrs Invited Talk (5)	<u>S M Yusuf</u>	Neutron Powder Diffraction in Magnetism
15.00-15.30 hrs Invited Talk (6)	<u>R Datta</u>	Quantitative atom counting of Zn and O atoms by atomic resolution off-axis and in-line holography

## NANOMATERIALS DEVICES AND APPLICATIONS

**Date** 13<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** Kaushik Ghosh  
Akhilesh Pandey  
M M Shaijumon  
B L V Prasad  
Pika Jha  
C V Yelamaggad

### Session IV : 16.30-17.30 hrs

16.30-17.00 hrs Invited Talk (10)	<u>PikaJha</u>	Development of carbon nanomaterial based sensors
17.00-17.30 hrs Invited Talk (11)	<u>Shankar Dutta</u>	Integration of ultrathin oxide films on semiconductor surface

## MATERIALS FOR ENERGY AND ENVIRONMENT

**Date** 13<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Sebastian Peter  
Vivek Polshettiwar

**Session II: 16.30-18.30 hrs**

16.30-17.00 hrs Invited Talk (4)	<u>Mukul Kabir</u>	Phosphorene as Two-Dimensional Photocatalyst?
17.00-17.15 hrs Oral (3)	<u>Anu Bala</u> Vijay Kumar	Ab initio study of layers of inorganic metal halide perovskites and their stability enhancement
17.15-17.45 hrs Invited Talk (5)	<u>Narayan Pradhan</u>	Doped Nanocrystals as Efficient Lighting Energy Materials
17.45-18.00 hrs Oral (4)	<u>Ayan Maity</u> Sachin Chaudhari, Jeremy J. Titman and Vivek Polshettiwar	High Surface Area Nano Aluminosilicates with Multimodal Pore Structure: Nanocatalysis and Understanding the Active Sites by two dimensional HETCOR Solid State NMR studies
18.00-18.15 hrs Oral (5)	<u>Soumyabrata Roy</u> Debabrata Bagchi, Saurav C. Sarma and Sebastian C. Peter	Mechanistic insights into the promotional effect of Ni doping on Mo and W carbide systems @NPGC for highly enhanced overall water splitting

**PHOTOVOLTAICS**

**Date**                **13<sup>th</sup> February 2019**  
**Venue**             Hall C, National Science Seminar Complex  
**Co chairs**  
Sushobhan Avasthi  
Murali Banavoth  
Habib M Pathan  
Dinesh Kabra\

**Session III : 16.30-18.00 hrs**

16.30-17.00 hrs Invited Talk (7)	<u>Sushobhan Avasthi</u>	Towards large area perovskites solar cells
17.00-17.30 hrs Invited Talk (8)	<u>Suraj Soman</u>	Dye-sensitized Solar Cells: Transforming Science to Technology
17.30-18.00 hrs Invited Talk (9)	<u>S. Anantha Ramakrishna</u>	A material perspective to designing metamaterials

**BIOMEDICAL DEVICES AND APPLICATIONS**

**Date**                **13<sup>th</sup> February 2019**  
**Venue**             Management Studies, Classroom II  
**Co chairs**  
Deepthy Menon  
S. Swaminathan

**Session I : 16.30-18.30 hrs**

16.30-17.00 hrs Invited Talk (1)	<u>Apurba K. Das</u>	Chemical Reactions Directed Evolution of Self-healable, Dynamic and 3D printable Hydrogels
17.00-17.30 hrs Invited Talk (2)	<u>Aravind Kumar Rengan</u>	Biodegradable Nanohybrids for Cancer Theranostics

17.30-18.00 hrs Invited Talk (3)	<u>P. R Anil Kumar</u>	Challenges in Biological Evaluation of 3D Bioprinted Constructs
18.00-18.15 hrs Oral (1)	<u>Asish Kumar Panda</u> K. Ravi Kumar, Amanuel Gebrekrstos, Suryasarathi Bose and Bikramjit Basu	Electrical stimuli mediated stem cell differentiation on PVDF/MWCNT composite for neural patch application
18.15-18.30 hrs Oral (2)	<u>Aditi Jain</u> Jafar Hasan, Venkatraman Ravi, Jaseer Muhamed, Perumal Arumugam Desingu, Nagalingam, R. Sundaresan and Kaushik Chatterjee	Engineering an in vitro organotypic model of heart towards understanding cardiac hypertrophy

## NITRIDE ELECTRONICS

**Date** 13<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Mahesh Kumar  
 Poornendu Chaturvedi  
 Thirumaleshwara N Bhat  
 Anirban Bhattacharyya  
 Suchandan Pal

### Session II : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (4)	<u>Govind Gupta</u>	Recent Progress in AlGaIn/GaN based Solar-Blind Photodetectors
17.00-17.30 hrs Invited Talk (5)	<u>Anirban Bhattacharyya</u> and Chirantan Singha	Spontaneous growth of III-Nitride nanostructures by Plasma Assisted Molecular Beam Epitaxy
17.30-18.00 hrs Invited Talk (6)	<u>Suchandan Pal</u>	III-Nitride based visible and ultra-violet light emitting diodes: Aspects of light extraction from devices
18.00-18.30 hrs Invited Talk (7)	<u>Dipankar Jana</u>	Understanding the origin of defects in AlGaIn/GaN heterostructures

## 2D MATERIALS

**Date** 13<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** Kausik Majumdar  
 Ratnamala Chatterjee  
 Awadhesh Mani  
 Sandip Ghosh

### Session I : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (1)	<u>Subhabrata Dhar</u> S. Deb, P. Chakrabarti and P. K. Mohapatra	Understanding the Defects in Large Area MoS <sub>2</sub> Monolayers Grown by CVD
17.00-17.30 hrs Invited Talk (2)	<u>S Dhara</u>	Nanoscopy and spectroscopy of 2D monolayer heterojunction chalcogenides in the sub-diffraction limit

17.30-18.00 hrs Invited Talk (3)	<u>Ashish Arora</u>	Interlayer excitons: (spatially) indirect evidence of two-dimensionality in fewlayer and bulk van der Waals semiconductors
18.00-18.15 hrs Oral (1)	<u>Himani Malik</u> Prithwidip Saha, Kamaless Patra, Jitendra K. Bera, and Thiruvancheril G. Gopakumar	Ultra-Thin Films of Functional Ferrocene Derivatives on HOPG
18.15-18.30 hrs Oral (2)	<u>Deepa Thakur</u> Pawan Kumar and Viswanath Balakrishnan	Kinetics of Light Driven Phase Transition in Monolayer WS <sub>2</sub>

## MULTIFERROICS

**Date**                    **13<sup>th</sup> February 2019**  
**Venue**                   Hall A, National Science Seminar Complex  
**Co chairs**             Rajeev Ranjan  
                               Ranjith Ramadurai  
                               Venimadhav Adyam  
                               A Sundaresan  
                               P Murugavel

### Session IV     : 16.30-17.45 hrs

16.30-17.00 hrs Invited Talk (11)	<u>Ranjith Ramadurai</u>	Strain Induced Structural Changes in BiFeO <sub>3</sub> Epilayers
17.00-17.30 hrs Invited Talk (12)	<u>A Venimadhav</u>	Positive exchange bias in magnetic alloy/ME oxide heterostructure grown in-situ by PLD
17.30-17.45 hrs Oral (3)	<u>Manoranjan Kar</u> Lagen Kumar Pradhan	Antiferroelectric to Relaxor Antiferroelectric Ordering Transition on BNT-BKT Ferroelectric Solid Solution

## POSTER SESSION

### Graphene

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                   **14.00-18.30 hrs**

03-Poster-01	Sharan Rathnam V S and Indranil Banerjee	Silanization improve the biological properties of graphene oxide
03-Poster-02	P. Gayathri P.C. Mahakul, T. Remyamol, M.R. Ajith and Manu Jaiswal	Low density graphene aerogels for thermal insulator applications
03-Poster-03	Nikhil Choudhary Kunal Kishore and Vinayak Shrote	Synthesis of Ultralight Graphene Aerogel With High Electrical Conductivity
03-Poster-04	S. R. Polaki Gopinath Sahoo and M. Kamruddin	Plasma modified vertical graphene nanosheets for energy storage applications

03-Poster-05	Bapun Barika and Priyabrat Dash	Catalytic Performance of Metal nanoparticle Decorated Ternary HGO-Co-Fe spinel oxide nanocomposite for hydroxylation of Benzene
03-Poster-06	Indu Sharma Girija Shankar Papanai, Pradeep Kumar Kashyap and Bipin Kumar Gupta	Comparable Qualitative study of CVD and Mechanically exfoliated Graphene evidenced by defect density for Industrial Applications
03-Poster-07	Jitha S Jayan B.D.S Deeraj, Saritha. A and Kuruvilla Joseph	Effect of GO -g- PEG in enhancing the toughness of epoxy nanocomposites
03-Poster-08	Cheluri Nagendra Prasad and Tharanikkarasu Kannan	Synthesis and Performance of Proton Conducting Novel Sulfonated Poly(oxybenzimidazole) -Graphene Oxide (SPOBI/GO) Intercalated Composite Membranes for PEM-Fuel Cells
03-Poster-09	M. Juvaid T. Venkatesan , and M. S. Ramachandra Rao	Optoelectronic Tunability of large area rGO grown by PLD
03-Poster-10	Nisha Yadav Naveen Kumar Seema Seharawat and Bimlesh Lochab	Stable dispersions of covalently tethered polymer and graphene oxide nanoconjugates as an effective payload for gene delivery
03-Poster-11	Shubhda Srivastava T. D. Senguttuvan and B. K. Gupta	Nitrogen doped high quality CVD grown graphene as a fast responding NO <sub>2</sub> gas sensor

## **POSTER SESSION**

### **Semiconductors, Silicon Germanium, III-V and II-VI**

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                     **14.00-18.30 hrs**

01-Poster-01	Md Arif Khan Rohit Singh, Pawan Kumar, Amitesh Kumar, Abhinav Kranti and Shaibal Mukherjee	Low-temperature Electrical Transport Properties of MgZnO/CdZnO Heterostructures
01-Poster-02	Ch. Kishan Singh T. Sain and S. Ilango	Polycrystalline Ge thin films on glass using Au induced crystallization at low temperature
01-Poster-03	Sourav Das , Mirwaiz Rahaman, Rabeya Basori and Pallab Banerji	Growth study of Au assisted In <sub>x</sub> Ga <sub>1-x</sub> As nanowire on Si(100) by Metal Organic chemical vapor deposition
01-Poster-04	N. Mohasin Sulthana P.K. Ajikumar, S. Dhara and K. Ganesan	Structural, electrical and optical properties of hydrogenated diamond films
01-Poster-05	Seema Gupta	Study on Bulk Modulus of Nanomaterials under Pressure
01-Poster-06	A.Mandal, S.D.Shinde S.K.Adhi and K.P.Adhi	Studies on Pulsed Laser Deposited Undoped ZnO and Pr (1 At.%) Doped ZnO Thin Films under Different Oxygen Pressure Conditions

01-Poster-07	L. H. Kathwate M. B. Awale S. D. Lokhande and V. D. Mote	Structural, Optical and Electrical Studies of the Al Substituted ZnO Thin Films via Spray Pyrolysis Technique
01-Poster-08	Swarupa Ojha Madhab Roy and Sanjib Bhattacharya	Chalcogenide Glassy Semiconductor: Structure and Electrical Transport
01-Poster-09	Asmita Poddar and Sanjib Bhattacharya	Amorphous Glassy Semiconductors doped with Transition Metal Oxide TeO <sub>2</sub> : Study of Conductivity Spectra
01-Poster-10	Sayantani Das, Sourish Banerjee and T. P. Sinha	Transport Properties of Fe-doped CdSe Nanoparticles
01-Poster-11	Prachi Chopade Shweta Jagtap, Srikar Tadepalli and Suresh Gosavi	Synthesis and characterization of ZnSe:Te nanoparticles for charged particle detection
01-Poster-12	Ruby Khan, Kapil Narang, Vikash K. Singh Sachin K Saini , Renu Tyagi , M.V.G Padmawati , Rajesh K Bag and Ufana Riaz	Influence of growth rate on material properties of GaN grown on 4H-SiC using MOVPE
01-Poster-13	Keshav Sharma Akshay Moudgil Samaresh Das and Rajendra Singh	A High Performance Flexible Ultraviolet Photodetector based on TiO <sub>2</sub> Nanostructured Thin Films
01-Poster-14	Rohit Pant Basanta Roul, Arun Malla Chowdhury, Deependra Kumar Singh, K K Nanda and S B Krupanidhi	Inhomogeneity mediated Schottky to Ohmic transition in Au/GaN nanorods structure
01-Poster-15	Arun Malla Chowdhury, Rohit Pant, Basanta Roul, Deependra Kumar Singh, K K Nanda and S B Krupanidhi	Self-powered photodetection (1550 nm) and carrier transport properties of InN/AlN/Si(111) SIS heterostructure

## **POSTER SESSION**

### **Materials for Energy and Environment (15 to 28)**

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

19-Poster-15	Alfa Sharma and Parasharam M. Shirage	Investigating the critical role of hydroxyl groups on humidity sensing of environmental benign ZnSnO <sub>3</sub> nanomaterials through adsorption isotherms
19-Poster-16	Sayantani Das Tufan Paul and Kalyan Kumar Chattopadhyay	Synthesis and Characterization of Hybrid Organic-Inorganic Perovskite CH <sub>3</sub> NH <sub>3</sub> PbX <sub>3</sub> Nanocubes



19-Poster-17	Satish Kumar Verma Ashish Bhatnagar, T. P. Yadav and and O. N. Srivastava	Catalytic effect of Ball milled TiH <sub>2</sub> @Graphene for hydrogen de/absorption from/in MgH <sub>2</sub> / Mg
19-Poster-18	M A Shaz	Hydrogen absorption in Li-Mg-N-H system by catalytic role of Li <sub>4</sub> (NH <sub>2</sub> ) <sub>3</sub> BH <sub>4</sub> and ZrFe <sub>2</sub>
19-Poster-19	Dhaneesh Y Peer Mohamed and S Ananthakumar	Green Building Materials For Energy Saving and Clean Environment
19-Poster-20	Asha Susan Chacko, Padinjareveetil Anju and Vadakkethonippurathu Sivankuttynair Prasad	Self-Assembled Hybrid Copolymer Vesicles of Styrene and Acrylic Acid with Layered Silicates
19-Poster-21	S .Muthamizh V. Narayanan and R. Jayavel	Synthesis of MoS <sub>2</sub> nanofoams for electrochemical hydrogen evolution reaction
19-Poster-22	S. Jayesh and Jacob Elias	Finite Element Modeling and Random Vibration Analysis on Lead Free Solder Joint Material- SAC405
19-Poster-23	Sujith Vijayan Praveen Wilson and K. Prabhakaran	Processing of ceramic foam spheres by injection molding of hydrogenated vegetable oil-in-aqueous clay emulsions
19-Poster-24	Rameez Ahmad Mir and Om Prakash Pandey	Carbonaceous waste as carbon to synthesize low cost and efficient electrocatalyst for HER and electrode for capacitors
19-Poster-25	Nagaraj S. Naik, Prajwal Sherugar, and Mahesh Padaki	Poly(ionic liquid) based Charge and size-selective nonofiltration membrane for removal of dyes
19-Poster-26	Shreya Sarkar Anshuman Chaupatnaik, S. D. Ramarao, Udumula Subbarao, Prabeer Barpanda and S. C. Peter	Probing the intriguing mechanism of sodium ion insertion in CoSb based intermetallic anodes for Sodium-ion batteries
19-Poster-27	Kundan Kumar and Anirban Chowdhury	Remarkable Ionic Conductivity in a Textured La <sub>2</sub> Ce <sub>2</sub> O <sub>7</sub> Ceramic made by a Conventional Sintering
19-Poster-28	Sreetama Ghosh and Sundara Ramaprabhu	Nitrogen doped carbon nanotube with encapsulated iron carbide nanocrystals as a highly efficient material for carbon dioxide capture

## **POSTER SESSION**

### **Organic Electronics**

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

04-Poster-01	Sushma and S. Ananda	Both Micro Crystal And Single Crystal Synthesis And Characterization Of Blue Light Emitting Liquid Crystal 1,3-Dimethoxy- 5(4-Tetradecyloxystyryl)Benzene
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04-Poster-02	K. J. Athira and K. R. Gopidas	Hierarchically Self-assembled Nanofiber Networks of Mixed Stack Charge Transfer Complex with Potential for Organic Electronic Applications
04-Poster-03	Jayanthi S.Panicker Sajitha Surendran Bijitha Balan Biswapriya Deb and Vijayakumar C. Nair	Synthesis of Fumaronitrile - Triphenylamine Derivative for Electrochromic Device Application
04-Poster-04	Reshma Raveendran and Manoj A G Namboothiry	Anomalous Bias Stress Behaviour of Elastomeric Gate Dielectric Based Organic Field Effect Transistors
04-Poster-05	S. Sindhu Siju C.R and N. C. Shivaprakash	Fabrication and Characterization of Electrochromic Pixels displays using Di-isopropylbenzyl Derivative of Poly (3,4-propylenedioxythiophene)
04-Poster-06	Harsh Bhatia and Debdas Ray	Biluminescence via Fluorescence and Persistent Phosphorescence in Amorphous Organic Donor(D4)–Acceptor(A) Conjugates and Application in Data Security Protection
04-Poster-07	Seelam Prasanthkumar	Stimuli Responsive $\pi$ -Conjugated Macrocycles for Organic Electronics

## POSTER SESSION

### Magnetic, Spintronics and Superconductors

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

09-Poster-01	Md Arif Ali Dibya J. Sivananda Pintu Das , Jens Muller Zachary Fisk and S. S. Banerjee	Study of non-Curie Weiss like behavior of EuB6 using bulk magnetization
09-Poster-02	Shobha Gondh Imtiaz Noor Bhatti and A. K. Pramanik	Structural, Transport and Magnetic Behavior in $Sr_2Ir_{1-x}V_xO_4$ ( $x = 0.0$ and $0.025$ )
09-Poster-03	Baskaran R Thanikai Arasu A V and Baisnab D K	Critical Field Variations in Disordered NbN Thinfilms
09-Poster-04	Subham Naik and Saroj L Samal	Effect of Sn Intercalation in LTMD: $Sn_xNbSe_2$ ( $x=0.0, 0.2, 0.4$ )
09-Poster-05	Murli Kumar Manglam Sunil Kumar and Manoranjan Kar	Crystal Structure and Magnetic Properties of Zn Doped Barium Hexaferrite
09-Poster-06	Khyati Anand Arkadeb Pal, Mohd Alam Anita Mohan and Sandip Chatterjee	Observation of multiple exotic magnetic phases in double pervoskite $Tb_2CoMnO_6$

09-Poster-07	Prajyoti Singh Arkadeb Pal, Vinod K.Gangwar , Mahima Singh and Sandip Chatterjee	Structural and Magnetic study of Hybrid pyrochlore (Eu <sub>x</sub> Tb <sub>1-x</sub> ) <sub>2</sub> Ti <sub>2</sub> O <sub>7</sub>
09-Poster-08	Shyamal K Saha	Unusual Magnetism in 2D Materials
09-Poster-09	Karan Singh and K. Mukherjee	Evolution of physical properties of CeGe due to Ce-site dilution by La
09-Poster-10	Arkadeb Pal Prajyoti Singh Mohd Alam Khyati Anand and Sandip Chatterjee	Crossover from Griffiths like phase to non-Griffiths like phase and tuning of exchange bias by hole doping in the double perovskite Pr <sub>2-x</sub> Sr <sub>x</sub> CoFeO <sub>6</sub>
09-Poster-11	S. Narayana Jammalamadaka, Sebastian Kuntz, Oliver Berg , Wolfram Kittler, U. Mohanan Kannan, J. Arout Chelvane and Christoph Sürgers	Magnetostriction based nanocontacts – electron tunneling and conductance switching
09-Poster-12	R. Revathy Manoj R. Varma and K. P. Surendran	Tailoring the morphology and characterization of nickel nanostructures
09-Poster-13	Charu Garg Martin Lonsky , Jens Müller and Sunil Nair	Ba <sub>3</sub> CoIr <sub>2</sub> O <sub>9</sub> : A new 3d-5d based layered triple perovskite
09-Poster-14	P. Sivaprakash M. Kannan , S. Esakki Muthu , Sanjay Singh and S. Arumugam	Effect of the hydrostatic pressure on the martensite transition and magnetocaloric properties of Pt doped Ni <sub>2</sub> MnGa Shape memory Heusler alloy
09-Poster-15	B. Arun V. R. Akshay and M. Vasundhara	Tuning of magnetocaloric properties towards room temperature in A-site deficient La <sub>0.67</sub> Sr <sub>0.33</sub> MnO <sub>3</sub> manganite
09-Poster-16	Vijayakumar Sajitha Aswathy, Manoj Raama Varma and Cheriyedath Raj Sankar	Low temperature magnetoresistive properties of Tl <sub>2</sub> Cu <sub>3</sub> FeQ <sub>4</sub> (Q= S, Se, Te)
09-Poster-17	Jasnamol Pezhumkattil Palakkal, Aswathi Kaipamangalath Cheriyedath Raj Sankar and Manoj R Varma	Structural, magnetic, and magnetotransport properties of LaFe <sub>0.5</sub> Ni <sub>0.5</sub> O <sub>3</sub>
09-Poster-18	Tuhin S. Dash Som. D. Kaushik Debakanta Samal and Saroj L. Samal	Mn <sub>2</sub> SnS <sub>4</sub> : Synthesis and thorough investigation of magnetic and physical properties

09-Poster-19	Arnab Bose, Ambika Shanker Shukla, Sutapa Dutta , Swapnil Bhuktare , Hanuman Singh, V. G. Achanta and Ashwin A. Tulapurka	Direct observation of Spin-Nernst effect in Platinum
09-Poster-20	Ranjana R. Das Priyadarshini Parida A. K. Bera , Tapan Chatterji, B. R. K. Nanda and Santhosh P. N	Giant exchange bias in the single-layered Ruddlesden-Popper compound $\text{SrLaCo}_{0.5}\text{Mn}_{0.5}\text{O}_4$ : A combined studies of experimental and density functional theory
09-Poster-21	S. Koyiloth Vayalil , Aswathi. K , Ajesh K. G, Stephan .V. Roth and P.S. Anil Kumar	Tailoring of uniaxial magnetic anisotropy in Permalloy thin films using nanorippled Si substrates
09-Poster-22	Monalisha P Yugandhar Bitla and P S Anil Kumar	Epitaxial Growth of Nickel Zinc Ferrite thin film on Mica
09-Poster-23	T. S Suraj Ganesh Ji Omar, Hariom Jani, M. Juvaid , Lim Zhi Shiuh , Huang Zhen , K. Sethupathy , Ariando , T. Venkatesan and M. S. Ramachandra Rao	Antiferromagnetic oxide/metallic oxide heterostructure for pure spin current
09-Poster-24	Ankan Mukhopadhyay Sarathlal Koyiloth Vayalil, Dominik Graulich Timo Kushel Sonia Francoual and P S Anil Kumar	Study of magnetic proximity effect in Pt/Co/Pt trilayer system using x-ray resonant magnetic reflectivity
09-Poster-25	S N Kumaran N C Shivaprakash and P S Anil Kumar	Magnetic sensor for electric vehicles
09-Poster-26	Sharmili Pandian, Twinkl Gnana Prabha Ramalingam Chokkalingam, Manickam Mahendran and Shanmugavel Rajesh	Versatile Magnetorheological Fluid for Automobile Applications
09-Poster-27	Priyanka Saha Rupali Rakshit Maheebub Alam and Kalyan Mandal	Magnetic and electronic properties of Zn-doped $\text{Fe}_3\text{O}_4$ hollow nanospheres
09-Poster-28	Mohit K. Sharma and K. Mukherjee	Magnetocaloric Behavior and Double Glass Transition in $\text{Tb}_5\text{Pd}_2$ Intermetallic System
09-Poster-29	Birender Singh, Deepu Kumar , Kaustuv Manna , A. K. Bera, G. Aslan Cansever A. Maljuk, S. Wurmehl B. Büchner and Pradeep Kumar	Correlated Paramagnetism and Interplay of Magnetic and Phononic Degrees of Freedom in $3d$ - $5d$ Coupled $\text{La}_2\text{CuIrO}_6$

09-Poster-30	Surajit Ghosh Ahishek Kumar Khyati Anand Arkadeb Pal, U. K. Goutam and Sandip Chatterjee	Structural and magnetic properties of antiferromagnetic (Tb <sub>1-x</sub> Ce <sub>x</sub> )MnO <sub>3</sub> : Existence of Griffith's phase and exchange bias
09-Poster-31	Ravi Kumar Dilip K. Singh Rajkumar and Sanjay R. Dhakate	Effect of high temperature annealing on the concentration of Nitrogen Vacancy Centers in Nanodiamonds
09-Poster-32	Kamalesh Roy and A. K. Pramanik	Evolution of structural, magnetic and dielectric properties of Mo- doped ZnCu <sub>2</sub> Nb <sub>2</sub> O <sub>8</sub>
09-Poster-33	P. K. Sreejith, M. Muralidhar, V. Sankaranarayanan, M. S. Ramachandra Rao and M. Murakami	Effect of low temperature thermal stabilization followed by rapid thermal quenching on the growth of micrometer sized FeSe crystallites in bulk
09-Poster-34	T R Rajalekshmi, K Sethupathi and M S Ramachandra Rao	Structural and magnetic properties of LaCr <sub>1-x</sub> Ga <sub>x</sub> O <sub>3</sub> (x = 0, 0.25, 0.5)
09-Poster-35	Ankit Kumar Tsuyoshi Tamegai and S. S. Banerjee	Magneto-Optical Imaging of Vortex Lattice Melting at Low Fields in the Presence of Disorder in a Ba <sub>0.6</sub> K <sub>0.4</sub> Fe <sub>2</sub> As <sub>2</sub> Single Crystal
09-Poster-36	Dibya J. Sivananda Ankit Kumar Md Arif Ali, Pintu Das, Jens Müller, Zachary Fisk and S. S. Banerjee	Observation of the stepwise disintegration of magnetic domains in a EuB <sub>6</sub> single crystal by magneto-optical imaging

## **POSTER SESSION**

### **Thermoelectrics**

**Date**                    **13<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

13-Poster-01	Shriparna Mukherjee Anbalagan Ramakrishnan Kuei-Hsien Chen, Kamanio Chattopadhyay Satyam Suwas and Ramesh Chandra Mallik	Role of Cu deficiency on the thermoelectric Properties of CuFeS <sub>2</sub>
13-Poster-02	Sahil Tippireddy Prem Kumar D. S Anirudha Karati Anbalagan Ramakrishnan Kuei-Hsien Chen B.S. Murty and Ramesh Chandra Mallik	The Effect of Sn Substitution in Synthetic Tetrahedrite
13-Poster-03	Sanyukta Ghosh Krushna Kumari Raut and Ramesh Chandra Mallik	Enhanced Thermoelectric Properties of Fe Substituted S <sub>0.15</sub> Co <sub>4</sub> Sb <sub>12</sub>

13-Poster-04	Sushmita Chandra Ananya Banik and Kanishka Biswas	n-Type Ultrathin Few-layer Nanosheets of Bi Doped SnSe: Synthesis and Thermoelectric Properties
13-Poster-05	E Rathore, R. Juneja S. P. Culver, W. G Zeier, A. K Singh and K. Biswas	Soft Vibration Induced Local Structural Distortion Gives Rise to Ultralow Thermal Conductivity in n-type Te Free AgBiS <sub>2</sub>
13-Poster-06	Paribesh Acharyya Subhajit Roychowdhury and Kanishka Biswas	High Thermoelectric Performance and Enhanced Mechanical Stability of ptype (GeTe) <sub>1-2x</sub> (SnSe) <sub>x</sub> (SnS) <sub>x</sub>
13-Poster-07	Vinod K. Gangwar, Shiv Kumar, Zhang Yufeng Prashant Shahi, Swapnil Patil, Eike F. Schwier Kenya Shimada, Yoshiya Uwatoko and Sandip Chatterjee	Thermoelectric, magneto- transport properties and ARPES studies of BiSbTe <sub>3</sub> Topological Insulator
13-Poster-08	Sahiba Bano Ashish Kumar Bal Govind, A. Bhardwaj and D.K. Misra	Significantly Reduced Thermal Conductivity and Enhanced Thermoelectric Figure of Merit in Bi <sub>0.5</sub> Sb <sub>1.5+x</sub> Te <sub>3+m</sub> (x=0.2; m= 0, 0.12, 0.14, 0.16).
13-Poster-09	Ashish, S. Bano Bal Govind, A. Bhardwaj and D. K. Misra	Enhanced Thermoelectric Performance of half-Heusler Alloy Through In-situ Synthesized HH (1-x)/FH(x) Nano Composites in TiNi <sub>1+x</sub> Sn <sub>0.98</sub> Si <sub>0.02</sub> Materials
13-Poster-10	B Jayachandran D. Sivaprahasam T. Dasgupta and R. Gopalan	Influence of bonding techniques on the specific contact resistance of Pb <sub>0.5</sub> Sn <sub>0.5</sub> Te/Cu thermoelectric joints
13-Poster-11	Ashutosh Kumar N V Ravikumar and Dillip K Satapathy	Thermoelectric Properties in PEDOT:PSS-Te nanowire/nanorod composite
13-Poster-12	S Harish D.Sivaprahasam R.Gopalan and G.Sundararajan	Design, development and performance evaluation of thermoelectric generator test rig with Bi <sub>2</sub> Te <sub>3</sub> thermoelectric modules
13-Poster-13	B Priyadarshini Manjusha Battabyal A. Chandra Bose and R. Gopalan	Microstructure stability and enhanced thermoelectric properties in carbon nanotube dispersed ZnSb thermoelectric
13-Poster-14	Karuna Kumari Ashutosh Kumar D. Sivaprahasam and Ajay D Thakur	Thermoelectric Properties in Spark Plasma Sintered La <sub>0.7</sub> Sr <sub>0.3</sub> Mn <sub>0.5</sub> Co <sub>0.5</sub> O <sub>3</sub>
13-Poster-15	Akshay V R B. Arun and M. Vasundhara	Investigations on Synthesis Mechanism of Nanostructured (Bi,Sb,Sn) -Te Thermoelectric Materials via Aqueous based Reflux Method
13-Poster-16	Bevara Prasanth B. Jayachandran D.Sivaprahasam and R.Gopalan	Microstructure -Thermoelectric properties correlation of N-type Mg <sub>2</sub> Si <sub>0.4</sub> Sn <sub>0.6</sub> solid solutions prepared by Melt route

13-Poster-17	Chandrani Nath C.-Y. Chueh Y.-K. Kuo and J.P. Singh	Low-temperature thermoelectric properties of p-type SrTiO <sub>3</sub> /graphene nanohybrids
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## SEMICONDUCTORS, SILICON GERMANIUM, III-V AND II-VI

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Bharat B Kale  
Samaresh Das  
Apurba Laha

**Session I : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (1)	<u>Suddhasatta Mahapatra</u>	Progress and Challenges in Epitaxy and Photonic Applications of GeSn
14.30-15.00 hrs Invited Talk (2)	<u>Samit K Ray</u>	Si/Ge Nanowires for Photonic Devices
15.00-15.30 hrs Invited Talk (3)	<u>Bharat B Kale</u>	Semiconductor Quantum Dot –Glass nanosystems: Optical and Energy Applications
15.30-15.45 hrs Oral (1)	<u>Juhi Pandey</u> and Ajay Soni	Understanding of Multiexciton and Excitonic Excited States in Monolayer MoS <sub>2</sub>
15.45-16.00 hrs Oral (2)	<u>Geetanjali Vashisht</u> , S. Haldar, T. K. Sharma and V. K. Dixit	Effect of magnetic field on the photoluminescence efficiency of free/bound excitons in InAsP/InP QWs

## OXIDE ELECTRONICS

**Date** 14<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** M.S. Ramachandra Rao  
Dhanvir Singh Rana  
M K Jayaraj  
Shaibal Mukherjee  
K. Mohan Kant

**Session IV : 14.00-15.00 hrs**

14.00-14.30 hrs Invited Talk (10)	<u>Sharath Sriram</u>	Functions from flaws: Devices that harness vacancies and deficiencies in oxide thin films
14.30-15.00 hrs Invited Talk (11)	<u>R Mahendiran</u>	Broadband and low-field magnetotransport in CMR oxides: Electrically detected magnetic resonances

## ORGANIC ELECTRONICS

**Date** 14<sup>th</sup> February 2019  
**Venue** Management Studies Classroom II  
**Co chairs** Manoj A G Namboothiry  
S. Sundar Kumar Iyer  
Rajneesh Misra  
Satish Patil

**Session II : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (5)	<u>K S Narayan</u>	Engineering Orientation and Ordering in Conducting and Semiconducting Polymers
14.30-15.00 hrs Invited Talk (6)	<u>Satish Patil</u>	Exceeding Shockley–Queisser Limit with Singlet Fission
15.00-15.30 hrs Invited Talk (7)	<u>Sambandam Anandan</u>	Design and Synthesis of Organic Polymers-based Solar Cells
15.30-16.00 hrs Invited Talk (8)	<u>Soumya Dutta</u> Logesh Karunakaran, Anuj Rajpoot and Prashanth K Manda	Science and Technology behind the Array of Organic ThinFilm Transistors and Beyond

**NANOMATERIALS DEVICES AND APPLICATIONS****Date** 14<sup>th</sup> February 2019**Venue** J N Tata Main Auditorium

**Co chairs** Kaushik Ghosh  
Akhilesh Pandey  
M M Shaijumon  
B L V Prasad  
Pika Jha  
C V Yelamaggad

**Session V : 14.00-14.30 hrs**

14.00-14.30 hrs Invited Talk (12)	<u>Vinay Gupta</u>	
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**G C JAIN MEMORIAL LECTURES****Date** 14<sup>th</sup> February 2019**Venue** J N Tata Main Auditorium**Time** 14.30-15.30 hrs

14.30-14.45 hrs Talk (1)	Selva Kumar	Novel 1D and 2D carbon nanostructures based absorbers for photothermal applications
14.45-15.00 hrs Talk (2)	Dipak Kumar Khatua	Understanding the local/global structure and multi-functional behaviour of Na <sub>0.5</sub> Bi <sub>0.5</sub> TiO <sub>3</sub> based perovskite oxides
15.00-15.15 hrs Talk (3)	Pooja Devi	Selective Detection of Toxic Heavy Metalloids using Carbonaceous Nanostructured Materials
15.15-15.30 hrs Talk (4)	Subhrajit Mukherjee Soumen Das and Samit K Ray	Studies on Two Dimensional Molybdenum Disulfide Nanostructures for Heterojunction Photonic Devices



## STUDENT PROJECT LECTURES

**Date** 14<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Time** 15.30-16.00 hrs

15.30-15.45 hrs	Priyanka M and Habib M Pathan	Fabrication of ZnS Photoanode using SILAR method Useful for Third Generation Solar Cell Applications
15.45-16.00 hrs	Vineeth N Kowshik	Reduction of the Friction Characteristics of WC-Co Powder during Compaction

## BATTERIES, FUEL CELLS AND SUPERCAPACITORS

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Co chairs** S. Sampath  
 Vijayamohanan K Pillai  
 Prabeer Barpanda  
 Aninda J Bhattacharya

**Session I** : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>R R Sonde</u>	HTEPM – High Temperature PEM – fuel cells
14.30-15.00 hrs Invited Talk (2)	<u>Sundar Mayavan</u>	The promise of nanotechnology for the next generation of lead acid batteries
15.00-15.15 hrs Oral (1)	<u>Dipsikha Ganguly</u> Anamika Ghosh, Kothandaraman Ramanujam and Sundara Ramaprabhu	High performance proton exchange membrane fuel with low Pt-loading using thermally etched carbon nanotube –metal oxide as catalyst support
15.15-15.30 hrs Oral (2)	<u>Lalita Sharma</u> P. Kumar, B. Viswanath and A. Halder	Role of oxygen vacancy in the modulation of electrochemical hydrogen evolution for WO <sub>3-x</sub> nanostructure
15.30-15.45 hrs Oral (3)	<u>Pooja S. Deshpande</u> Vijay R. Chaudhari, and Bhagavatula L. V. Prasad	Revisiting the concept of electrode poisoning in methanol oxidation reaction: Case study using commercial Pt/C

## COMPOSITES, LIGHT METALS AND ALLOYS

**Date** 14<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Jayant Jain  
 Rajiv Prakash  
 Satyam Suwas  
 P Sujatha Devi

**Session I** : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>Subodh Kumar</u>	Development of light alloys for aerospace and automotive applications
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14.30-15.00 hrs Invited Talk (2)	<u>Sudhanshu S Singh, R Sarvesha, W. Alam A. Gokhale, T. Guruprasad S. Bhagavath, S. Karagadde and J. Jain</u>	Effect of Second Phase Particles on the Mechanical behavior of AZ80 Magnesium Alloy
15.00-15.30 hrs Invited Talk (3)	<u>M Gupta</u>	Emergence of Magnesium Technology: An Insight into its Potential and Material Development
15.30-15.45 hrs Oral (1)	<u>Deepak Kumar Nitya N Gosvami and Jayant Jain</u>	Effect of precipitates alignment on nano scale tribology of Mg <sub>9</sub> Al <sub>-0.5</sub> Zn alloy
15.45-16.00 hrs Oral (2)	<u>Alok Behera Manjusha M. Thawre and Atul Ballal</u>	Constant amplitude fatigue response of moisture aged carbon fiber reinforced epoxy matrix composite

## BIOMATERIALS DEVICES AND APPLICATIONS

**Date** 14<sup>th</sup> February 2019  
**Venue** Materials Engineering Lecture Hall Theatre  
**Co chairs** Deepthy Menon  
S. Swaminathan

### Session II : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (4)	<u>S Swaminathan</u>	Biomaterials for regenerative medicine
14.30-15.00 hrs Invited Talk (5)	<u>G R Jayandharan</u>	Adeno-associated Virus- from basic biology to preclinical gene therapy.
15.00-15.30 hrs Invited Talk (6)	<u>Deepthy Menon</u>	Marvels of Nanotopography on Cardiovascular Implants
15.30-15.45 hrs Oral (3)	<u>Binulal N. Sathy Niji Nand, Paola Aprile and Daniel J. Kelly</u>	Matrix stiffness and cell shape within collagen-alginate interpenetrating network hydrogels direct the differentiation of MSCs
15.45-16.00 hrs Oral (4)	<u>Sarat K Swain</u>	Polysaccharide based Nanohydrogels for Drug Delivery

## THERMOELECTRICS

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Kanishka Biswas  
Ajay Soni  
Ramesh Chandra Mallik  
R Gopalan

### Session I : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>Satish Vitta Kalpna Rajput, Keshav Dabral, Mofasser Mallick and Pranav Kulkarni</u>	Thermoelectric Clathrates, Skutterudites and composites
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14.30-15.00 hrs Invited Talk (2)	<u>Shovit Bhattacharya</u> Ranu Bhatt, Ajay Singh, Ranita Basu, Pritam Sarkar and K. P. Muthe	Development of Thermoelectric Generators: Material to Device
15.00-15.30 hrs Invited Talk (3)	<u>Ajay Soni</u> Somnath Acharya Niraj Singh and Juhi Pandey	Understanding and Manipulating Transport Properties in Chalcogenide Thermoelectric Materials
15.30-16.00 hrs Invited Talk (4)	<u>R Gopalan</u>	Discussion on Development of Thermoelectric Materials, Modules, and Thermoelectric Generator for Automotive High Efficiency Applications

## NANOMATERIALS: SYNTHESIS & SOLUTIONS ROUTE

**Date** 14<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** K Byrappa  
 Neena Susan John  
 Ujjal K Gautam  
 Ashok K Ganguli  
 Anirban Chowdhury

**Session I : 16.30-18.30 hrs**

16.30-17.00 hrs Invited Talk (1)	<u>Pramod P. Pillai</u>	Regulation of Interparticle Interactions for Advanced Nanoparticle Functions
17.00-17.30 Invited Talk (2)	<u>Ujjal K Gautam</u>	Intricate Tailoring of Pd Nanostructures for Efficient Catalytic Applications
17.30-18.00 hrs Invited Talk (3)	<u>Anirban Chowdhury</u>	Synthesis and Serendipity: How far can they collaborate?
18.00-18.15 hrs Oral (1)	<u>Sukanya Kundu</u> and Milan Kanti Naskar	Removal of Arsenic to meet drinking water standard using Al-Mg-Ca layered double oxides
18.15-18.30 hrs Oral (2)	<u>Subodh Kumar De</u> Sirshendu Ghosh	Synthesis of Nanoheterostructure Based on Cation Exchange Process

## MAGNETIC, SPINTRONICS AND SUPERCONDUCTORS

**Date** 14<sup>th</sup> February 2019  
**Venue** Materials Engineering Lecture Hall Theatre  
**Co chairs** Debakanta Samal  
 A K Pramanik  
 Manivel Raja Muthuvel  
 K G Suresh  
 Satyajit Banerjee

**Session I : 16.30-18.15 hrs**

16.30-17.00 hrs Invited Talk (1)	<u>M. Manivel Raja</u>	Development of Spintronic Thin Films for Magnetic Field Sensor Applications
17.00-17.30 hrs Invited Talk (2)	<u>Ashim Kumar Pramanik</u>	Ir magnetism and weak-antilocalization effect in electron doped Sr <sub>2</sub> IrO <sub>4</sub>

17.30-18.00 hrs Invited Talk (3)	<u>Debakanta Samal</u>	Tailoring the electronic and magnetic properties of SrCoO <sub>3-δ</sub> /SrCoO <sub>2.5</sub> interface and rocksalt type CuO layer
18.00-18.15 hrs Oral (1)	<u>Lalit Kumar</u> and <u>Tapas Kumar Mandal</u>	Crystal Structure and Magnetic Properties of LnCu <sub>3</sub> MnTi <sub>3</sub> O <sub>12</sub> (Ln = La, Nd) Quadruple Perovskites

## BATTERIES, FUEL CELLS AND SUPERCAPACITORS

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Co chairs** S. Sampath  
Vijayamohanan K Pillai  
Prabeer Barpanda  
Aninda J Bhattacharya

### Session II : 16.30-18.00 hrs

16.30-17.00 hrs Invited Talk (3)	<u>S Sampath</u>	Layered materials for Energy Conversion and Storage
17.00-17.30 hrs Invited Talk (4)	<u>K Ramesha</u>	Strategies towards developing high energy density Lithium-Sulphur Batteries
17.30-17.45 hrs Oral (4)	<u>Debosmita Banerjee</u> K. J. Sankaran, S. Deshmukh, G. Bhattacharya, M. Ficek, R. Bogdanowicz, I. N. Lin K. Haenen and S. S. Roy	Supercapacitor Performance study of Multilayered Graphene–Boron Doped Diamond Hybrid Nanowalls
17.45-18.00 hrs Oral (5)	<u>Chandra Sekhar Rout</u>	Experimental and Computational Study of Enhanced Charge Storage Capacity of Nanocarbon-Transition Metal Chalcogenides Hybrids

## COMPOSITES, LIGHT METALS AND ALLOYS

**Date** 14<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Jayant Jain  
Rajiv Prakash  
Satyam Suwas  
P Sujatha Devi

### Session II : 16.30-18.15 hrs

16.30-17.00 hrs Invited Talk (4)	<u>Satyam Suwas</u> A.M. More, M. Suresh and S. Mishra	New approaches in processing of aluminium-lithium alloys
17.00-17.30 hrs Invited Talk (5)	<u>Rajiv Prakash</u>	Nanocomposite of polymer and 2D materials at air-water interface: Exotic materials for organic devices and sensors
17.30-17.45 hrs Oral (3)	<u>Yazar, K. U</u> and Satyam Suwas	Effect of texture on tensile, fatigue and dwell fatigue of commercially pure titanium alloy

17.45 -18.00 hrs Oral (4)	<u>Khushbu Dash</u> S. Suwas and K. Chattopadhyay	Orientation studies of the interface of a multilayered bimetallic Mg/Zn composite
18.00-18.15 hrs Oral (5)	<u>Dhiraj K. Mahajan</u> Snehit M, Ritik Rai Priya Ghatwai Shrikant V. Joshi and Dheepa Srinivasan	Comparison of various AM routes for the fatigue behavior of Alloy 718

## BIOMATERIALS DEVICES AND APPLICATIONS

**Date** 14<sup>th</sup> February 2019  
**Venue** Management Studies Classroom II  
**Co chairs** Deepthy Menon  
S. Swaminathan

### Session III : 16.30-18.00 hrs

16.30-17.00 hrs Invited Talk (7)	<u>Biman B. Mandal</u>	Bioengineered Human Tissues: The way forward
17.00-17.30 hrs Invited Talk (8)	<u>B. Ravi</u>	Medical Device Innovation and Customization: Role of 3D Printing
17.30-18.00 hrs	<u>Subinoy Rana</u>	Biodiagnostics using nanoparticle-protein conjugates

## 2D MATERIALS

**Date** 14<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** Kausik Majumdar  
Ratnamala Chatterjee  
Awadhesh Mani  
Sandip Ghosh

### Session II : 16.30-18.30 hrs

16.30-17.00 hrs Invited Talk (4)	<u>Awadhesh Mani</u>	Evolution of ground state properties of Bi <sub>2</sub> Se <sub>3</sub> based Topological insulators hosting 2-D surface states under high magnetic field and high pressure
17.00-17.30 hrs Invited Talk (5)	<u>Mandar M Deshmukh</u>	Tunable symmetries and Berry's phase in few layer graphene
17.30-18.00 hrs Invited Talk (6)	<u>Kausik Majumdar</u>	Charge and energy transfer across layered heterojunctions
18.00-18.30 hrs Invited Talk (7)	<u>Saurabh Lodha</u>	Photodetection using 2D layered semiconductors and their heterostructures

## MATERIALS FOR ENERGY AND ENVIRONMENT

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Sebastian Peter  
Vivek Polshettiwar

**Session III : 16.30-18.00 hrs**

16.30-17.00 hrs Invited Talk (6)	<u>Sreeraj Puravankara</u>	Battery materials for Stationary Energy Storage applications
17.00-17.15 hrs Oral (6)	<u>Dibyananda Majhi</u> B. G. Mishra	Photocatalytic application of novel CuS-Bi <sub>2</sub> O <sub>2</sub> CO <sub>3</sub> heterojunction system for chlorpyrifos degradation under visible light illumination
17.15-17.30 hrs Oral (7)	<u>R. Shwetharani</u> Pranav Kulkarni V Suvin, D H Nagaraju and R Geetha Balakrishna	2D FeSe <sub>2</sub> /g-C <sub>3</sub> N <sub>4</sub> and FeSe <sub>2</sub> /rGO Hybrid Nanosheets composites as Electrocatalyst for Electrochemical Hydrogen Evolution
17.30-17.45 hrs Oral (8)	<u>Srinivasa Rao Atchuta</u> Harish C. Barshilia and S. Sakthivel	Ternary transition metal based spinel nanocomposite solar selective absorber coatings for concentrated solar thermal application
17.45-18.15 hrs Invited Talk (7)	<u>Sebastian C Peter</u>	Development of Integrated Technologies for Conversion of Industrial waste CO <sub>2</sub> to MeOH & other Value-added chemicals via Thermochemical Route

**THERMOELECTRICS**

**Date** 14<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Kanishka Biswas  
Ajay Soni  
Ramesh Chandra Mallik  
R Gopalan

**Session II : 16.30-18.30 hrs**

16.30-17.00 hrs Invited Talk (5)	<u>D K Misra</u>	Enhanced Thermoelectric Properties of p-type and n-type half-Heusler Nanocomposites Employing Arc Melting and Spark Plasma Sintering
17.00-17.30 hrs Invited Talk (6)	<u>Ramesh Chandra Mallik</u>	Copper-based Chalcogenides as Thermoelectric Materials
17.30 -18.00 hrs Invited Talk (7)	<u>Jasa Ram</u> Vanita Sheoran, Pratibha, P.S.H. Vaishnavi Gaurav Yadav R.S. Chandra Bose and D S Prem Kumar	Layered Chalcogenides as Thermoelectric Materials
18.00-18.30 hrs Invited Talk (8)	<u>Arindam Ghosh</u> Phanibhusan S Mahapatra and Bhaskar Ghawri	Cross-plane thermoelectricity in twisted bilayer grapheme

## POSTER SESSION

### Photonic Materials

**Date** 14<sup>th</sup> February 2019  
**Time** 14.00-18.30 hrs

05-Poster-01	Deepak K. Gupta R. G. Joshi D. Karthickeyan and B. V. R. Tata	Temperature response of gel immobilized photonic crystals of PNIPAM microgel: the effect of entanglements
05-Poster-02	P. Lavanya Devi and Shourya Dutta-Gupta	Graphene integrated active plasmonic metasurface modulators
05-Poster-03	R. G. Joshi and D. K. Gupta	Quick Fabrication of Microgel Photonic Crystals and Their Solvent Dependent Temperature Response
05-Poster-04	Nisha Deopa A.S. Rao and Animesh Jha	Spectroscopic Studies of Er <sup>3+</sup> -ion- doped Li <sub>2</sub> O-PbO-Al <sub>2</sub> O <sub>3</sub> -B <sub>2</sub> O <sub>3</sub> Glasses for Visible Green and 1.5μm Photonic Device Applications
05-Poster-05	Samridha Ray S. Jana and S. Mukherjee	Chemically Exfoliated MoSe <sub>2</sub> Quantum Dots for Vertically Heterojunction, Broadband Photodetector
05-Poster-06	Anu Babusen Subhamoy Sahoo C. Vijayan and Jayeeta Bhattacharyya	Spectroscopic study on the origin of stokes shift in carbon dots synthesized through hydrothermal reaction
05-Poster-07	Rajendra P. Panmand, Bharat B. Kale James G Addis and Animesh Jha	Investigation on the photoluminescence properties of (Tb <sup>3+</sup> , Mn <sup>2+</sup> ) -doped CdS Quantum Dots in a Silicate Glass Matrix
05-Poster-08	Amita Chaturvedi P. Mondal , A. K. Sinha T. S. Dhami and M.P. Joshi	On the red shift of optical absorption band of TiO <sub>2</sub> in Au-TiO <sub>2</sub> nanocomposites fabricated using pulsed laser ablation in liquid method
05-Poster-09	N Sivakumar G. Anbalagan and R. Jayavel	Synthesis, structure and thermal decomposition behavior of an organic material: p-nitrobenzylidene-p-phenylamineaniline
05-Poster-10	Megha Khokhar and Rajesh V. Nair	Observation of Resonant Modes in Two-dimensional Photonic Monolayers
05-Poster-11	Janaradhan Rao, Nitu Salunke, Sonam Unde, Tejaswini Manolikar, Nazia Tarranum and Ajit Dhattrak Ranjit Hawaldar	Synthesis and characterization of Double Pervoskites Halides
05-Poster-12	Navneet C. Verma, Chethana Rao and Chayan K. Nandi	Fluorescent and Specific Nanodots for Nanoscopy

05-Poster-13	Emma P. Mukhokosi Basanta Roul, Saluru B. Krupanidhi and Karuna K. Nanda	Towards fast and highly responsive SnSe <sub>2</sub> based photodiode by exploiting the mobility of the counter semiconductor
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## POSTER SESSION

### Multiferroics

**Date**                    **14<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

10-Poster-01	K Prabahar R. Ranjith and A. Srinivas	Growth controlled columnar structures of lead-free multiferroic Ba <sub>0.85</sub> Ca <sub>0.15</sub> Zr <sub>0.1</sub> Ti <sub>0.9</sub> O <sub>3</sub> /CoFe <sub>2</sub> O <sub>4</sub> thin films for magneto-dielectric devices
10-Poster-02	Sujoy Saha, Sadhan Chanda Alo Dutta and T P Sinha	Structural and magnetic Properties of La <sub>2-x</sub> Bi <sub>x</sub> NiMnO <sub>6</sub>
10-Poster-03	Avinash Kumar Amit Kumar and Rajeev Ranjan	Is ferromagnetism intrinsic or extrinsic in the multiferroic alloy system BiFeO <sub>3</sub> -BaTiO <sub>3</sub> ?
10-Poster-04	Vibha, Sujata Sanghi, Ashish Agarwal, Meenal, Anand Kumari and Ekta Arya	Structural properties of double perovskites SrBiMTiO <sub>6</sub> (M = Fe, Cr, Mn)
10-Poster-05	Meenal, Sujata Sanghi, Ashish Agarwal, Anand Kumari, Ekta Arya and Vibha	Studies on Crystal Structure and Dielectric properties of BaTiO <sub>3</sub> - CoFe <sub>2</sub> O <sub>4</sub> Magneto-electric Composites
10-Poster-06	Akhilesh Kumar Singh Rishikesh Pandey Ashutosh Upadhyay and N. K. Verma	Crystal Structures and Phase Transitions in new Bi-based Piezoceramics with Morphotropic Phase Boundary
10-Poster-07	Ekta Arya Ashish Agarwal, Rakesh Dhar, Sujata Sanghi, Meenal, Anand Kumari and Vibha	Study of crystal Structure refinement and dielectric properties of magnetoelectric composite
10-Poster-08	Jogender Singh Ashish Agarwal, Sujata Sanghi, Manisha Yadav, Tanvi Bhasin and Umesh Bhakar	Crystal structure transformation and improved dielectric and magnetic properties of Ho-substituted Bi <sub>0.80</sub> La <sub>0.20</sub> FeO <sub>3</sub> multiferroics
10-Poster-09	Tanvi Bhasin Ashish Agarwal, Sujata Sanghi, Manisha Yadav, Muskaan Tuteja and Jogender Singh	Multiferroic and magnetoelectric properties of NiFe <sub>2</sub> O <sub>4</sub> and Na <sub>0.5</sub> Bi <sub>0.5</sub> TiO <sub>3</sub> based composites



10-Poster-10	Manisha Yadav Ashish Agarwal, Sujata Sanghi, Tanvi Bhasin, Muskaan Tuteja and Jogender Singh	Role of Cr on Structural, Dielectric and Magnetic Properties of $\text{Bi}_{0.9}\text{Nd}_{0.1}\text{FeO}_3$
10-Poster-11	Anand Kumari Sujata Sanghi, Ashish Agarwal, Meenal, Ekta Arya and Vibha	Study of crystal structure and dielectric properties of multiferroic composite
10-Poster-12	Prince Kr. Gupta Seema Kumari Arkadeb Pal and Sandip Chatterjee	Multiferroic properties and magneto-dielectric coupling in Co-doped $\text{Bi}_{0.5}\text{La}_{0.5}\text{Fe}_{0.5}\text{Mn}_{0.5}\text{O}_3$ multiferroics
10-Poster-13	R Rajesh Kumar and A Venimadhav	Novel non collinear spin structured multiferroic at room temperature electric field
10-Poster-14	Shashaank Gupta	Quantification of domain switching in polycrystalline ceramics
10-Poster-15	M M Saj Mohan, and Ranjith Ramadurai	Influence of Strain and Anisotropy on structure of $\text{BiFeO}_3$ epilayers and their utilization as interface driven heterostructures for multiferroic device applications
10-Poster-16	Premakumar Yanda and A. Sundaresan	Spin driven multiferroicity in the green phase $\text{Gd}_2\text{BaCuO}_5$
10-Poster-17	Lakshmi Kola Atal Bihari Swain, V. Subramanian and P. Murugavel	Large and self-biased magnetoelectric response in lead free $\text{BaTi}_{1-x}\text{Sn}_x\text{O}_3/\text{NiFe}_2\text{O}_4$ bilayer laminated composites
10-Poster-18	A. Pal A. Venimadhav and P. Murugavel	Investigation of room temperature magnetization reversal and magnetocaloric switching in $\text{GdMn}_{1-x}\text{Fe}_x\text{O}_3$
10-Poster-19	Atal Bihari Swain, S. Dinesh Kumar, Martando Rath, M.S. Ramachandra Rao V. Subramanian and P. Murugavel	Energy harvesting and sensor applications studies in lead-free ferroelectric $0.5\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3-0.5(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3$ system
10-Poster-20	P N Ravi Shankar and A. Sundaresan	Structure and Multiferroic Properties of Doubly Ordered Perovskites $\text{NaNiWO}_6$ ( $\text{Ln} = \text{La, Sm, Gd, Eu, Ho, Y}$ )
10-Poster-21	Harshit Agarwal N P Lalla, O N Srivastava and M A Shaz	Octahedral tilting induced multiferroicity in polycrystalline $\text{TbMnO}_3$
10-Poster-22	Pooja Pant Harshit Agarwal, O N Srivastava, and M A Shaz	Structural characterization of Ca doped $\text{GdMnO}_3$
10-Poster-23	Bhawana Mali and Suja Elizabeth	Magnetic and electrical properties of $\text{Gd}_2\text{BaCoO}_5$ 1-D spin chain compound

10-Poster-24	U Manju	Rare-earth based Multiferroic oxides: an intermixing of multiple properties
10-Poster-25	Jayjit Kumar Dey and Saurav Giri	Multiferroic order associated with the significant magnetodielectric coupling in NiFe <sub>2</sub> O <sub>4</sub>
10-Poster-26	Indukuru Ramesh Reddy Peter M. Oppeneer and Kartick Tarafder	Route to achieving giant magnetoelectric coupling in BaTiO <sub>3</sub> /Sr <sub>2</sub> CoO <sub>3</sub> F perovskite heterostructures

## **POSTER SESSION**

### **Photovoltaics**

**Date**                    **14<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

11-Poster-01	Gaurav Siddharth Brajendra S. Sengar, Vivek Garg, Amitesh Kumar, Md Arif Khan and Shaibal Mukherjee	Temperature dependent performance analysis of InGaN based p-i-n solar cell
11-Poster-02	Brajendra S. Sengar Vivek Garg, Gaurav Siddharth, Md Arif Khan and Shaibal Mukherjee	Band alignment study of Mg-doped ZnO/ CZTSSe heterojunction for Photovoltaic applications
11-Poster-03	Naveen Kumar Tailor Mrinmoy K Chini and Soumitra Satapathi	Inorganic halide perovskite single crystal: Growth mechanism, Structural and optical properties
11-Poster-04	Md Sariful Sheikh, A.P. Sakhya, Alo Dutta and T. P. Sinha	Light induced charge transport in La <sub>2</sub> NiMnO <sub>6</sub> based Schottky diode
11-Poster-05	Priya Srivastava and Monojit Bag	Effect of Applied Bias on Charge Transport Kinetics and Diffusion at Hybrid Perovskite- Liquid Electrolyte Interface
11-Poster-06	Vivek Garg, Brajendra S. Sengar, Gaurav Siddharth Amitesh Kumar, Shailendra Kumar and Shaibal Mukherjee	Sputter-stimulated plasmonic excitations in GMZO thin films: For ultrathin photovoltaic applications
11-Poster-07	B. Anitha, Vijith K. P Minu Mohan and Manoj A.G. Namboothiry	Effect of upscaling from small area to 1 cm <sup>2</sup> on the photovoltaic parameters of inverted bulk heterojunction organic solar cells
11-Poster-08	B Divya Sreekanth Mandati, A Ramachandraiah and Balusu V. Sarada	Electrodeposition of device quality thin films for the solar cell photovoltaic applications

11-Poster-09	Sunil Kumar and Parlay Maiti	Photovoltaic performance of quantum dot sensitized solar cell designed with chemically functionalized thermoplastic polyurethanes as a hole mobile interface
11-Poster-10	Vani Pawar Manish Kumar, R. Prasad and Prabhakar Singh	Substitution of Cs <sup>+</sup> on CH <sub>3</sub> NH <sub>3</sub> PbI <sub>3</sub> perovskite material: cold sintering method
11-Poster-11	Manish Kumar Vani Pawar, P.C. Bharti and Prabhakar Singh	The influence on structural, optical and thermodynamic properties: cold- sintered CsPbX <sub>3</sub> (X= I, Br)
11-Poster-12	Subhash Chander Samita Mishra and Arijit K. De	Charge transfer mechanism and stability augmentation in all-inorganic CsPbBr <sub>3</sub> halide perovskite solar cells having an efficient CdS electron transfer layer
11-Poster-13	Samita Mishra Subhash Chander and Arijit K. De	Charge transfer dynamics and performance enhancement in scaffold-layered organic-inorganic halide perovskite solar cells
11-Poster-14	Rajkumar Barla Bimlesh Lochab and Samarendra Pratap Singh	Green Source end capped D-A-D type Difluorobenzothiazole based small molecules for Organic solar cell applications
11-Poster-15	Moorthy Dhanasekar Sarpangala Venkataprasad Bhat	Cu <sub>2</sub> ZnSnS <sub>4</sub> absorber layer for thin film solar cells using a highly stable precursor solution
11-Poster-16	Veerender Putta A. K. Chauhan, S. P. Koiry, P. Jha, C. Sridevi and K. P. Muthe	Design approach for Large Area Flexible Solar Cells
11-Poster-17	Reethu Haridas A. Vindhyasarumi, Saurav Chandrapradhan, V. Jayadev, Suraj Soman, K N Narayanan Unni and Karuvath Yoosaf	Donor-p-Acceptor Conjugated Organic Dyes for Efficient Dye-Sensitized Solar Cells
11-Poster-18	P P Biswas, S. Pal, V. Subramanian and P. Murugavel	Role of Lanthanum substitution on photovoltaic properties of polycrystalline BiFeO <sub>3</sub> thin films.
11-Poster-19	Subhajit Pal Atal Bihari Swain, Pranab Parimal Biswas and P. Murugavel	Evidence of bulk photovoltaic effect in photoferroelectric oxides
11-Poster-20	Narmada Basva and M. S. Ramachandra Rao	Electrical Transport Study of Cu <sub>1.7</sub> Zn <sub>1.3</sub> SnS <sub>4</sub> Thin Films
11-Poster-21	Namrata Pant Masatoshi Yanagida, Yasuhiro Shirai and Kenjiro Miyano	Study of charge carrier dynamics in perovskite solar cells with different hole transport layers

11-Poster-22	R. Govindaraj N. Santhosh, M. Senthil Pandian and P. Ramasamy	Influence of Hydrothermally Synthesized Titanium Dioxide Nanorods/Nanoparticles in Dye-sensitized Solar Cell
11-Poster-23	Kurias K Markose Aldrin Antony and M K Jayaraj	Carrier selective doubleheterojunction solar cells using PEDOT: PSS and MgF <sub>2</sub> selective layers
11-Poster-24	Ved Prakash Arya and Sumitra Arya	Recent trends in Photovoltaic technology
11-Poster-25	J Nithyanandhan R. Bisht, N. Karjule and M. F. M. Kavungathodi	Squaraine Based Dyes for Dye-Sensitized Solar Cells
11-Poster-26	J. Khare , A. Yadav, T. S. Dhami, S. K. Rai and M. P. Joshi	Growth and Characterization of Nanostructured Thin Films of CZTS
11-Poster-27	Vinayak Adimule Anusha Suryavanshi Ritu Shrivatsava and Yallur B C	Fabrication of Hybrid Perovskite Nanomaterials of Scandium, Yttrium Doped with Novel Derivatives of Poly-3-octyl thiophene (P3OT) for High Power Efficient Energy Harvesting Photovoltaic Cells

## POSTER SESSION

### Characterization Techniques

**Date**                    **14<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

18-Poster-01	R J Deokate	Effect Temperature on of Substrate physical properties of nickel oxide (NiO) thin films by spray pyrolysis
18-Poster-02	Kishore K Madapu and Sandip Dhara	Near-field Optical Properties of 2DEG of InN Nanostructures and Observation of Surface Plasmon Polaritons
18-Poster-03	A Bose, R. Tewari, S. Raghavendra and S. C. Joshi	Study of hydride precipitation on electropolished Niobium surface under nitrogen doped condition
18-Poster-04	R Sivakumaran and S.Paul Pandian	Characterisation of thin film coating induced stress by Nanoindentation
18-Poster-05	Gurwinder Kaur, Piyush Sharma and O.P. Pandey	Thermal kinetics involved during solid state synthesis of boron trioxide from boric acid
18-Poster-06	Hasna M A Reny Thankam Thomas Parvathy R Chandran Nabeela Kallayi and Saju Pillai	Nanocellulose: A versatile support for the growth of anisotropic metal nanostructures as SERS substrate for environmental monitoring

## POSTER SESSION

### Computational Materials Science

**Date** 14<sup>th</sup> February 2019  
**Time** 14.00-18.30 hrs

15-Poster-01	Prabal Dev Bhuyan Sanjeev K. Gupta, Yogesh Sonvane and P. N. Gajjar	The study of electronic and transport properties of diameter dependent core/shell nanowire
15-Poster-02	Shilpa Singh Sanjeev K. Gupta Yogesh Sonvane K. A. Nekrasov A. Ya. Kupryazhkin and P. N. Gajjar	Density functional study of pressure induced phase transition in ThO <sub>2</sub> and UO <sub>2</sub>
15-Poster-03	T.K Bijoy P. Murugan and Vijay Kumar	Prediction of Atomic Structure and Electronic Properties of A <sub>2</sub> B <sub>2</sub> XY (A = Si–Pb, B = Cl–I, and XY = PN and SiS) Inorganic Double Helices from First Principles Calculations
15-Poster-04	P H Suthar and A K Shah	Collective Modes and Elastic Properties of RE <sub>55</sub> Al <sub>25</sub> Co <sub>20</sub> Bulk Metallic Glasses
15-Poster-05	Gargee Bhattacharyya Preeti Bhauriyal Priyanka Garg and Biswarup Pathak	Ferromagnetism and Half-Metallicity in Magnesium Chloride Monolayer with a Large Spin-up Gap
15-Poster-06	Anu Bala and Vijay Kumar	Doping of Rare Earths in Metal Halide Perovskites: A Computational Study
15-Poster-07	Madhvendra Nath Tripathi and Aishwarya Rai	Structural, elastic, electronic and optical properties of Lead-free halide double perovskite Cs <sub>2</sub> AgInCl <sub>6</sub> : A first-principle study

### SEMICONDUCTORS, SILICON GERMANIUM, III-V AND II-VI

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Bharat B Kale  
Samaresh Das  
Apurba Laha

**Session II** : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (4)	<u>Animesh Jha</u> C. Maddi, P. Aparna, K V. Adarsh and A.J. Scott	Spectroscopic and Structural Properties of Doped and Undoped 2D-MoS <sub>2</sub> Thin Films for Optoelectronic and Photonic Device applications
14.30-15.00 hrs Invited Talk (5)	<u>Samaresh Das</u> Veerendra Dhyani, Akshay Moudgil and John Wellington	Efficient Photodetectors based on Nanowire FET and Hetrojunction for Visible to Infrared Wavelengths
15.00-15.30 hrs Invited Talk (6)	<u>Apurba Laha</u>	III-Nitride semiconductor heterostructures: From 2-D planer to 0-D Quantum Dots

15.30-16.00 hrs Invited Talk (7)	<u>Alok Jain</u> Kamal Lohani and Abhishek Sharma	Dependence of InGaN/GaN MQW laser diode optical performance on number of QW's and EBL composition
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## GRAPHENE

**Date** 15<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** Harish C. Barshilia  
B R Mehta  
Manu Jaiswal  
Aveek Bid

### Session I : 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (1)	<u>Anjan K. Gupta</u> and Anil K. Singh	STM/S study of gate dependent electronic inhomogeneity in Graphene on SiO <sub>2</sub> substrate
14.30-15.00 hrs Invited Talk (2)	<u>Sudipta Dutta</u>	Spin-filtering and rectification in graphene based lateral heterostructures
15.00-15.30 hrs Invited Talk (3)	<u>Manu Jaiswal</u>	Structure and transport of confined water in graphene oxide membranes
15.30-16.00 hrs Invited Talk (4)	<u>N Ballav</u> P. K. Jha, S. K. Singh V. Kumar, S. Rana and S. Kurungot	High-Level Supercapacitive Performance of Chemically Derived Reduced Graphene Oxide

## ORGANIC ELECTRONICS

**Date** 15<sup>th</sup> February 2019  
**Venue** Management Studies Classroom II  
**Co chairs** Manoj A G Namboothiry  
S. Sundar Kumar Iyer  
Rajneesh Misra  
Satish Patil

### Session III : 14.00-15.45 hrs

14.00-14.30 hrs Invited Talk (9)	<u>Joshy Joseph</u> and Silja Abraham	Electrochromic Devices Based on Cross-Linkable Diphenylamine Derivatives: Tuning of Optoelectronic and Device Properties
14.30-15.00 hrs Invited Talk (10)	<u>J. Nithyanandhan</u> R. Bisht, N. Karjule and M.F.M.Kavungathodi	Squaraine Based Dyes for Dye-Sensitized Solar Cells
15.00-15.30 hrs Invited Talk (11)	<u>Dinesh Kabra</u>	Tracking the dark triplet excitons enroute to conversion in bright singlets to boost electroluminescence efficiency
15.30-15.45 hrs Oral (1)	<u>Saheli Karmakar</u> and Debdas Ray	Multiple State Emission through Fluorescence and Room-Temperature Phosphorescence in Pyridine-Fused Coumarins, and Chemical Detection

## NANOMATERIALS: SYNTHESIS & SOLUTIONS ROUTE

**Date** 15<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** K Byrappa  
Neena Susan John  
Ujjal K Gautam  
Ashok K Ganguli  
Anirban Chowdhury

**Session II : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (4)	<u>Ashok K. Ganguli</u>	Microemulsion and solvothermal methods for design of nanostructures for photoelectrochemical applications
14.30-15.00 hrs Invited Talk (5)	<u>B. Lochab</u> N. Yadav and V. Kallur	Modulation of Functionalities in Graphene Oxide
15.00-15.30 hrs Invited Talk (6)	<u>Neena S. John</u> Alex C and Vivek Ramakrishnan	Molybdenum Oxide Nanostructures
15.30-15.45 hrs Oral (3)	<u>M. Dileep</u> and Baral S.S	Synergistic effect of dual electron-cocatalyst modified photocatalyst and methodical strategy for better charge separation
15.45-16.00 hrs Oral (4)	<u>Debrina Jana</u>	Exploring potentiality of wormhole mesoporous $\gamma$ -alumina matrix for generation of nanocrystals

## MAGNETIC, SPINTRONICS AND SUPERCONDUCTORS

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Co chairs** Debakanta Samal  
A K Pramanik  
Manivel Raja Muthuvel  
K G Suresh  
Satyajit Banerjee

**Session II : 14.00-16.00 hrs**

14.00-14.30 hrs Invited Talk (4)	<u>K G Suresh</u>	Novel materials for spintronics
14.30-15.00 hrs Invited Talk (5)	<u>Ajaya K Nayak</u>	Room temperature magnetic antiskyrmions in tetragonal Heusler materials
15.00-15.30 hrs Invited Talk (6)	<u>Sunil Nair</u>	Magnetoelectric and Multiferroic properties of $Mn_4Ta_2O_9$ and $Fe_4Ta_2O_9$
15.30-15.45 hrs Oral (2)	<u>L. S. Sharath Chandra</u> Shyam Sundar M. K. Chattopadhyay and S. B. Roy	Phonon softening across the Electronic Topological Transitions in Superconducting $Mo_{1-x}Re_x$ alloys
15.45-16.00 hrs Oral (3)	<u>Sunil Nair</u> Avirup De Arup Ghosh and Rajesh Mandal	A comparative study of spin Seebeck effect and anomalous Nernst effect in a ferromagnetic metal/normal-metal bilayer system

## THERMOELECTRICS

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Kanishka Biswas  
Ajay Soni  
Ramesh Chandra Mallik  
R Gopalan

### Session III: 14.00-16.00 hrs

14.00-14.30 hrs Invited Talk (9)	<u>Kanishka Biswas</u>	Intrinsically low thermal conductivity in metal chalcogenides for high performance thermoelectric energy conversion
14.30-15.00 hrs Invited Talk (10)	<u>T Dasgupta</u>	ZnSb based materials for Thermoelectric Power Generation
15.30-15.45 hrs Oral (1)	<u>Ranu Bhatt</u> Anil K. Bohra Shovit Bhattacharya Ajay Singh, Ranita Basu and K.P. Muthe	Tailoring of Contact Resistance for the Development of Bi-Te Based Thermoelectric Devices
15.45-16.00 hrs Oral (2)	<u>Meetu Bharti</u> Ajay Singh, K. P. Muthe and D. K. Aswal	Thermoelectric power generation: From the perspective of conducting polymers

## NITRIDE ELECTRONICS

**Date** 15<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Mahesh Kumar  
Poornendu Chaturvedi  
Thirumaleshwara N Bhat  
Anirban Bhattacharyya  
Suchandan Pal

### Session III : 14.00-15.00 hrs

14.00-14.30 hrs Invited Talk (8)	<u>Poornendu Chaturvedi</u>	Solid State Microwave Devices for Defence
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## BATTERIES, FUEL CELLS AND SUPERCONDUCTORS

**Date** 15<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** S. Sampath  
Vijayamohanan K Pillai  
Prabeer Barpanda  
Aninda J Bhattacharya

### Session III : 14.30-15.00 hrs

14.30-15.00 hrs Invited Talk (5)	<u>Raj Ganesh S. Pala</u>	Engineering polymorphism in Manganese oxides for Lithium Ion Battery Cathodes
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## SEMICONDUCTORS, SILICON GERMANIUM, III-V AND II-VI

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall B, National Science Seminar Complex  
**Co chairs** Bharat B Kale  
Samaresh Das  
Apurba Laha

### Session III : 16.30-17.00 hrs

16.30-16.45 hrs Oral (3)	<u>Emmanuel Paneerselvam</u> Nilesh J. Vasa M. S. Ramachandra Rao Daisuke Nakamura and Hiroshi Ikenoue	Simultaneous doping and annealing of SiC thin films grown by pulsed laser deposition
16.45-17.00 hrs Oral (4)	<u>Saumya Sengupta</u> and Sudipto Das Gupta	A theoretical evaluation of III-Arsenide based Quantum Well photodetectors for MWIR and LWIR application

## GRAPHENE

**Date** 15<sup>th</sup> February 2019  
**Venue** Satish Dhawan Auditorium  
**Co chairs** Harish C. Barshilia  
B R Mehta  
Manu Jaiswal  
Aveek Bid

### Session II : 16.30-18.45 hrs

16.30-17.00 hrs Invited Talk (5)	<u>Jayakumar Balakrishnan</u> Karuna Kumari, Sonu Bishnoi, Ashutosh Kumar, Dinesh K Kotnees, Soumya J Ray and Ajay D Thakur	Transport studies in LSMO-rGO nano-composites
17.00-17.30 hrs Invited Talk (6)	<u>T N Narayanan</u>	Molecular Junctions of Graphene in Heterogeneous Catalysis
17.30-18.00 hrs Invited Talk (7)	<u>Anindya Das</u>	Graphene Quantum Heat Conductor
18.00-18.15 hrs Oral (1)	<u>A. Mohapatra</u> P. C. Mahakul M. S. Ramachandra Rao and Manu Jaiswal	Green route to growth of CVD graphene layers for thermal management application
18.15-18.30 hrs Oral (2)	<u>Rahul Sharma</u> Krishna Rani Sahoo, Pankaj Rastogi and T. N. Narayanan	Vapor Transport Assisted Direct Growth of Atomic Layer Films for Device Applications
18.30-18.45 hrs Oral (3)	<u>Chayan Kanti Nandi</u>	Rectifying the Misleading Artifacts in Carbogenic Nanodots

## NANOMATERIALS: SYNTHESIS & SOLUTIONS ROUTE

**Date** 15<sup>th</sup> February 2019  
**Venue** J N Tata Main Auditorium  
**Co chairs** K Byrappa  
Neena Susan John  
Ujjal K Gautam  
Ashok K Ganguli  
Anirban Chowdhury

### Session III : 16.30-18.00 hrs

16.30-17.00 hrs Invited Talk (7)	<u>Kamalakaran Kailasam</u>	Nanoporous polymeric networks as photocatalyst for H <sub>2</sub> generation & organic conversion in visible light
17.00-17.30 hrs Invited Talk (8)	<u>Karuvath Yoosaf</u> and ManikantanSajitha	Evolving Greener Synthetic Route to Anisotropic Plasmonic Nanostructures and their Native Biophotonic Applications
17.30-17.45 hrs Oral (5)	<u>G. Kedawat</u> K. Nagpal and B. K. Gupta	Controlled Synthesis of Gold Nanorods with Varying Aspect Ratios and Their Biological Applications
17.45-18.00 hrs Oral (6)	<u>Vijayakumar C. Nair</u>	Engineering of Hybrid Perovskite Materials for Energy Storage Applications

## MAGNETIC, SPINTRONICS AND SUPERCONDUCTORS

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall C, National Science Seminar Complex  
**Co chairs** Debakanta Samal  
A K Pramanik  
Manivel Raja Muthuvel  
K G Suresh  
Satyajit Banerjee

### Session III : 16.30-18.15 hrs

16.30-17.00 hrs Invited Talk (7)	<u>S Patnaik</u>	Emergent Properties of Superconductors Derived from Topological Insulators and Weyl semimetals
17.00-17.30 hrs Invited Talk (8)	<u>Satyajit S Banerjee</u> Dibya J. Sivananda Ankit Kumar, Md. Arif Ali, Pintu Das, Jens Muller and Zachary Fisk	Exploring the magnetic polaronic state near the ferromagnetic transition in EuB <sub>6</sub> through domain imaging using Magneto-optical imaging
17.30-17.45 hrs Oral (4)	<u>Dhruba Das</u> and M S Ramachandra Rao	As Grown Color Centers In Diamond Thin Films Grown By Hot Filament Chemical Vapor Deposition Without Ex-situ Doping
17.45-18.00 hrs Oral (5)	<u>Ajesh K G</u> V Mohanan and PS Anil Kumar	Elliptical expansion of magnetic domain walls in samples with tilted anisotropy
18.00-18.15 hrs Oral (6)	<u>Sreekar Guddeti</u> Ajesh K. G. and P. S. Anil Kumar	Effect of tilted magnetic anisotropy on the deterministic current induced magnetization reversal in quasi-perpendicularly magnetized Ta/Pt/CoFeB/Pt multilayers

## THERMOELECTRICS

**Date** 15<sup>th</sup> February 2019  
**Venue** Hall A, National Science Seminar Complex  
**Co chairs** Kanishka Biswas  
Ajay Soni  
Ramesh Chandra Mallik  
R Gopalan

**Session IV : 16.30-17.00 hrs**

16.30-17.00 hrs Invited Talk (11)	<u>Abhishek K Singh</u> Rinkle Juneja Tribhuwan Pandey	High Thermoelectric Performance in n-doped Silicon-Based Chalcogenide Si <sub>2</sub> Te <sub>3</sub>
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## COMPOSITES, LIGHT METALS AND ALLOYS

**Date** 15<sup>th</sup> February 2019  
**Venue** Robert Bosch Lecture Hall  
**Co chairs** Jayant Jain  
Rajiv Prakash  
Satyam Suwas  
P Sujatha  
Devi

**Session III : 16.00-16.30 hrs**

16.00-16.30 hrs Invited Talk (6)	<u>D. Srivastava</u>	
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## POSTER SESSION

### OXIDE ELECTRONICS

**Date** 15<sup>th</sup> February 2019  
**Time** 14.00-18.30 hrs

02-Poster-01	Tanmoya Ghosh Kumaraswamy Miriyala and Ranjith Ramadurai	Design and Fabrication of Lead Free Piezoelectric Na <sub>0.5</sub> Bi <sub>0.5</sub> TiO <sub>3</sub> Thick Films for Vibrational Sensor Application
02-Poster-02	Naveen Kumar and Rajeev Ranjan	A direct experimental investigation into the role of grain-to-grain interaction in determining the coupling between lattice-strain and non-180° domain switching in rhombohedral perovskite piezoceramics.
02-Poster-03	Anupam Mishra and Rajeev Ranjan	Enhancement of piezoelectric response by tuning structural heterogeneity in Na <sub>0.5</sub> Bi <sub>0.5</sub> TiO <sub>3</sub> ceramics by varying A-site stoichiometry
02-Poster-04	Ananya Biswas, Shobha Gondh and A.K. Pramanik	Structural and Magnetic studies in S = 1/2 trigonal lattice Ba <sub>3</sub> CuV <sub>2</sub> O <sub>9</sub>
02-Poster-05	Arnab De and Rajeev Ranjan	Influence of the inter-ferroelectric transformation on the photoluminescence response of the embedded Eu <sup>+3</sup> ions in BaTiO <sub>3</sub> -based lead-free piezoelectrics

02-Poster-06	Gobinda Das Adhikary Dipak Kumar Khatua and Rajeev Ranjan	Rare Earth Photoluminescence (PL) as a probe to investigate the local structure of Relaxor Ferroelectric $(1-x)\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ - $x\text{K}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ (NBT-KBT)
02-Poster-07	Kanika Arora and Mukesh Kumar	Ultra-high performance of $\beta\text{-Ga}_2\text{O}_3$ based self-powered solar-blind $\beta$ Ultra-high performance of photodetector using interface engineering
02-Poster-08	A. Bhaduri and Kajal	Optoelectronic properties of Cupric Oxide (CuO) Nanoparticles
02-Poster-09	S. D. Lokhande L. H. Kathwate M. B. Awale and V. D. Mote	Synthesis and characterization on Ni doped CuO thin films by Spray Pyrolysis Technique
02-Poster-10	Karuna Kumari Ajay D Thakur and Soumya Jyoti Ray	Electronic transport properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ -ZnO nanocomposite system
02-Poster-11	Subin P. S and M. K. Jayaraj	Observation of Unipolar Behaviour in $\text{TiO}_2$ Thin Film for Resistive Switching Memory Application
02-Poster-12	Manu Shaji, K J Saji and M K Jayaraj	Boron doped Cuprous Oxide for p-channel thin film transistor application
02-Poster-13	Upendra Kumar and Shail Upadhyay	Structural Optical and Electrical Properties of Eu-doped at the Site of Sr and Sn in $\text{Sr}_2\text{SnO}_4$ Layered Perovskite.

## **POSTER SESSION**

### **NANOMATERIALS DEVICES AND APPLICATIONS**

**Date**                    **15<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

07-Poster-01	Sauvik Chatterjee Sabuj Kanti Das and Asim Bhaumik	$\text{Ce}_2\text{NDC}_3$ : A Paramagnetic Metal-organic Framework for $\text{CO}_2$ Capture and and $\text{CO}_2$ Fixation
07-Poster-02	Mangal Das Amitesh Kumar Sanjay Kumar Biswajit Mandal Gaurav Siddharth and Shaibal Mukherjee	Effect of Metal/Oxide interface on Ytria based memristive devices
07-Poster-03	Abdo Hezam K. Namratha Q.A. Drmsh and K.Byrappa	$\text{Cs}_2\text{O-Bi}_2\text{O}_3\text{-ZnO}$ Heterostructure as a Direct Z-Scheme Photocatalyst for Photocatalytic Overall Water Splitting
07-Poster-04	Krishna Kumar Vishal Mohade and P. Swaminathan	Effect of silver nanoparticles on the optoelectronic properties of copper oxide thin films

07-Poster-05	Biswajit Mandal Daya Shankar Sharma Gaurav Siddharth Ritesh Bhardwaj Mangal Das and Shaibal Mukherjee	Surface defective MoO <sub>3</sub> nanofibers towards highly sensitive ethanol detection
07-Poster-06	Gaurav S. Patil and Jegatha N. Krishnan	Rapid Electrochemical sensor based on Gold nanostructures for Voltammetric detection of heavy metal ions in water
07-Poster-07	Braj Krishna Amritendu Roy and Kaushik Das	Synthesis and Characterization of SU8/ZNO Nanocomposite Films for Energy Harvesting
07-Poster-08	Ranjana Venugopal Gayathri P.T.G and Biswapriya Deb	Hydrated Tungsten Oxide Nanosheet Electrodes for Broadband Electrochromism and Energy Storage
07-Poster-09	Janki Shah Saket Kumar, Mukesh Ranjan , Yogesh Sonvane Prachi Thareja and Sanjeev K. Gupta	The effect of filler geometry on thermo-optical and rheological properties of CuO nanofluid
07-Poster-10	Anamika Ghosh Dipsikha Ganguly and Sundara Ramaprabhu	Investigation of Dependence of pH and substrates for the Performance optimization of Ni-NiO/NC based Glucose sensor
07-Poster-11	Pranjali Jadhao Subhish Jhon and Somnath Roy	Development of Bandgap Modified Cu <sub>x</sub> O(x-1,2) -TiO <sub>2</sub> Heterosturure for Photoelectrochimcal Water Splitting Application
07-Poster-12	Vishal Kumar Mrinmoy Kumar Chini and Soumitra Satapathi	Fluorescent Nanomaterial based Sensing study of Heavy Metal Pollutants in Aqueous System
07-Poster-13	Shivaraju H P Anil Kumar KM, Midhun G, Akarsha K Ashika O N, and Suryalakshmi C K	Preparation of CdS/TiO <sub>2</sub> nanocomposite for CO <sub>2</sub> Reduction and its Potential Application in Inducing Methane yield under Biomethanation Processes
07-Poster-14	Midhun G Anil Kumar KM and Shivaraju HP	Photocatalytic Degradation of Toxic Industrial Dye using Hg/CeO <sub>2</sub> Nanomaterials under Alternative Driving Energy
07-Poster-15	C. Lakshmanan A. K. Behera R. N. Viswanath S. Amirthapandian R. Rajaraman and G. Amarendra	Electrochemically induced microstructure variation in nanoporous Au
07-Poster-16	R. N. Viswanath C. Lakshmanan Padmalochan Panda R. Ramaseshan B. Sundaravel R. Rajaraman and G. Amarendra	Study of defects and hardness in irradiated nanoporous Au

07-Poster-17	Abhay A. Sagade	Self-aligned metal contacts for high frequency Schottky diodes
07-Poster-18	Someshwar Pola	Synthesis and Characterization of dibenzo[a,g]coronene and their thin film transistor properties
07-Poster-19	Gurumurthy.B. Ramaiah	Application and Evaluation of Silver nanoparticles (AGNPs) coupled with fluoro-triazine based reactive dyes on cotton fabrics by exhaust dyeing method
07-Poster-20	Shreyasi Das Tamal Dey , Poulomi Chakrabarti, Sumita Santra, Samit Kumar Ray and Soumen Das	Graphene Quantum Dot based Enhanced Humidity Sensor
07-Poster-21	Vadiraj K T and Shiddappa L Belagali	Effect of Dopant on Zinc Sulfide Based Hybrid Solar Cells
07-Poster-22	Sandra Dias Kishan Lal Kumawat and S.B. Krupanidhi	CH <sub>3</sub> NH <sub>3</sub> PbBr <sub>3</sub> Quantum Dots for Visible Wavelength Photodetector Applications
07-Poster-23	Divya Verma Piyush Avasthi and Viswanath Balakrishnan	Effect of oxide thickness and strain rate on mechanical properties of Al <sub>2</sub> O <sub>3</sub> coated vertically aligned CNT forest
07-Poster-24	S. M. Ansari, B. C. Keswani, R. D. Bhor, K. R. Pai S. Mazumder, D. Sen, C. V. Ramana and Y. D. Kolekar	Physiochemical characterization of cobalt-ferrite nanoparticles and their biomedical application for cancer treatment
07-Poster-25	Sujata R. Shinde and Pradip P. Patil	Fast responding and highly selective LPG sensor prepared by solchemically synthesized ZnO nanorods
07-Poster-26	Binaya Kumar Sahu Rabindranath Juine and A. Das	Optically Active Defects in Nanomaterials as Probe for Pollutant Detection
07-Poster-27	Shankar B. Dalavi Vijay R. Chaudhari and Bhagavatula L V Prasad	Synthesis of Efficient and Durable Co-Pt Nanoalloys Electro-catalyst for Methanol Electro-oxidation Reaction
07-Poster-28	Neeru, Abhilasha Chouksey Seema Gautam S.S. Islam , J.S. Rawat and Pika Jha	Improving the Sensing Behavior of Carbon Nanotubes towards NO <sub>2</sub> and NH <sub>3</sub> by functionalization with SnO <sub>2</sub>
07-Poster-29	Michelle Dsouza Sakthi Swarrup J	A LOW COST SILVER NANOPARTICLES BASED HYDROGEL SENSOR FOR WOUND MONITORING
07-Poster-30	Lichchhavi Sinha and Parasharam M. Shirage	Hybrid nanostructure of $\alpha$ -MnO <sub>2</sub> and Co <sub>3</sub> O <sub>4</sub> for non enzymatic biosensing application

07-Poster-31	M. Pusty and P. M. Shirage	Flexible Polymer Based Piezoelectric Nanogenerator Using Nanomaterials
07-Poster-32	Deepali Shrivastava P.S. Goyal and S.K. Deshpande	A study of Dielectric constant and Structural Properties of Polyimide Nanocomposite Films
07-Poster-33	Shweta N. Chaure	Self Organized Cadmium Sulphide nanocrystalline schottky diode
07-Poster-34	Dilip K. Singh Ravi Kumar, Rakesh Prasad, K. G. Lee and Raj Kumar	Engineering Nitrogen-vacancy (NV) Nano-diamonds based Uniformly Bright Bio- marker and Photo-stable Source of Single Photons
07-Poster-35	Sathiyathan Felix, Andrews Nirmala Grace and Ramasamy Jayavel	An Effective Electrochemical Carbohydrates Sensor Based on CuO Nanoplatelets
07-Poster-36	Chethana S.D Kaushik, V. Siriguri and Nalini G Sundaram	Semiconductor Oxide Nanomaterials for Gas Sensing Applications
07-Poster-37	Kanika Nagpal Pawan Kumar Satbir Singh and Bipin Kumar Gupta	A Novel Approach to Synthesis a Dual Mode Luminescent Composite Pigment for Uncloneable High Security Codes to Combat Counterfeiting
07-Poster-38	Gopal Sankar, Piyali Maity, Yogesh Kumar, Hemant Kumar, Vinod K Gangwar, Sandip Chaterjee, Satyabrata Jit, Anup K Ghosh, and Bhola N. Pal	Tunable Threshold Voltage Single Quantum Dot Rectifying Diode
07-Poster-39	Khushboo Soni, Sushil Kumar, S k Riyajuddin, Damini Badhwar Surender P. Gaur, K. Ojha, Manish Singh and Kaushik Ghosh	Metal Free Photoelectrode for Hydrogen Production
07-Poster-40	Vikram Bakaraju, E. Senthil Prasad and Harsh Chaturvedi	Electronic and Optically controlled Bi-functional Transistor based on Bio-Nano Hybrid Complex
07-Poster-41	Vetrivel.S Ashwin Nambi, Vivek Nagendra Bhat, Krishnan Balasubramanian, and Ramaprabhu S	Polymer Functionalized Graphene Based Flexible Piezoresistive Strain Sensors for Wearable Device Applications

## POSTER SESSION

### 2D Materials

**Date** 15<sup>th</sup> February 2019  
**Time** 14.00-18.30 hrs

17-Poster-01	Shivani Sharma Rajan Saini and Sandeep Sharma	Ammonia sensor using WS <sub>2</sub> nanostructures
17-Poster-02	Soumya Ranjan Das Katsunori Wakabayashi, Mahito Yamamoto, Kazuhiro Tsukagoshi and Sudipta Dutta	Layer-by-Layer Oxidation Induced Electronic Properties in Transition Metal Dichalcogenides
17-Poster-03	Dipankar Jana Vishwas Jindal and Sandip Ghosh	Optical Characterization of Hexagonal Boron Nitride Encapsulated Monolayer Molybdenum Diselenide
17-Poster-04	Vishwas Jindal Dipankar Jana, Thorsten Deilmann and Sandip Ghosh	Study of exciton transitions around the direct bandgap of bulk 2H-MoS <sub>2</sub>
17-Poster-05	Priyanath Mal Bipul Das, Archana Lakhani, Ganesh Bera, G. R. Turpu, Jong-Ching Wu, C. V. Tomy and Pradip Das	Conductance Fluctuations and Quantum Oscillation in Topological Insulator PbBi <sub>4</sub> Te <sub>7</sub>
17-Poster-06	S. Latha K. Niranjana, and Harish C. Barshilia	Fabrication of molybdenum disulfide nano sheets using simple chemical exfoliation
17-Poster-07	H Kaur, R. Kumar, Ajay Kumar, Venkata Krishnan and Rik Rani Koner	Trifunctional Metal-Organic Platform for Environmental Remediation: Structural Features with Peripheral Hydroxyl Groups Facilitate Adsorption, Degradation and Reduction
17-Poster-08	T P Yadav	Two dimensional (2D) Quasicrystal: A notable catalyst for hydrogen production and hydrogen storage
17-Poster-09	Prabal Dev Bhuyan Sanjeev K. Gupta, Yogesh Sonvane and P. N. Gajjar	Structural, Vibrational and Optoelectronic Properties of Buckled Metallic FeGe Monolayer
17-Poster-10	M B Awale S. D. Lokhande, L. H. Kathwate and V. D. Mote	Synthesis, Structural, Optical and Electrical Properties of Zn <sub>1-x</sub> Co <sub>x</sub> O of Thin Films by Spray Pyrolysis Method
17-Poster-11	Preeti Kumari Sarmistha Maithy, Veerendra Dhyani and Samaresh Das	Hydrothermal synthesis of MoSe <sub>2</sub> nanoflowers for large area IR photodetectors



17-Poster-12	Tejendra Dixit Ankit Arora, Ananth Krishnan, K. Lakshmi Ganapathi, Pramoda K. Nayak, and M.S. Ramachandra Rao	Utilization of indirect transition of multilayer MoS <sub>2</sub> for random lasing
17-Poster-13	Pramoda K. Nayak Ankit Arora, Tejendra Dixit, Ananth Krishnan, K. Lakshmi Ganapathi and M.S. Ramachandra Rao	Plasmon Induced Photoluminescence Enhancement in Atomically Thin WSe <sub>2</sub>
17-Poster-14	Deepu Kumar Birender Singh, Pawan Kumar, Viswanath Balakrishnan, and Pradeep Kumar	Nonlinear Behavior in 1H, 1T and 1T' Phase of Monolayer WS <sub>2</sub> : A Temperature Dependent Raman Study
17-Poster-15	Abhay. V. Agrawal and Mukesh Kumar	Enhanced adsorption of hydrogen on p-type monolayer MoS <sub>2</sub> pyramid with edge-oriented top flakes for highly sensitive and fast hydrogen sensor at room temperature

## **POSTER SESSION**

### **Biomaterials Devices and Applications**

**Date**                    **15<sup>th</sup> February 2019**  
**Time**                    **14.00-18.30 hrs**

16-Poster-01	Chethana Rao Richa Garg and Chayan K.Nandi	Surface modification of carbon nanodot for improved Cell Internalization avoiding the protein corona
16-Poster-02	K. Cheirmadurai and P. Thanikaivelan	Silver@Catechin composite incorporated hybrid collagen scaffolds for scar-less wound healing in deep second degree burn
16-Poster-03	K S Sajena K. V. Sandeepa M Sreejith and Joshy Joseph	FLUORESCENT SILVER NANOCCLUSERS TEMPLATED BY DNA-THREE WAY JUNCTION NANOSTRUCTURES: SYNTHESIS, CHARACTERIZATION AND APPLICATIONS
16-Poster-04	Subhadip Basu Aritri Ghosh, Ananya Barui and Bikramjit Basu	(Fe/Sr) co-doped biphasic calcium phosphate with tailored osteoblast cell functionality
16-Poster-05	Shilpa Mirikar and Govind K. Bichile	Thermodynamic and Interactions studies of amino acid with aqueous inorganic salts at different concentrations and at constant temperature using Ultrasonic Technique
16-Poster-06	N Aparna, S. Pallavi, T.S. Santra, N. J. Vasa, K. R. Krishnamurthy and B. Viswanathan	Gold nanoparticle-assisted plasmonic cellular opto-poration for drug delivery
16-Poster-07	Sagar Nilawar and Kaushik Chatterjee	Poly(ester amide)s Based On Olive Oil for Bone Tissue Engineering

16-Poster-08	Annrose Sunny, Mukesh, Kausthabh Kumar Maiti and M Vasundhara	Development of Co-Zn ferrite nanoparticles using a facile synthesis for selfregulating hyperthermia treatment of tumors
16-Poster-9	Eva C Das P R Anil Kumar and Manoj Komath	Self-setting Bioactive Calcium Composition for Periodontal Bony Defects – In vitro Evaluation of Regeneration Ability
16-Poster-10	R. K Adarsh Eva C. Das, and Manoj Komath	Graded Bioactive Membranes From Modified Chitosan For Periodontal Regeneration
16-Poster-11	Amrita Natarajan V P Sivadas and Prabha D Nair	Biomaterial Based 3d Printed Biphasic And Integrated Scaffolds For Augmenting Simultaneous Regeneration Of Osteochondral Tissues
16-Poster-12	Hilal Ahmad Rather Rohit Patel, Umesh. C. S. Yadav and Rajesh Vasita	Dual drug loaded ECM mimicking fibers promote osteogenic differentiation of MC3T3-E1 and enhances angiogenesis
16-Poster-13	Ankit Kumar Amit Jash, Amarish Dubey, Alok Bajpai, Deepu Philip, Kalpana Bhargava, Sushil K Singh, Mainak Das, and S. S. Banerjee	Water mediated polarization and electron transport channels in high resistance natural fibers: a candidate for electric field sensors