

Day 1: 20.12.2021	Session 1 (2 to 4 PM)				
	Invited 1	Invited 2	Invited 3	Oral 1	Oral 2
Theme Symposia	2:00 to 2:30 PM	2:30 to 3:00 PM	3:00 to 3:30 PM	3:30 to 3:45 PM	3:45 to 4:00 PM
7 Diamond and related materials	Alon Hoffman Nitrogen terminated diamond surfaces – chemical states, thermal stability and structural properties	Soumen Mandal Nanodiamond modified membranes for virus Filtration	Phani Kumar Quantum Sensing Using Nitrogen-vacancy Defects in Diamond	T07A01: Venkataramana Bonu	T07A02: Salila Kumar Sethy
10 Materials for Energy and Environment	Urmimala Maitra Quest for High valent Redox in Intercalation cathodes	Vinod C. Prabhakaran Noble metal supported silica catalysts: Braving the challenges for sustainability	Ashish Mishra Two dimensional metal dichalcogenides nanostructures for optoelectronics applications	T10A01: Trilochan Mishra	T10A04: Annamalai K
11 Multiferroics and Ferroelectrics	K.V. Lalitha Depolarization mechanisms in quenched lead-free Na _{1/2} Bi _{1/2} TiO ₃ -based piezoceramics	Tadej Rojac Domain-wall Contribution to Piezoelectric Response of Lead-based Relaxor Ferroelectrics	Yukio Sato Nanostructures in relaxor ferroelectrics studied via electron microscopy	T11A09: Gobinda Das Adhikary	T11A12: Premakumar Yanda
12 Nanomaterials Devices and Applications	Chandramouli Subramaniam Green-heat generation using nanostructured carbons	Dipankar Mandal Self-Powered Health Care Monitoring with Nanomaterials Based Devices	Zhang Jun Quantum Emitters in Hexagonal Boron Nitride	T12A06: Sumaiya Parveen	T12A09: Athira M
15 Organic Electronics	K.R. Justin Thomas Molecular Engineering Strategies for Functionality Enhancement in Organic Materials	Parameswar K. Iyer Utilizing multifunctional materials to influence perovskite and polymer electronic devices	Narayan K. S Control of Electrical Transport Mechanisms Prevailing in Conducting Polymers by confinement	T15A06: Chandra Kant	T15A07: Neha Chauhan
16 Oxide Electronics	Nini Pryds Stimulating Oxide Heterointerfaces	Wilfrid Prellier Stimulating Oxide Heterointerfaces	Matthias Opel Spin-Hall magnetoresistance and magnon transport in antiferromagnetic oxides		
17 Phase change materials and devices	Sevi Murugavel Non-ideal Behavior of Glass and Crystal	Matthias Wuttig Crystallization and Vitrification Kinetics by Design: The Role of Chemical Bonding	Riccardo Mazzarello Anderson localization in phase-change materials	T17A03 : M.S. Arjunan	T17A02 : Shivendra Kumar Pandey

18 Photonic Materials	Yoichi Kobayashi Fast Photochromic Reactions of Zinc-Based Colloidal Nanocrystals	Surajit Dhara Liquid crystal colloids and microdroplets: Topology and photonics	S. K. Khamari Spin Photonic devices	T18A05: Amrithakrishnan B.	T18A12: Nurjahan Khatun
19 Photovoltaics and Solar Energy	Anil K. G Passivation dielectrics for advanced silicon solar cells	Praveen C Ramamurthy	Shaibal K. Sarkar	T19A01: Anurag Roy	T19A02: Ganapathi Rao Kandregula
20 Semiconductors Silicon, Germanium III-V and II-V	Bharat Kale Semiconductor quantum dots growth in Si-and Ge-glass	Ramasamy Indigenous Development of Silicon Ingot by DS Process and Wafer Slicing	Ratheesh Wide Bandgap Semiconductors: Crystal Growth and Application	T20A01: Venkata Karthik Yadav	T20A02: Gourav Kumar
21 Thermoelectrics	Takao Mori Thermoelectric enhancement principles and materials & devices	Zhi-Gang Chen Thermoelectric Materials and Devices for materials to applications	Partha Pratim Jana Crystal Structure and Transport Properties of Cu ₄ TiSe ₄	T21A01: Harish S	T21A07: Anshu Panbude

Day 1: 20.12.2021	Session 2 (4:45 to 6:45 PM)				
	Invited 4	Invited 5	Invited 6	Oral 3	Oral 4
	4:45 to 5:15 PM	5:15 to 5:45 PM	5:45 to 6:15 PM	6:15 to 6:30 PM	6:30 to 6:45 PM
3 Biomaterials Devices and Applications	T. Govindaraju Silk-Derived Biomaterials	K. Uma Maheswari An Organic-Inorganic Nanotheranostic Hybrid for Cancer Therapy	Aravind Kumar Rengan Organo-Inorganic Smart Nanosystems for Theranostics	T03A01: Shaifali Dhingra	T03A06: Arpita Roy
6 Computational Materials Science	Vijay Kumar Understanding the enhanced stability of 2D halide perovskites and effects of rare-earth doping for solar energy and optoelectronic applications	Rajeev Ahuja Advanced Modelling of Materials for Clean Energy Applications: hydrogen storage materials and next-generation batteries	Rinkle Juneja Phonons in twisted crystals	T06A03 : Abhishek Kuamr Adak	

12 Nanomaterials Devices and Applications	M M Shaijumon Voltage tunable phases on few-layered MoS2	Madhu Thalakulam Voltage tunable phases on few-layered MoS2	T. N. Narayanan Synergistic Effects of Atomic Interfaces in Enhanced Device Performance	T12A10: Keerthana S	T12A14: Anand Ratna Arun
14 Nitride Electronics	Dipankar Saha High-Speed Processes in Semiconductors	Govind Gupta Fabrication of 2D-MoS2/GaN Hybrid Device for Broadband Photodetector	Mahesh Kumar AlGaIn/GaN HEMT based Heavy Metal Ion Sensor for Smart Water Quality Monitoring	T14A01: Sivasankaran BR	
15 Organic Electronics	Rene Janssen Material and Device Design for Highly Efficient Organic Solar Cells	Ananth Dodabalapur Materials and Device Considerations for Very Short Channel organic and polymer TFTs		T15A08: Manju Sheokand	T15A01: Nitupon Dihingia
16 Oxide Electronics	Daisuke Nakamura Controlled Fabrication of Oxide Semiconductor Nano/Micro Crystals by Laser-Based Technique	Ajeet Kumar Low-temperature Fabrication of Ferroelectric Thin/Thick films for Microwave and Energy Storage Applications	Shaibal Mukherjee CMOS-compatible Memristive Crossbar Array for In-Memory Computation		
17 Phase change materials and devices	Harish Bhaskaran	Enrico Piccinini New evidence makes Ovonic Threshold Switching a hot trending topic once again	Ritesh Agarwal Utilizing vacancies and disorder for designing highly energy efficient phase change materials	T17A04 : Suresh D	T17A05 : Chandasree Das
18 Photonic Materials	Juliane Simmchen Semiconducting microparticles for photodriven microscale motility	Achanta Venugopal	Anshu Pandey Semiconductor Nanocrystals for Photonics	Evgenii Lutsenko	
19 Photovoltaics and Solar Energy	Easwaramoorthi Ramasamy Scalable Fabrication of Efficient Perovskite Solar Cells	Pradeep Nair Phase segregation and ion migration induced efficiency degradation in perovskite solar cells	Nandu Chaure Solar Photovoltaic Technology: Research and Development towards low-cost Solar Cell Devices	T19A04: Amrutha V	T19A09: Swapnil Pakhale
21 Thermoelectrics	Anthony V. Powell Mineral-Inspired Sulfide Thermoelectrics	Per Eklund Novel nitride thin-film materials for thermoelectrics studied by experiments and theory	Ernst Bauer How structure drives the thermoelectric performance of full-Heusler materials		

Day 2: 21.12.2021	Session 1 (2 to 4 PM)				
	Invited 1	Invited 2	Invited 3	Oral 1	Oral 2
Theme Symposia	2:00 to 2:30 PM	2:30 to 3:00 PM	3:00 to 3:30 PM	3:30 to 3:45 PM	3:45 to 4:00 PM
4 Characterization Techniques	N Ravishankar HAADF-STEM Imaging – Fundamentals and Applications	Jyotishman Dasgupta Transient Raman Spectroscopy for Probing Charge Transfer States	Werner Paulus On the impact of synchrotron diffraction to explore structural, domain and charge ordering in correlated oxides	Basudev Roy Optical Tweezers	
12 Nanomaterials Devices and Applications	Vijay Understanding the enhanced stability of 2D halide perovskites and effects of rare-earth doping for solar energy and optoelectronic applications	Satyabrata Mohapatra Multifunctional hybrid nanostructures and plasmonic nanocomposites for photocatalytic, catalytic and gas sensing applications	Shankar Dutta Metal and metal-oxide nanostructures for MEMS bolometer devices	T12A04: Mohd Afshan	T12A13: Litty Thomas Manamel
13 Nanomaterials Synthesis and Solutions Route	Binoy Kumar Saikia Scalable production of carbon quantum dots from abundant coal feedstock towards high-value applications	Venkata Krishnan Strategic Design and Development of Nanostructured Heterogeneous Catalysts for Clean Energy and Environmental Applications	Ajayan Vinu Advanced Nanoporous Functional Materials for Energy and Environmental Applications	T13A36: Mohanraj Jagannathan	T13A21: Ramya Prabhu B
14 Nitride Electronics	Tarun Sharma Radiation hardness of GaN based photodetectors	Mayank Srivastava How Experimental and Computational Probes Enabled Development of (India's First) GaN Based Power Transistor and Diode Technologies	Praveen Kumar Modified III-nitrides nanostructures for green hydrogen generation	Anant Naik GaN PHEMT and MMIC Technology - GAETEC Perspective	
15 Organic Electronics	Chihaya Adachi Recent progress on blue hyperfluorescence OLEDs	Shyam Pandey Playing with Orientation Control in Conjugated Polymers by Environmentally Benign Techniques for Organic Electronic Devices	Dipak Goswami Flexible Organic Field-Effect Transistors Based Healthcare Sensors for Internet of Medical Things (IoMT)	T15A02: Abhinav Lal	T15A03: Madhu Rawat
16 Oxide Electronics	Digbijoy N Nath Gallium oxide based deep-UV photodetectors	N. Pavan Unconventional and giant electromechanical responses from defective oxides	Ankush Bag LPCVD grown Ga ₂ O ₃ for Emerging Power and Opto- Electronics	T16A08: Anju Saroha	

17 Phase change materials and devices	K. Ramesh Phase change properties of Se substituted GeTe	Syed Ghazi Sarwat	Sevi Murugavel Non-ideal Behavior of Glass and Crystal	T17A06 : Sreevidya Varma	
18 Photonic Materials	K. V. Adarsh Quantum Materials Driven by Light	Samaresh Das Low-dimensional TMC Materials based THz Detectors and Modulators	Jino George Polaritronics: Controlling Charge Transport by Light-Matter Strong Coupling	T18A13: Riyanka Karmakar	T18A16: Megha Shrivastava
19 Photovoltaics and Solar Energy	Aldrin Anthony Performance Improvement and Carrier Transport in Different Carrier Selective Si solar cells	Sudip Chakrobarthy Computational Roadmap of Hybrid Perovskites Materials: Insight from Piezochromism and Rashba Effect	Angshuman Nag Pb-Free Metal Halide Perovskites	T19A11: Bharati Sakunde	T19A12: Anjusree S
20 Semiconductors Silicon, Germanium III-V and II-V	Sumathi High purity semiconductor (Si, Ge) crystals: Why are they needed?	Animesh Jha Photonic Glass based waveguides using ultrafast pulsed laser ion implantation			
21 Thermoelectrics	Li-Dong Zhao Wide bandgap thermoelectrics	Qingyu Yan Achieving Enhanced Thermoelectric Performance in Multi-phase Materials	Emmanuel Guilmeau Order/disorder phenomena in sphalerite-derivatives ternary and quaternary sulfides	T21A05: Vaishali Chauhan	T21A02: Jayachandran B

Day 2: 21.12.2021	Session 2 (4:45 to 6:45 PM)				
	Invited 4	Invited 5	Invited 6	Oral 3	Oral 4
Theme Symposia	4:45 to 5:15 PM	5:15 to 5:45 PM	5:45 to 6:15 PM	6:15 to 6:30 PM	6:30 to 6:45 PM
1 2D materials	Athanassios K Boudalis Spin triangles are learning new tricks	Arindam Ghosh In search for magnetism at the boundary of graphene	Edward Prabu Amaladass Anomalous magneto-transport behaviors in Superconductor/Topological Insulator heterostructure	T01A02: Mohd Azhardin Ganayee	
3 Biomaterials Devices and Applications	Janani Radhakrishnan Injectable Nano-engineered Hydrogels for Functional Tissue Regeneration	Manitha Nair NANOTEX GRAFT for Bone Tissue Engineering: A Story from Bench to Bedside	Kaushik Chatterjee 3D Printing of Polymeric Tissue Scaffolds for Bone Tissue Engineering	T03A08: Unnati Modi	T03A09: Sabyashi Mukhopadhyay

4 Characterization Techniques	R P Singh Single Crystal Growth Techniques for Quantum Materials	Anil jain Neutron scattering: the key characterization tool to probe the static and dynamic correlations in bulk materials	Maniraj Mahalingam Basic applications of photoemission spectroscopy for the elemental identification and electronic band structure of solids		
5 Composites, Light Metals and Alloys	Joydeep Dutta Solar photocatalysis with metal oxides: from fundamental materials engineering to applications	Prof. P. Maiti Biomaterials for Healthcare: Drug Delivery Approach	R. Vasant Kumar Inorganic Polymer Composites in Solid State Lithium Batteries	T05A01: Sanjib Bhattacharya	T05A08: Suganth V
6 Computational Materials Science	Swastibrata Bhattacharyya Prediction of microstructures of alloys from first-principles phase field method	Biplab Sanyal First principles study of two-dimensional magnets	Puru Jena Superatomic Clusters and their unique role in promoting unusual reactions and as building blocks of novel materials	T06A05 : Samadhan Kapse	T06A10 : Anu Bala
7 Diamond and related materials	Praveen Bhallamudi Quantum defects in diamond and their applications	Mohan Kumar Dense N delta doping by layer overgrowth onto a diamond (100) surface: Nitrogen and hydrogen distribution and retention	Boominatha sellarajan Microstructural phase transition of AISI4140 as a function of filament-substrate distances during diamond growth by hot-filament chemical vapour deposition		
9 Magnetism Spintronics And Superconductivity	Ronny Thomale Exact dimer ground state on the maple leaf lattice	Subhankar Bedanta Spin pumping with heavy metals, topological insulators and antiferromagnets	K. Sethupathi Understanding the Magnetic behavior in the perovskite oxides of the type A_2FeCoO_6 (where A=La, Ho, Dy, Pr, Gd)	Axel Hoffmann Hybrid Magnon Modes	
10 Materials for Energy and Environment	Suman Jain Visible-Light Photocatalysis as an Enabling approach for CO2 activation and its utilization into chemicals	Satishchandra Ogale Designing Advanced Functional Materials for Energy & Environmental Applications	T10A06: Durga Sankar Vavilapalli	T10A18: Vinoth S	Prashant V. Kamat How to Avoid Common Pitfalls in Photocatalysis and Electrocatalysis
11 Multiferroics and Ferroelectrics	Malla Reddy C Crystal engineering of adaptive smart materials: from mechanical bending to self-healing	Debraj Choudhury Room temperature ferroelectricity in spark-plasma sintered GdCrO3	P Murugavel Magnetoelectric effect in flexible thin film and resonant tuning effect in laminated composite structure	T11A14: Soumen Pradhan	T11A18: Akhil Raman
12 Nanomaterials Devices and Applications	S. S. Islam 2D Materials and its Applications	Dinesh Rangappa Supercritical Fluid Assisted Synthesis of 2D Heterostructured Materials for Energy Generation and Storage Applications	Siddappa A. Patil Greener and sustainable nanomaterials for organic transformations	T12A15: Nur Amin Hoque	

18 Photonic Materials	Animesh Jha Photonic Glass based waveguides using ultrafast pulsed laser ion implantation	Anuj Dhawan Design and development of plasmonic sensor chips for chemical and biological sensing applications	Soma Venugopal Rao Plasmonic Nanomaterials Achieved using Ultrafast Laser Ablation for Sensing Applications	Pankaj Misra Studies on ultraviolet photodetectors based on Mg _x Zn _{1-x} O thin films
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Day 3: 22.12.2021	Session 1 (2 to 4 PM)				
	Invited 1	Invited 2	Invited 3	Oral 1	Oral 2
Theme Symposia	2:00 to 2:30 PM	2:30 to 3:00 PM	3:00 to 3:30 PM	3:30 to 3:45 PM	3:45 to 4:00 PM
1 2D materials	Shivangi Shree Engineering Quantum States in Atomically Thin Materials	Sajal Dhara Polarization dependent light-matter interactions in 2D materials	Awadesh Mani Evolution transport properties of Bi ₂ Se _{3-x} Te _x systems hosting 2-D topological surface states under high magnetic field and high pressure	T01A01: Pooja Bhatt	T01A04: Balwant Singh Chauhan
2 Batteries, Fuel Cells and Supercapacitors	Jagjit Nanda Solid-State Batteries – A Materials Perspective	Julian Schwenzel Processing of all solid state batteries	Aninda J. Bhattacharyya Strategies for the Development of Efficient Rechargeable Metal-S Batteries	T02A19: Moumita Rana	T02A14: Sravan Kumar Bachu
4 Characterization Techniques	Dinakar Kanjilal Characterization and controlled modification of materials using energetic ions	B N Dev Small-angle X-ray scattering (SAXS) and grazing incidence small-angle X-ray scattering (GISAXS): Techniques and applications	Chirstian Sch Schroer Imaging Physical and Chemical Properties of Complex Materials by In-situ X-ray Microscopy		
5 Composites, Light Metals and Alloys	Kaustubh N. Kulkarni Investigations into Light Weight Titanium Alloys	Indrani Sen Processing-Microstructure-Property correlation in thermo-mechanically treated Ti-6Al-4V alloys	Vivek Srivastava	T05A02: Prasanta Jana	T05A07: Aanchal Jaisingh
7 Diamond and related materials	Kasturi Saha Colour defects in diamond for widefield magnetometry	Awadesh Mallik Linear antenna microwave plasma enhanced CVD growth of diamond films on GaN at low deposition temperatures	Kumaragurubaran Somu Diamond thinfilm processing, defect control and surface tailoring for electronic device development	T07A03: Thiyagarajan R	T07A04: Zainab Chowdry

8 Graphene	Vincent Bouchiat CVD Graphene for healthcare: combining diagnostic and therapeutic action	Ashish Bhatnagar Multiple roles of graphene and its derivative in hydrogen storage application	Xinliang Feng Graphene Nanostructures 3.0: Quantum Phenomena & Properties	T08A01: Gaurang Kuksal	T08A02: Sangha Mitra
9 Magnetism Spintronics And Superconductivity	Anjan Barman Emergent Novel Phenomena in Magnonics and Spintronics	Christos Panagopoulos Coupling Topological Solitons in Hybrid Quantum Architectures	Hidenori Takagi Towards Kitaev quantum spin liquid	Ashim Pramanik Low Temperature Magnetic Behavior in Frustrated Antiferromagnet Ba ₃ NiIr ₂ O ₉	
10 Materials for Energy and Environment	Lourdudoss Sebastian Towards High Efficiency Multijunction Solar Cells on Silicon	Rakhi R B Reduced Graphene Oxide based nanocomposite electrode materials for supercapacitors		T10A24: Rajesh P	T10A26: Asuma Janeena
12 Nanomaterials Devices and Applications	BLV Prasad	Channabasaveshwar Yelamaggad CD Responsive Liquid Crystal-Gold Nanoparticle: Towards Soft Metamaterials	Anuya Nisal Molecular mechanism of adhesion of natural polymer nano coatings to chemically modified polydimethylsiloxane	T12A17: Rasha Rahman PK	T12A18: Rupak Banerjee
13 Nanomaterials Synthesis and Solutions Route	Yogendra Kumar Mishra Tetrapods based Smart Materials for Advanced Technologies	Aruna Ivaturi Printable Supercapacitors from Biomass Feedstock	Shubra Singh Design and tailoring of nanostructures for multifunctional applications	T13A24: Rohith Vinod K	T13A23: Tina Joshi
15 Organic Electronics	K. N. Narayan Unni White Organic Light Emitting Diodes: Pursuit of Cost-effectiveness and Simple Device Designs		Karl Leo High-performance organic electronics	T15A04: Ramya Subramaniam	T15A05: Manoj Talluri
16 Oxide Electronics	K. C. James Raju Electroacoustic Resonance with Ferroelectric Thin Films as a Means to Miniaturize Microwave Resonators	S. Angappane Multilevel resistive switching in titanium oxide films by modulation of oxygen vacancy-rich conductive filaments	Tejendra Dixit Oxide semiconductors: Promising materials for next generation optoelectronic devices		

Day 3: 22.12.2021	Session 2 (4:45 to 6:45 PM)				
	Invited 4	Invited 5	Invited 6	Oral 3	Oral 4
Theme Symposia	4:45 to 5:15 PM	5:15 to 5:45 PM	5:45 to 6:15 PM	6:15 to 6:30 PM	6:30 to 6:45 PM
1 2D materials	B. Sundaravel Ion irradiation effects on graphene and graphene oxide	Manish Jain Flatbands in twisted bilayer transition metal dichalcogenides	Deep Jariwala Strong Light-Matter Interactions in Atomically-Thin Excitonic Materials	T01A06: shivangi srivastava	
2 Batteries, Fuel Cells and Supercapacitors	R Murugan Lithium Metal Batteries with Garnet Structured Solid Electrolytes	Philipp Adelhelm Inorganic Electrodes for Sodium-ion Batteries	Sayan Bhattacharyya Nanostructures for Driving Oxygen Electrocatalysis in Zinc-air Battery	Venkataraman Thangadurai Li and Na-based Solid Electrolytes for All-Solid-State Batteries	
3 Biomaterials Devices and Applications	Pranjal Chandra Nanobioengineering Approaches in Point-Of-Care and Personalized Diagnostics Devices	Geeta Manivasagam Mechanical, corrosion, and biocompatibility studies of suspension plasma sprayed HaP on titanium alloy	Debjani Paul Microfluidic devices for healthcare applications	T03A12: Dhimmar Bindiya	T03A16: Chitra S
5 Composites, Light Metals and Alloys	Siddhartha Roy Metal/ceramic composites with interpenetrating architectures for optimum thermal and mechanical properties	Sudhanshu Shekhar Singh Role of Second Phase Particles on the Deformation and Corrosion Behavior of Magnesium Alloys	Amit Bhattacharjee High temperature Titanium alloys for aero-engine applications	T05A10: Chetan Singh	T05A03: Subha Sanket Panda
6 Computational Materials Science	Shobhana Narasimhan Identification and Manipulation of Defects in Few-Layer Phosphorene	Sai Gautam Gopalakrishnan Screening chemical spaces for positive electrodes in beyond-Li-ion batteries using computational techniques	Lilia M. Woods Electronic Structure Effects in Optical and Spin Response Properties: First Principles Simulations of Novel Materials	T06A09: Iqra Ahangar	
7 Diamond and related materials	Vadali V. S. S. Srikanth Unique Surface Modifications on Polycrystalline Diamond Thin Films	K. J. Sankaran Diamond Hybrids for Optoelectronic Applications	Rajesh V. Nair Optical landscape of nitrogen-vacancy centers in nanodiamonds	T07A06: Dhurba Das	
8 Graphene	Bharti Singh Two Dimensional Materials: Enhancing Mechanical Energy Harvesting	Selvakumar Graphene and its derivatives for photothermal applications		T08A03: Shradha Suman	T08A04: Sreelakshmi Krishnakumar

9 Magnetism Spintronics And Superconductivity	Mandar Deshmukh Modification of superconductivity of a few unit cell thick high T _c superconductor Bi ₂ Sr ₂ CaCu ₂ O ₈ +□□ and studies of its nanoscale devices	Muralidhar Miryala Superconducting Technology and Its Role in Disrupting Climate Change	Ravi Prakash Singh Single Crystal Growth Techniques for Quantum Materials	T09A05 : NILADRI KANDER	T09A10 : Girija E.K.
12 Nanomaterials Devices and Applications	Kaushik Ghosh Fabrication of Flexible Solid-State Supercapacitor Device for Renewable Energy Conversion & Storage	Akhilesh Pandey GaN based nanostructures and multilayer heterostructures for electronic and optoelectronic devices	Pika Jha Development of n-Nasika: A CNT based fully automated, hand-held prototype for sensing of explosives and environmental pollutants	T12A20: Sonalika Agarwal	T12A02: Santanu Ghosh
13 Nanomaterials Synthesis and Solutions Route	Tokeer Ahmed Fabrication of Metal Oxide based Nanocatalysts for Water Splitting and Heterogeneous Organic Transformations	Sameer Sapra Fabrication of Metal Oxide based Nanocatalysts for Water Splitting and Heterogeneous Organic Transformations	Arunava Gupta Solution-Based Deposition of Complex Oxide Thin Films and Nanostructures	T13A11: Anamul Haque	T13A13: Vinitha Packirisamy
16 Oxide Electronics	Dhanvir Singh Rana Terahertz probes for quasiparticle electrodynamics in complex oxides	Rajendra Singh Dhaka Structural and magnetic properties of complex oxides	Megha Vagadia Giant anisotropic magnetoresistance with dual-four-fold symmetry in CaMnO ₃ /CaIrO ₃ heterostructures	K. L. Ganapathi 2D layered Semiconductors and Oxide Heterostructures: Physics and Applications	
21 Thermoelectrics	Shovit Bhattacharya Development of Thermoelectric Generators: Issues and Approaches	Arindam Ghosh In search for magnetism at the boundary of graphene	Bivas Saha Lateral Metal-Semiconductor Heterostructures with Enhanced Thermoelectric Properties		

Day 4: 23.12.2021	Session 1 (2 to 4 PM)				
	Invited 1	Invited 2	Invited 3	Oral 1	Oral 2
Theme Symposia	2:00 to 2:30 PM	2:30 to 3:00 PM	3:00 to 3:30 PM	3:30 to 3:45 PM	3:45 to 4:00 PM
1 2D materials	Ashish Arora Excited and dark states of charged excitons in layered 2D semiconductors	Alexey Chernikov Mobile optical excitations in 2D materials	Deep Jariwala 2 Two-Dimensional Materials for Low-Power Logic and Memory Devices	T01A05: Nav Deepak	T01A07: Ravindra Kumar
2 Batteries, Fuel Cells and Supercapacitors	Dr Urmimala Maitra Quest for High valent Redox in Intercalation cathodes	Dr Aiswarya Bhaskar Cobalt-free positive electrodes for Li-ion batteries: Recent advances	Dr Aditi Halder Engineering MnO ₂ Nanostructures for Zinc-Air Battery Application	T02A18: Shuvajit Ghosh	T02A22: Ramchandra Kalubame

5 Composites, Light Metals and Alloys	Alok Singh Precipitation of stable quasicrystal phase in a Mg-Zn-Al alloy	K S Suresh Role of martensite in Ti-6Al-4V	Shyamprasad Karagadde Gas and shrinkage porosity in aluminium alloys: Mechanisms, Prediction and Control	T05A05: Mahesh Katakam	T05A11: Vaibhav Jain
8 Graphene	Jayakumar Balakrishnan Thermal conductivity measurements in graphene decorated with Au nanoparticles	Kalon Gopinadhan Angstrom scale fluidics based on graphene	Nirmalaya Ballav Chemical Interaction Overriding Addition of Functionalized Graphene and 2D MOF for Energy Applications	T08A05: Abhishek Pandey	T08A06: Devendar Lavudya
10 Materials for Energy and Environment	Krishanu Biswas Multi-principal Element Multi-component Alloys for Energy and Environment	P Sudhagar Renewable Photoelectrochemical Solar-to-Hydrogen Conversion	M Ali Haider Metastable Active Clusters and Single Atoms: Two Unique Features in Heterogenous Catalysis going Beyond Fundamentals.	T10A28: George Sebastian	T10A31: Muthuraja V
12 Nanomaterials Devices and Applications	HSS Ramakrishna Matte Solution Processing of Low-dimensional Materials and Applications	Ambesh Dixit 2D Transition Metal Janus Layers: Potential of Ultrathin Devices		T12A21: Riyajuddin SK	
11 Multiferroics and Ferroelectrics	Saurav Giri Multiferroic and ferroelectric order in AB ₂ X ₄ -type spinel compounds	Sujit Das Polar topology: A new era of ferroelectrics	Hitesh Borker Pyroelectricity in lead-free optically active electroceramics	T11A20: Deepak Prajapat	T11A21: Keerthana .
13 Nanomaterials Synthesis and Solutions Route	Stephanie Panier New Challenges in the Additive Manufacturing of Battery Materials by Fused Deposition Modeling	Pulak Mohan Pandey Rapid manufacturing of multi-material complex structures and composites	K Byrappa Metal Oxides Based Nanocomposites for Sustainable Food Packaging Materials	T13A01: Gauri Chavan	T13A07: Vedhanayagam Dr M
14 Nitride Electronics	Sudhiranjan Tripathy Large wafer area GaN epitaxy for power electronics	Rajendra Singh Investigation of AlGaN based MSM and heterojunction solar blind Photodetectors	Anirban Bhattacharyya Alloy Fluctuations in AlGaN alloys: Causes and Effects	T14A02: Nipun Sharma	T14A03: Vikash Pandey
21 Thermoelectrics	Abhishek K. Singh ML Driven Approach to Overcome Challenges Associated with Thermoelectrics	Chandan Bera Theoretical prediction of thermoelectric materials	D. SivaPrahasam Design, Fabrication and Performance of Na _x Pb _{1-x} Te - Mg ₂ Si _{1-x} Sn _x Medium Temperature Thermoelectric Device	T21A04: Divya Prakash Dubey	T21A03: Mithun Kumar Majee

Day 4: 23.12.2021	Session 2 (4:45 to 6:45 PM)				
	Invited 4	Invited 5	Invited 6	Oral 3	Oral 4
Theme Symposia	4:45 to 5:15 PM	5:15 to 5:45 PM	5:45 to 6:15 PM	6:15 to 6:30 PM	6:30 to 6:45 PM
2 Batteries, Fuel Cells and Supercapacitors	Prof. C Retna Raj Electrochemical Energy Storage: Looking Beyond the King of Batteries	Dr Sai Goutam Gopalakrishnan Screening chemical spaces for positive electrodes in beyond-Li-ion batteries using		T02A30: Chinmaya Mirle	T02A09: Apurva Patrike
3 Biomaterials Devices and Applications	PV Mohanan Biological Evaluation of materials/medical devices: Regulatory concept	Bindu Paul The 'Sex' of Nano Zinc Oxide Biodistribution and its Consequences on the Germline	Alok Dhawan Toxicity of nanomaterials: A journey from research to policy	T03A26: Jayanta Kumar Bal	
6 Computational Materials Science	Aftab Alam Lattice Dynamics and Electron-Phonon Coupling in LeadFree Cs ₂ AgIn _{1-x} BixCl ₆	Tanusri Saha Dasgupta Machine Learning Approach of Design of New Materials with Targeted Properties	Saswata Bhattacharya Exploring Optical Properties in Perovskites-Based Solar Cells: Theoretical Insights	Sanghamitra Neogi Forward and Inverse Machine Learning Models to Assist Designing Atomic Environments of Semiconductor Heterostructures	
9 Magnetism Spintronics And Superconductivity	Surjeet Singh Indian Institute of Science Education and Research, Pune	Kanchana Magnetism and magnetic materials in conjunction with topology	Goutam Sheet Superconductivity with rewritable magnetic memory at LaVO ₃ / SrTiO ₃ interfaces	T09A17 : Sreya Suresh	T09A19 : Bibekananda Paikaray
10 Materials for Energy and Environment	S Basu Non-noble electrocatalysts for electro and photo-electro conversion of biomass-derived compounds	S Balakumar Bi based Nanostructures: Strategies to augment the functionality for the potential application in Energy harvesting and Environmental avenues	T10A36: Vanisree G S	T10A38: Debabrata Bagchi	Arumugam Manthiram Sustainable Battery Technologies for Renewable Energy Storage and Vehicle
11 Multiferroics and Ferroelectrics	Daniel Khomskii Electric activity of different magnetic textures	Pavan Nukala Operando observation of reversible oxygen migration and phase transitions in ferroelectric Hf _{0.5} Zr _{0.5} O ₂ thin films	Saswata Bhattacharya Exploring phase stability and domain dynamics in barium calcium titanate - barium zirconate titanate ferroelectric solid solutions using phase-field method	T11A24: Akash Surampalli	T11A25: Shibnath Samanta

12 Nanomaterials Devices and Applications	S. Annapoorni	Ramesh Chandra Hybrid nanostructured thin films of structural materials for smart Applications: Gas sensos & Supercapacitors			
16 Oxide Electronics	V. Raghavendra Reddy Low temperature and high magnetic field MÖSSBAUER SPECTROSCOPY study of functional oxide materials	Ram j Choudhary Engineering the Electronic and Magnetic Ground State via Strain in Thin Films of Transition Metal Oxides	A. Rajanikanth Tuning of electron transport in nanogranular and nanocluster films		
19 Photovoltaics and Solar Energy	Niramala Grace Metal nitride nanostructures as efficient Pt-free counter electrodes for dye sensitized solar cells (DSSCs)	Parameswar K Iyer Utilizing multifunctional materials to influence perovskite and polymer electronic devices		T19A13: Suchismita Rout	
21 Thermoelectrics	Ajay Soni Crystalline Anharmonicity and Thermoelectricity in Ternary Chalcogenides	Kanishka Biswas Enhanced Atomic Ordering and Nanostructuring Boost the Thermoelectric Performance to an Ultra-high Value			