

**DAY 2**  
**21/12/2024**  
**(SATURDAY)**

09:00 - 09:30

**Bhaskara Hall: KEYNOTE SESSION - 6**

*Dr. Saikat Talapatra, Southern Illinois University, Carbondale, Illinois*

**TOPIC: Emerging Materials for Energy, Electronics, and Environmental Applications.**

Session chair: Prof. Parameswaran, NIT Calicut

9:30 - 10:00

**Bhaskara Hall: KEYNOTE SESSION - 7**

*Prof. N V Ravikumar, IIT Madras*

**TOPIC: Molecular Precursors for the development of Advanced Ceramics towards Energy and Security of India- from lab-scale research to incubation of start-ups**

Session chair: Prof. Parameswaran, NIT Calicut

10:00 - 10:30

**Bhaskara Hall: KEYNOTE SESSION - 8**

*Prof. Douglas Galvao, Campinas State University, Brazil*

**TOPIC: Multi-scale Modeling of Nanomaterials**

Session chair: Prof. Parameswaran, NIT Calicut

10:30 - 10:45

**TEA BREAK**

10:45 - 11:15

**Bhaskara Hall: KEYNOTE SESSION - 9**

*Prof. Ranjit Bauri, IIT Madras*

**TOPIC: Oxides nanostructures and engineered anodes for rechargeable Zn-ion/air batteries**

Session chair: Dr. Devinder Yadav, IIT Patna

11:15 - 11:35

**Bhaskara Hall: INVITED LECTURE SESSION - IL 9**

*Dr. Santhana Eswara, Luxembourg Institute of Science and Technology*

**TOPIC: Operando Microscopy: Correlation of Structural, Chemical and Electrochemical Evolution in Lithium-ion Batteries using Secondary Ion Mass Spectrometry Imaging**

Session chair: Dr. Devinder Yadav, IIT Patna

11:35 - 11:55

**Bhaskara Hall: INVITED LECTURE SESSION - IL 10**

*Dr. Tetsuo Oikawa, JEOL*

**TOPIC: Nano-Materials characterization with Latest Ultra High-Resolution and Analytical Electron Microscopy**

Session chair: Dr. Devinder Yadav, IIT Patna

12:00 - 13:00

**PARALLEL SESSION 2**

**INVITED LECTURE SERIES**

TIME	SESSION CODE	BHASKARA HALL		SESSION CODE	CHANAKYA HALL	
		Session Chair: Dr. Ajeet Kumar Srivastava, VNIT, INDIA <i>Dr. Ditty Dixon, Mahatma Gandhi University, Kottayam</i>			Session Chair: Dr. Shijo Thomas, NIT Calicut <i>Dr. Bishnu Prasad Biswal, NISER Bhubaneswar, Odisha</i>	
12:00 - 12:20	IL 11	<b>TOPIC: Influence of structure as well transition metal on the performance of Na-ion battery positive electrode materials</b> <i>Dr. Sudhir Sharma, Engineering Division, New York University, Abu Dhabi</i>		IL 12	<b>TOPIC: Covalent Organic Framework Membranes for Molecular Separations and Beyond</b> <i>Dr. Soshi Iimura, National Institute for Materials Science, Japan</i>	
12:20 - 12:40	IL 13	<b>TOPIC: Synthesis of Self-Assembled Nanostructured Liquid Cisplatin via Supercritical CO<sub>2</sub> Processing</b> <i>Dr. Sujith R, BITS Pilani Hyderabad Campus</i>		IL 14	<b>TOPIC: Room temperature hydride ion conduction in rare-earth oxyhydroxides</b> <i>Dr. Rahul M R, IIT (ISM) Dhanbad</i>	
12:40 - 13:00	IL 15	<b>TOPIC: New benchmark MOF for ambient hydrogen storage in mobile applications</b>		IL 16	<b>TOPIC: ICME and Microstructure Informatics Framework for alloy design</b>	

13:15 - 14:00

**LUNCH BREAK**

14:00 - 15:00

**POSTER PRESENTATION**

**MAIN VENUE CORRIDOR**

15:00 - 15:20

**ARYABHATTA HALL: INVITED LECTURE SESSION - IL 17**

*Dr. Subash C K, CeNS, Bengaluru*

**TOPIC: Piezoelectric materials for energy harvesting and pressure sensing**

Session Chair: Dr. Soshi Iimura, National Institute for Materials Science, Japan

15:20 - 16:50

## ORAL PRESENTATIONS DAY 2

OP 6: ARYABHATTA HALL

## Energy Materials

Session Chair: Dr. Soshi Iimura, National Institute for Materials Science, Japan

S.No	TIME	Abstract ID	Author	Title
1	15:20-15:30	AB 164	Thirumalesh B S	Synthesis and study of plasmon-enhanced characteristics of Au@Ag@polymer bimetallic core-shell nanoparticles for energy and environmental applications
2	15:30-15:40	AB 279	Dr. Sundarraj Sriram	Enhanced Seawater Electrolysis for Hydrogen Production Using a Nickel Oxide/Nickel Ferrate Catalyst Supported on Nitrogen-Doped Carbon
3	15:40-15:50	AB 288	Neethulakshmy M N	Investigation of Doped SBNT Ferroelectric Materials for High-Efficiency Energy Storage Application
4	15:50-16:00	AB 289	Sreya O V	Sonoelectrochemical Synthesis of ZnO Nanoparticles for Supercapacitor Electrodes
5	16:00-16:10	AB 305	Gaius Cherian Mathew	Structural and optical characterization of Entropy-Stabilized rare earth-hafnate pyrochlore oxides

15:00 - 16:50

## ORAL PRESENTATIONS DAY 2

OP 7: BHASKARA HALL

## Materials for Environment and Sustainable Development

Session Chair: Dr. Bishnu P Biswal, NISER Bhubaneswar, Odisha

S.No.	TIME	Abstract ID	Author	Title
1	15:00-15:10	AB 213	Vanisree G S	Ultrasound-Assisted Green Synthesis of Biodiesel Using Biochar Catalyst Derived from Queen sago seed shell
2	15:10-15:20	AB 232	Dr. Kanhu Charan Sahoo	Precipitation and coarsening behaviour study of different precipitates on thermal ageing of 304H Cu SS for different periods of time
3	15:20-15:30	AB 262	Mohammed Jamsheed	Effect of montmorillonite nano-clay on the flexural behaviour Ti6Al4V titanium-based carbon fiber/epoxy laminate for structural application
4	15:30-15:40	AB 263	Muzammil Ahmed Khan	The effects of montmorillonite nano-clay (MMT) reinforcement on the mechanical and thermal properties of PLA-based 3D-printed honeycomb structures
5	15:40-15:50	AB 280	Mohammed Fiam K M S	Thermochemical Influence of Activating Flux Powders on TIG Weld Penetration Depth in 316L Stainless Steel
6	15:50-16:00	AB 314	Arathi Chandran	Development and characterization of gum ghatti based nanocomposite reinforced with nanocellulose isolated from Lantana camara L.
7	16:00-16:10	AB 310	Dr. Fazil. A	TGA studies of Hevea brasiliensis leaf biomass for energy extraction
8	16:10-16:20	AB 206	Shana Sudhakaran	Unravelling Structural Transformations and Degradation Mechanisms of Pb-Sn Mixed Perovskite Thin films.

15:00 - 16:50

## ORAL PRESENTATIONS DAY 2

OP 8: CHANAKYA HALL

## Functional Materials and Characterization

Session Chair: Dr. Sujith R, BITS Pilani Hyderabad Campus

S.No	TIME	Abstract ID	Author	Title
1	15:00-15:10	AB 102	Ravikumar V	Effect of Zircon flour and MoS <sub>2</sub> powder on Coefficient of thermal expansion of ZA-27 Composites
2	15:10-15:20	AB 131	Manmath Kumar Dash	Analysis of Stress Fields Near Grain Boundaries During Micropillar Compression Testing in Ni-Based Superalloys
3	15:20-15:30	AB 136	Ruttala Naidu	Microstructural Evolution and Its Impact on Mechanical Properties of INCONEL 600 under Thermomechanical Treatments
4	15:30-15:40	AB 140	Mallavarapu Prudhvi	Enhancing the Mechanical Properties of Recycled PLA-TPU Blends through Polymer Blending Using a Twin-Screw Extruder and Compatibilizer Addition
5	15:40-15:50	AB 141	Tummeda Siva Kumar Prudhvi Raj	Optimizing Densification and Microstructure of Cold Isostatic Pressed (CIP) 18Cr-ODS Ferritic Steel Powder through Sintering Atmosphere Manipulation
6	15:50-16:00	AB 261	Naseeb Abdu Taikkaden	Effect of Dual Excitation on Tamm Plasmon Polariton Mode
7	16:00-16:10	AB 294	Ravi Kumar Bharati	Light confinement in an ordered and disordered superlattice structure
8	16:10-16:20	AB 184	Litha T T	Development of PLA-PCL based Bio-nanocomposite Implant material enhanced with Hydroxyapatite
9	16:20-16:30	AB 171	Sneha C	High-Performance Hydrogen Sensing Using Au-Decorated Zr-Doped SnO <sub>2</sub> Thin Films

15:00 - 16:50

## ORAL PRESENTATIONS DAY 2

OP 9: MED SEMINAR HALL (Room No: MB313)

## Modelling and Simulation - 1

Session Chair: Dr. Jeetu S Babu, NIT Calicut

S.No	TIME	Abstract ID	Author	Title
1	15:00-15:10	AB 120	Ajimshad A	Accelerating Discovery of Non-Equimolar Refractory High-Entropy Alloys Using Machine Learning and Edge Dislocation Theory: A Case Study on the MoNbTiVZr System
2	15:10-15:20	AB 137	Chintapatla Tirumala Surya Prakash	Investigation of Size-Dependent Plasticity in Nickel-Based Superalloys
3	15:20-15:30	AB 219	Ankit Tamrakar	Numerical modelling of semi-solid flow in solidifying mixtures to capture shear bands
4	15:30-15:40	AB 122	Renju C Daniel	Machine Learning-Guided Design and characterisation of CSP-Reinforced High Entropy Alloy Composites
5	15:40-15:50	AB 312	Anoop A Pillai	Thermal Analysis of Autogenous TIG Welding on 316LN Stainless Steel: Comparison of Contact and Non-Contact Temperature Measurements with Simulation Results
6	15:50-16:00	AB 313	Dr. Vineesh K P	Finite Element Modeling and Experimental validation of temperature evolution during the deposition of curved geometry using Wire arc additive Manufacturing

15:00 - 16:50

## ORAL PRESENTATIONS DAY 2

OP 9: CSED SEMINAR HALL (Room No: MB201)

## Modeling and Simulation - 2

Session Chair: Dr. Arun Babu, NIT Calicut

S.No	TIME	Abstract ID	Author	Title
1	15:00-15:10	AB 183	R L Rag	Wire-bonded Micro Heat Pipes: A Computational Study with Different Working Fluids
2	15:10-15:20	AB 187	Kavipriya T	Investigation on Structure Stability and CO <sub>2</sub> Adsorption Over SAC-Doped N-Defected Graphene: DFT and MD Studies
3	15:20-15:30	AB 192	Sonu Sunny	A Theoretical Investigation into the Potential of N-type Conducting Polymer (BBL) as a Gas Sensing Material for NH <sub>3</sub> and H <sub>2</sub> S Detection
4	15:30-15:40	AB 218	Sukruth Rameshkumar	Prediction of ABO <sub>3</sub> -type perovskite structures using machine learning for developing microwave dielectric ceramics
5	15:40-15:50	AB 308	Anoop A V	Investigation of Rayleigh, Love, Sezawa SAW modes for the selective determination of chlorinated hydrocarbons
6	15:50-16:00	AB 256	Madhu A K	Molecular dynamics study of the latent heat of nano-enhanced phase change materials

17:00 - 17:30

## BHASKARA HALL- Valedictory function

