



DAY 1  
20/12/2024  
(FRIDAY)

7:30 - 8:45  
REGISTRATION

9:00 - 9:15  
Inauguration Ceremony  
BHASKARA HALL

9:15 - 10:00

Bhaskara Hall: INAUGURAL SESSION - 1

Bhaskara Hall: Prof. Christian Kübel, KIT, Germany

TOPIC: Understanding Structural and Functional Properties of Materials using Advanced 4D-STEM Techniques

Session Chair: Prof. C B Sobhan, NIT Calicut

10:00 - 10:45

Bhaskara Hall: INAUGURAL SESSION - 2

Bhaskara Hall: Prof. Ajayan P M, Rice University, Houston, USA

TOPIC: Nano-Engineered Materials

Session Chair: Prof. Anantharaman M.R, CUSAT

10:45 - 11:15

TEA BREAK

11:15 - 12:50

PARALLEL SESSION 1

INVITED LECTURE SERIES

TIME	SESSION CODE	BHASKARA HALL		CHANAKYA HALL	
		Session Chair: Prof. Soney Varghese, NIT Calicut Dr. Sachindra Nath Sarangi, Institute of Physics, Bhubaneswar		Session Chair: Prof. Sajith V, NIT Calicut Dr. Ajeet Kumar Srivastav, VNIT, Nagpur	
11:15 - 11:35	IL 1	TOPIC: Organic-Inorganic Hybrid Functional Materials: A New Strategy of Material Design		IL 2	Topic: Defect engineering of non-stoichiometric metal oxides for energy applications.
11:40 - 12:00	IL 3	Dr. P Gopinathan, GMC Ortho Calicut TOPIC: Ultra-high molecular weight highly cross-linked polyethelene in orthopaedic surgery		IL 4	Dr. Devinder Yadav, IIT Patna TOPIC: Electricfication of ceramic manufacturing
12:05 - 12:25	IL 5	Dr. K P Manoj Kumar, KMCT Dental College, Calicut TOPIC: Bridging engineering and healthcare: Innovations in virtual surgical planning, PSI and 3D printing		IL 6	Dr. Chandrasekhar Tiwary, IIT Kharagpur TOPIC: Development of tough and porous complex architecture using energy-efficient sustainable additive manufacturing.
12:30 - 12:50	IL 7	Dr. Jaya Jacob, KSCSTE, Thiruvananthapuram TOPIC: Exploring the Role of Carbon Quantum Dots in Enhancing Plant Functions: Innovative Approaches and Future Prospects		IL 8	Satya Srinivas. B, Carl Zeiss. TOPIC: Correlative Microscopy and Controlled Electron Channeling Contrast Imaging – A New Perspective for Defect Analysis in Bulk Samples

12:50 - 14:00

LUNCH BREAK

14:00 - 14:30

Bhaskara Hall: KEYNOTE SESSION - 3

Prof. M M Shajumon, IISER Thiruvananthapuram

TOPIC: Beyond Lithium-ion: All-solid-state Batteries

Session chair: Dr. Sachindra Nath Sarangi, Institute of Physics, Bhubaneswar

14:30 - 15:00

Bhaskara Hall: KEYNOTE SESSION - 4

Prof. Sarith P Sathian, IIT Madras

TOPIC: Computing for Materials : Past, Present and Future

Session chair: Dr. Sachindra Nath Sarangi, Institute of Physics, Bhubaneswar

15:00 - 15:30

Bhaskara Hall: KEYNOTE SESSION - 5

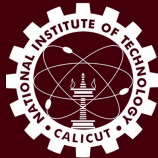
Prof. T S Sampath Kumar, IIT Madras

TOPIC: Multifunctional nanocarriers as magic bullets for combinatorial therapy

Session chair: Dr. Sachindra Nath Sarangi, Institute of Physics, Bhubaneswar

15:30 - 15:45

TEA BREAK



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FOR BOOK  
OF ABSTRACTS



15:40 - 17.15

## ORAL PRESENTATIONS DAY 1

OP 1: ARYABHATTA HALL: Materials for Environment and Sustainable Development

Materials for Corrosion and Degradation Prevention

Session Chair: Dr. Chandrasekhar Tiwary, IIT Kharagpur

S.No	TIME	Abstract ID	Author	Title
1	15:40-15:50	AB 103	Dr. P. Amaravaty	<i>MXene- Layered Double Hydroxide layers coated AZ31 for corrosion resistant applications</i>
2	15:50-16:00	AB 116	Sahi D V	<i>Effect of corona treatment on physico-chemical, mechanical, water barrier, UV-barrier, and biodegradation properties of PVA/Vigna mungo husk powder reinforced biofilms</i>
3	16:00-16:10	AB 146	Vishakha Takhar	<i>Sono-Photo-Fenton Degradation of Organic Pollutants Using MoS<sub>2</sub>-MnFe<sub>2</sub>O<sub>4</sub> Heterojunction</i>
4	16:10-16:20	AB 247	Binu Thomas	<i>Investigation on mechanical properties and microstructure of friction stir welded aluminium AA1100 and magnesium AZ31 alloys for lightweight structural applications</i>
5	16:20-16:30	AB 248	Binu Thomas	<i>Experimental investigation on the effect of process parameters on tensile strength of friction stir-welded aluminium 8090 alloys</i>
6	16:30-16:40	AB 298	Shammamol G K	<i>Corrosion inhibition prospective of collagen-zinc oxide nanocomposite coating on mild steel in an acidic medium</i>

15:40 - 17.15

## ORAL PRESENTATIONS DAY 1

OP 2: BHASKARA HALL

Materials for Environment and Sustainable Development

Session Chair: Dr. Mohammed Rashad, NIT Calicut

S.No.	TIME	Abstract ID	Author	Title
1	15:40-15:50	AB 110	M Aravind Kumar	<i>Development and Characterization of Cocos Nucifera Shell (CNS) Biochar Reinforced Vinyl Ester Composites</i>
2	15:50-16:00	AB 125	Arun B S	<i>Influence of process parameters and heat treatment on the fatigue performance of Inconel 718 fabricated through Selective Laser Melting</i>
3	16:00-16:10	AB 134	Sandip Rudha Budhe	<i>Thermal Performance Enhancement of natural fibre reinforced recycled polystyrene composite through material optimisation and pore structure</i>
4	16:10-16:20	AB 168	Shalini C	<i>Photocatalytic dye degradation of mixed dyes using zinc oxide nanoparticles</i>
5	16:20-16:30	AB 172	Sreeja P	<i>Efficient synthesis of carbon nanospheres from polystyrene using microwave-initiated biochar-based bimetal-catalytic method</i>
6	16:30-16:40	AB 177	P. Uma Sathyakam	<i>Vanadium pentoxide coated smart windows for passive radiative cooling in buildings</i>
7	16:40-16:50	AB 189	Bijo Abraham Jacob	
8	16:50-17:00	AB 198	Deepak Chandran Ganesh	<i>Sustainable Precision Drilling of 15.5 mm Thick Nimonic 263 Plates Using Optimized Abrasive Water Jet Processing</i>

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## ORAL PRESENTATIONS DAY 1

OP 3: CHANAKYA HALL

Energy Materials

Session Chair: Dr. Maneesh P Chandran, NIT Calicut

S.No	TIME	Abstract ID	Author	Title
1	15:40-15:50	AB 121	Ayisha Hamdath K K	<i>Electrodeposited TiNi cathodes for magnesium-based primary seawater batteries</i>
2	15:50-16:00	AB 143	Dr.K.V. Madhuri	<i>Effect of annealing on the Physical properties of electron beam evaporated Vanadium oxide thin films</i>
3	16:00-16:10	AB 157	Sunita Tarei	<i>Enhancing the efficiency of WS<sub>2</sub> based solar cell using MoO<sub>3</sub> as HTL and SnO<sub>2</sub> as ETL : A numerical study</i>
4	16:10-16:20	AB 163	Dr. Sujith Raveendran	<i>Interface Optimization of Silicon Oxycarbide Ceramic-Coated Electrodes for Enhanced Electrochemical Performance</i>
5	16:20-16:30	AB 193	Muralidaran K	<i>Luminescence and Energy Transfer Studies of Gd<sup>3+</sup> and Eu<sup>3+</sup> codoped LaNbO<sub>4</sub> phosphor for Solid State Lighting Applications</i>
6	16:30-16:40	AB 195	Anu Chaili	<i>PDMS/ <math>\beta</math>-phase Si<sub>3</sub>N<sub>4</sub> Based Polymer Micro composite as Plantar Pressure Sensor and Energy Harvesting Layer</i>
7	16:40-16:50	AB 266	Falgun Raval	<i>Preparation and characterization of a novel organic-inorganic eutectic phase change material for medium-temperature applications</i>

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## ORAL PRESENTATIONS DAY 1

OP 4: MED SEMINAR HALL (Room No: MB 313)

Medical Materials

Session Chair: Dr. Manoj Kumar, KMCT Dental College, Calicut

S.No	TIME	Abstract ID	Author	Title
1	15:40-15:50	AB 115	Mohammad Ameer Mustafa Shah	<i>Non-Surgical Non-Adhesive Smart Hearing Aid Using Bone Conduction Transducers</i>
2	15:50-16:00	AB 135	Kawshik S	<i>Development of electrospun PVA nanofibrous scaffold incorporating CuO green NPs and curcumin for wound healing</i>
3	16:00-16:10	AB 144	Vivek C Ravi	<i>The role of annealing on structural, mechanical and tribological properties of 3D printed PLA/ Pyrolytic carbon composite</i>
4	16:10-16:20	AB 162	Paritosh Tomar	<i>Development and Characterization of TPU-PLA Blends for Enhanced Shape Memory Performance for Biomedical Applications using SLA 3D Printing</i>
5	16:20-16:30	AB 224	Satyendra Vishwakarma	<i>Non-Invasive Ketosis Detection via Breath Acetone Using a Quartz Tuning Fork Sensor Array</i>
6	16:30-16:40	AB 240	Sunil Anil More	<i>Experimental Investigation of Polyvinylpyrrolidone as an Artificial Synovial Fluid Material for Osteoarthritis Treatment</i>
7	16:40-16:50	AB 265	Ayshathil Bushra K	<i>Development of a Portable Non-Enzymatic Paper Field Effect Transistor-Based (PFET) Sensor for Wearable Sweat-Glucose Monitoring Applications</i>

15:40 - 17.15

## ORAL PRESENTATIONS DAY 1

OP 5: CSED SEMINAR HALL (Room No: MB 201)

Functional Materials and Characterisation

Session Chair: Dr.Sudhir Sharma, Engineering Division, New York University, Abu Dhabi

S.No	TIME	Abstract ID	Author	Title
1	15:40-15:50	AB 111	Nesleena P	<i>Morphology Tuning and Interfacial Tension-Impelled Self-Assembly of Poly(3,4-ethylene dioxathiophene)/Tellurium Nanocomposites at Various Liquid/Liquid Interfaces.</i>
2	15:50-16:00	AB 170	Swathi Suneesh	<i>Theoretical Insights into (Opto) Electronic Tuning of Naphthalene Diimide-Naphthodithiophene (NDI-NDT) Copolymers for Organic Electronics</i>
3	16:00-16:10	AB 174	Angelin Abraham	<i>Improving Surface Wettability of WO<sub>3</sub>.0.33H<sub>2</sub>O Nanostructures for Hydrogen Evolution Reaction</i>
4	16:10-16:20	AB 210	Manmohan Dash	<i>Synthesis and characterization of blue emitting TADF emitter with electron transporting capability.</i>
5	16:20-16:30	AB 230	Amit Bhargav	<i>Growth and characterization of Aluminum Nitride (AlN) thin film on steel using plasma enhanced chemical vapor deposition technique</i>
6	16:30-16:40	AB 235	Mohan Jayasankar	<i>Tribological performance of FDM-printed PETG parts under wet sliding conditions: Insights for industrial applications</i>
7	16:40-16:50	AB 243	Dr. Syamkumar K	<i>Comparative Analysis of Mullite Powders for APS Coatings: Assessing Morphology, Thermal, and Mechanical Properties</i>

17:00 - 18:30

## POSTER PRESENTATION

MAIN VENUE

18:30 - 19:30

ARYABHATTA HALL

INDIAN CLASSICAL CULTURAL NIGHT

19:30 - 21:30

CONFERENCE DINNER