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|  **Day 1: December 11, 2024** |
| **10:00 – 11:00** | **Inauguration** **(Hall A)** |
| **11:00 – 11:30** | **Tea break** |
|  | Session Chair: Dr. Sunil K. Narayanankutty Dept. of Polymer Science and Rubber Technology, CUSAT |
| **11:30 – 12:15** | **Hall A** **Plenary Talk P1 – Dr. Ajayan Vinu** University of NewCastle , Australia**Title:**  **Functional Nanomaterials Based Solutions for Global Energy and Environmental Issues** |
| **12:15—13:00** | **Hall A****Plenary Talk P2 – Dr. Suresh C. Pillai**Atlantic Technological University, Ireland**Title:**  **Innovation in Materials for Environmental Applications: Lab to Society and****Marketplace** |
| **13:00 – 13:50** | **Lunch Break** |
|  | **Parallel Sessions (Hall A, B, and C)** |
|  | **Theme: Materials for clean water and sustainable environment****( Hall A)** | **Theme: Sensors and catalysis****( Hall B)** | **Theme: Solar cells and photovoltaics** **( Hall C)** |
| **Session Chair** | Dr. Pramod Gopinath International School of Photonics, CUSAT | Dr. Yoosaf K.Dept. of Applied Chemistry, CUSAT | Dr. Aldrin AntonyDept. of Physics, CUSAT |
| **13:50 – 14:25** | **Keynote Talk: A1****Dr. Laura Clariza**University of Naples Federico, Italy**Title:**  **Dual-Purpose Hydrogen Generation and Wastewater Treatment using Visible-Light Photocatalysis: Process Optimization and Key Challenges** | **Keynote Talk: B1****Dr. M. K. Jayaraj**Dept. of Physics, CUSAT **Title:**  **Nanoscale Memristor Devices as Synapse for Vision Sensor** | **Keynote Talk: C1****Dr. Mats Andersson** Flinders University, Australia**Title: Unconventionally low donor content in efficient polymer solar cells and photocatalytic nanoparticles** |
| **14:25 – 15:00** | **14:25 – 14:50****Invited Talk: A1****Dr. Devagi Kanakaraju**University Malaysia Sarawak, Malaysia**Title:**  **TiO₂-based Photocatalytic Materials in Environmental Remediation: From Synthesis to Application** | **14:25 – 15:00****Keynote Talk: B2****Dr. Praveen C. Ramamurthy**Indian Institute of Science, Bangalore**Title:**  **Organic sensors: Molecules to devices** | **14:25 – 14:50****Invited Talk: C1****Dr. Suraj Soman**CSIR-National Institute for Interdisciplinary Science and Technology Thiruvananthapuram**Title:**  **Molecular Light Harvesters for Indoor Photovoltaics: From Lab to Fab**  |
| **14:50 – 15:35** | **14:50 – 15:15****Invited Talk: A2****Dr. Fazalurahman Kuttassery**University of Calicut**Title:**  **Molecular Photoelectrochemical Cells for CO2 Reduction Coupled with Water Oxidation** | **15:00 – 15:25****Invited Talk: B1****Dr. Mahesh Kumar**Indian Institute of Technology, Jodhpur**Title:**  **Machine Learning Approach to Develop a Real-Time Prediction Model for H2S Gas Detection** | **14:50 – 15:15*****Short Invited Talk*****Dr. Gopika G kumar** ***Oral presentation*****OP (F)1**  |
| **15:15 – 15:35*****Oral presentation*****OP(F)4****OP(F)5** | **15:25– 15:35*****Oral presentation*****OP(F)6** | **15:15 – 15:35*****Oral presentation*****OP (F)2** **OP(F)-3** |
| **15:35 – 15:50** | **Tea Break** |
| **15:50 – 16:50** | **Panel Discussion**  |
| **16:50 – 17:50** | **Poster Presentations and Evaluation** **Themes: Nanogenerators for energy harvesting and sensing, Materials for clean water and sustainable environment, Hydrogen energy** |
| **18:00 – 19:00** | **Cultural Program (Hall A)** |
| **19:00 – 20:30** | **Dinner** |

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| **Day 2: December 12,2024** |
|  | Session Chair: Dr. Thomas KurianDept. of Polymer Science and Rubber Technology, CUSAT |
| **9:30 – 10:15** | **Hall A****Plenary Talk P3 – Dr. Oomman K. Varghese** University of Houston USA**Title:** **Exceptional Properties of Low Dimensional Semiconductors for Energy and****Environmental Applications** |
|  | **Parallel Sessions (Hall A, B and C)** |
|  | **Theme: Next-Generation Materials for Energy Storage****( Hall A)** | **Theme: Sensors and catalysis****( Hall B)** | **Theme: Hydrogen Energy****( Hall C)**  |
| **Session Chairs** | Dr. Jayalatha Gopalakrishnan GDept. of Polymer Science and Rubber Technology, CUSAT | Dr. Pankaj Sagar Dept. of Instrumentation, CUSAT | Dr. Sailaja G.S.Dept. of Polymer Science and Rubber Technology, CUSAT |
| **10:15 – 10:50** | **Keynote Talk: A2****Dr. Dhamodaran Santhanagopalan**Amrita Center for Nanosciences and Molecular Medicine, Kochi**Title:** **Maximizing Energy Density of High-voltage Intercalation Cathode Based Lithium Batteries** | **Keynote Talk: B3****Dr. Inamur R Laskar** Bits Pilani, Rajasthan**Title: Towards Effective Detection of Nitroaromatics with Molecular Luminescent Compounds: A Journey** | **Keynote Talk: C2****Dr. Sreekumar Kurungot**CSIR- National Chemical Laboratory, Pune**Title: Process-Friendly Electrodes for Hydrogen Generation and Conversion via Catalyst Structuring and Electrode-Electrolyte Interface Engineering** |
| **10:50 – 11:05** | **Tea break** |
| **11:05 – 11:30** | **Invited Talk: A3****Dr. Marappan Sathish**CSIR- Central Electrochemical Research Institute (CECRI), Karaikudi**Title: Challenges and Opportunities in Developing Electrode Materials for Supercapacitors with High Energy Density** | **Invited Talk: B2****Dr. Priyanka Ganguly**London Metropolitan University, London**Title: The Future of Sensors in Flexible Electronics and their Transformative Application.** | **Invited Talk: C2****Dr. Aravind Kumar Chandiran**Indian Institute of Technology, Madras**Title: Solar water splitting using halide perovskite materials** |
| **11:30 – 11:55** | **Invited Talk: A4****Dr. Rakhi R.B.**CSIR-National Institute for Interdisciplinary Science and Technology Thiruvananthapuram**Title: Optimizing Molybdenum Dichalcogenide for High-Efficiency Supercapacitor Electrodes** | ***Short Invited Talk*****Dr. Bindu Krishnan*****Oral presentation*****OP1** | **Invited Talk: C3****Dr. Neena S. John**Centre for Nano and Soft Matter Sciences (CeNS), Bangalore**Title: Development Of Electrocatalysts for Energy Efficient Hydrogen Generation by Urea Assisted Water Electrolysis** |
| **11:55 – 12:25** | ***Short Invited Talks*****Dr. Shahid Husain****Dr. Abdul Khayum Mohammed**  | ***Oral presentation*****OP2, OP3, OP4** | ***Short Invited Talks*****Dr. Nithinraj P.D.****Dr.Jay Pandey** |
| **12:25 – 13:15** | **Poster Presentations and Evaluation** **Theme: Sensors and catalysis, Next-Generation Materials for Energy Storage, Solar cells and photovoltaics** |
| **13:15 – 14:00** | **Lunch Break** |
|  | **Parallel Sessions (Hall A, B and C)** |
|  | **Theme: Next-Generation materials for energy storage****( Hall A)** | **Theme: Nanogenerators for energy harvesting and sensing****( Hall B)** | **Theme: Energy & environment** **( Hall C)** |
| **Session Chairs** | Dr. Asha A.S.Dept. of Physics, CUSAT | Dr. Saji K. J.International School of Photonics, CUSAT | Dr. Abhitha K.Dept. of Polymer Science and Rubber Technology, CUSAT |
| **14:00 – 14:25** | **Invited Talk: A5****Dr. Binitha N.N.**University of Calicut**Title: Edge Functionalized Graphene: Next-generation Energy Storage Material** | **Keynote Talk: B4****Dr. Daniel Mulvihill**University of Glasgow(Online)**Title: Mechanics of Triboelectric Nanogenerators** | **Invited Talk: C4****Dr. Pradeepan Periyat**Kannur University**Title:**  **Nanotechnology as a Tool for Energy and Environmental Remediations** |
| **14:25 – 14:55** | **Invited Talk: A6****Dr. Nitin Muralidharan**Indian Institute of Technology, Madras**Title: Development of Novel Co-Free, Li-ion Battery Cathodes – From Lab-Scale to Pilot-Scale and Beyond** | **Invited Talk: B3****Dr. Rakesh Kumar Rajaboina** National Institute of Technology Warangal**Title: Energy Harvesting and Sensing: MOFs Meet TENGs for Smarter Solutions** | **Invited Talk: C5****Dr. Renuka N.K.**University of Calicut**Title: Carbon Nanodots: The Mystic Stars** |
| **14:55 – 15:25** | ***Oral presentations*****OP 5 to OP 7** | **Invited Talk: B4****Dr. Arunkumar Chandrasekhar**Vellore Institute of Technology, Tamil Nadu, India.**Title: Enhancing Triboelectric Nanogenerators Through Material Recycling for Sustainable Green Energy** | ***Oral presentations*****OP 8 to OP 10** |
| **15:25 – 15:40** | **Tea Break** |
| **15:40 – 16:30** | **15:40 – 16:40*****Oral presentation*****OP(F)7** | **15:40 – 16:10*****Oral presentation*****OP(F)8*****Oral presentations*****OP 16 to OP 19** | **15:40 – 16:20*****Oral presentations*****OP 11 to OP 15** |

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|  **Day 3: December 13, 2024** |
|  | **Parallel Sessions (Hall A and B)** |
|  | **Theme: Nanogenerators for energy harvesting and sensing****( Hall A)**  | **Theme: Energy & environment**  **( Hall B)** |
| **Session Chairs** | Dr. Soney VargheseNational Institute of Technology, Calicut | Dr.Praveen C.S.International School of Photonics, CUSAT |
| **9:30 – 9:50** | **Keynote: A3****Dr. Youhong Tang**Flinders University, Australia**Title:** **Triboelectric Nanogenerator Enabled Ocean/Offshore Applications** | **Invited Talk B5****Dr. U.S. Hareesh** CSIR-National Institute for Interdisciplinary Science and Technology Thiruvananthapuram**Title: Materials for CO2 Capture and Conversion** |
| **9:50 – 10:15** |  **Invited Talk: A7****Dr. S. Anandhan**National Institute of Technology,Surathkal, Karnataka**Title: PVDF Nanocomposites-based Smart Textiles for Piezoelectric and Triboelectric Energy Harvesting** | **Invited Talk B6****Dr. Dinesh Jagadeesan**Indian Institute of Technology, Palakkad**Title: Catalytic Low Temperature Oxidation of Ethylene** |
| **10:15 – 10:30** | **Tea break** |
| **10.30 – 11.00** | ***Short Invited Talks*****Dr. Divya Jose****Dr. Sreejith P. Madhusudanan** | ***Oral presentations*****OP(F)9, OP(F)10, OP(F)11** |
| **11:00– 13:00** | **Elsevier Publishers Workshop and Meet the Editors** |
| **13:00 – 14:00** | **Lunch Break** |
| **14:00– 15:00** | **Valedictory and Announcement of Elsevier Awards** |