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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 Antony  Dept. 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 Kurian  Dept. 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 G  Dept. 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 Varghese  National 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** | |