TECHNICAL PROGRAM (Poster Sessions)

Monday, 15th December 2025	
Session	**Poster Session 1**
Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P1-01	*Optimizing Dendrite Free Anodes for Zinc Ion Batteries using PEG functionalized Carbon Nanotube*, **Abdullah Shaikh**, Khalifa University
P1-02	*Finding a Best Catalysis for a Plasma Based Ammonia Synthesis with the Help of Agglomeration Energy by DFT*, **Aneesh Kumar S**, IIT Delhi – Abu Dhabi
P1-03	*Hydrophobic Deep Eutectic Solvent–Embedded Ultrafiltration Membranes for Efficient Pharmaceuticals Removal from Municipal Wastewater*, **Anjali Goyal**, Khalifa University
P1-04	*Optimizing Ferroelectric Photovoltaic Performance in KBNNO Ceramics via Grain Size Engineering*, **Ankit Chahar**, Jawaharlal Nehru University New Delhi
P1-05	*Investigating Thermal Performance of PCM-Based Thermal Energy Storage with Porous Fins: A Coupled CFD - ML Approach*, **Ankit Kumar**, IIT Delhi – Abu Dhabi
P1-06	*Machine Learning Approaches for Prediction of the Coefficient of Discharge of Broad Crested Weirs*, **Ashwin Chitravanshi**, IIT (BHU) Varanasi
P1-07	*Sustainable Oil Spill Cleanup Using Milkweed–Waste Cotton Needle-Punched Nonwoven Blends*, **Chandra Jeet Singh**, IIT Delhi
P1-08	*Materials-Led Passive Cooling Retrofit for a Lecture Hall in Abu Dhabi*, **Deepanshu Babbar**, IIT Delhi – Abu Dhabi
P1-09	*Circular Valorization of Textile Wastewater in Concrete Production: A Sustainable Material Approach for Water–Energy Nexus*, **Deepti Surana**, IIT Delhi
P1-10	*Designing Heat-Resistant Self-Healable Adhesives through Polybenzoxazine Vitrimers with Dual Dynamic Networks*, **Gaurav Rai**, IIT Delhi
P1-11	*Pyrolysis of Electrostatically Enriched Precursors Produce Pt_3Ni Nanocatalysts Supported on Nitrogen-doped GO with a Low Overpotential for HER* , **Hafna T**, IIT Palakkad
P1-12	*Nanostructured Polybenzoxazine Particles-Supported Ammonia Borane for Hydrogen Storage and Release*, **Ingita Tiwari**, IIT Delhi
P1-13	*Machine Learning Based Dynamic Model of Solar Thermal Power Plant*, **Mani Bhushan**, IIT Bombay
P1-14	*Harnessing Mechanical Energy with Rotationally Aligned Piezoelectric TMDs Composite Materials: A Step Toward Flexible and Sustainable Energy Storage Systems*, **Mayuri Srivastava**, IIT Delhi
P1-15	*Interface-Engineered Polyaniline Composites on Diverse Supports for Efficient Michael Addition Catalysis*, **Md Imteyaz Alam**, IIT Delhi
P1-16	*Development of Sulphur and Nitrogen Doped Fluorescent Carbon Quantum Dots for Hydroquinone Sensing*, **Murli Dhar Mitra**, IIT (BHU) Varanasi
P1-17	*Development of a Correlation for Assessment of BIPV Potential Under Shading Constraints*, **Priyanka Rai**, Malaviya National Institute of Technology Jaipur
P1-18	*Low Temperature Oxidation of Ethylene by Co_3O_4 Catalysts* , **Roshni Madampadi**, IIT Palakkad
P1-19	*Hybrid Conductive Additive for Stable Graphite-Based Li-ion Anodes*, **Rudraksh Gupta**, IIT Delhi

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Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P1-20	*Cadmium Ion Removal from Wastewater using Activated Carbon under Variable Experimental Condition*, **Shahid Ikabal**, IIT (ISM) Dhanbad
P1-21	*Analyzing Charging Performance of High Temperature Shell and Tube Latent Heat Storage*, **Mallayya Swami**, IIT Delhi
P1-22	*Hourly Ahead Solar Irradiation Forecasting using Deep Learning Models*, **Tarun Goel**, IIT Delhi
P1-23	*Eco-inspired Multifunctional Hydrogels via Free-Radical Polymerization for Ultra-Sensitive Sensing, Recovery, and Reuse of Rare Earth Elements*, **Somya Sadaf**, IIT Gandhinagar
P1-24	*Wastewater to Wardrobe: Phycocyanin from Oxygenic Photogranules for Eco-Functional Textiles*, **Vivek Kumar Nair**, IIT Delhi
P1-25	*Synergistic g-C_3N_4/$BiFeO_3$ Binder-free Cathode: Sustainable Photoelectron Oxidation of Dimethyl Phthalate*, **Yasser Bashir**, IIT Delhi
P1-26	*Understanding Pd/CHA Zeolites Function under Cold-Start Conditions: An Operando FT-IR Spectroscopy and Microreactor Approach*, **Yusra Hamid**, University of Lisbon
P1-27	*Reusing End-of-Life Solar PV Panels as Silicon Anodes for Lithium-Ion Batteries: A Review*, **Zarrin Khan**, IIT Bombay
P1-28	*Life Cycle Assessment of Methane Abatement Technologies using Small Language Model Mixture of Experts*, **Bilal Rasheed**, IIT Delhi – Abu Dhabi
P1-29	*Climate-Justified Optimization for Decentralized Ammonia Production via Green Hydrogen and Haber-Bosch Process using Deep Learning*, **Mehbooba C**, IIT Delhi – Abu Dhabi
P1-30	*Multi-Objective Superstructure Optimization and Techno-Economic Assessment of Electrified CO_2 to Methanol Conversion*, **Sarthak Mazumder**, IIT Delhi – Abu Dhabi
P1-31	*Integrating Science, Engineering, and Policy for Sustainable Aerospace Innovation in Africa*, **Yasir Aliyu**, UAVS
P1-32	*Machine Learning Enhanced Prediction of Voltage Capacity Dynamics in Gradient Aged Lithium-Ion Batteries*, **Jibin M Joy**, IIT Delhi – Abu Dhabi
P1-33	*Optimizing Land and Energy: Sustainable Underground Storage for a Resilient Energy Transition*, **Altaf Usmani**, Engineers India Limited
P1-34	*Bimetallic $CoCdS_2$: A Promising Supercapacitor Material for Energy Storage Devices*, **Pratiksha Borse**, University of Mumbai
P1-35	*Production of CO_2 Adsorption on Data-Driven Metal Organic Frameworks (MOFs) using Machine Learning*, **Ashutosh Yadav**, IIT Jammu
P1-36	*Machine-Learned Solvent-Implicit Coarse-Grained Modeling of Biomimetic Lipid Bilayers*, **Ayishwarya Dutta**, IIT Delhi – Abu Dhabi
P1-37	*Liquid Structure of Localized High Concentration Electrolyte for Lithium-Ion Battery*, **Navneet Singh**, IIT Delhi – Abu Dhabi
P1-38	*Design of Material (Metal Organic Framework) for Carbon Capture: A Computational Approach Integrated with Atomistic Simulation*, **Tanay Das**, IIT Delhi - Abu Dhabi

TECHNICAL PROGRAM (Poster Sessions)

Tuesday, 16th December 2025	
Session	**Poster Session 2**
Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P2-01	*Wind Power Forecasting Using Various Forecasting Techniques*, **Aditya Kumar**, NIT Trichy
P2-02	*Smart Multi-Layered Wall Insulation Using Recycled Waste Materials*, **Ahmad Deeb**, Khalifa University
P2-03	*A Context-Dependent Network DEA Framework with Directional Distance Functions for Sustainable Decision Intelligence: Insights from the Indian Banking Sector*, **Akash Jain**, Netaji Subash University of Technology Delhi
P2-04	*Impact of Dual Acetylation and Temperature on Xylan-Cellulose Interactions*, **Ankit Joshi**, IIT (ISM) Dhanbad
P2-05	*Boosting Hydrogen Evolution on Halogenated MXenes via Surface Termination Engineering: A Data-Informed Computational and Experimental Strategy*, **Ankita Kumari**, IIT Delhi
P2-06	*Sound Absorption Prediction in TPMS Metamaterials via Machine Learning*, **Vignesh Sekar**, Khalifa University
P2-07	*Hybrid-CGAN-Based Modeling and Experimental Study of Thermal Comfort in Extreme Mining Protective Clothing*, **Bukke Kiran Naik**, NIT Rourkela
P2-08	*Deep Neural Network–Based Dynamic Plantwide Modeling of a Hybrid Solar Thermal Power Plant*, **Dibyajyoti Baidya**, IIT Bombay
P2-09	*Optimizing Sustainable Energy Planning in Delhi: A Hybrid Machine Learning and Time Series Approach for Solar Potential Forecasting*, **Dipali Pawar**, IIT Delhi
P2-10	*Carbide Volume Fraction in Cobalt-based Alloys using ML techniques*, **Vishakh Pradeep Kumar**, Heriot-Watt University
P2-11	*Development of Multifunctional Textiles using Bio-derived Coumalic Acid against Pathogens, Vector-borne Diseases, and Environmental Stressors*, **Gulshitab Aalam**, IIT Delhi
P2-12	*Development of Machine Learning Integrated Moving Horizon State Estimator for Processes Subject to Missing Data and Delayed Measurements: Application to Industrial Scale Penicillin Production Process (IndPenSim)*, **Vishnu Roshan**, IIT Ropar
P2-13	*Machine Learning Potentials to Guide Reaction Mechanisms at the Metal-Water Interface*, **Jayendran Iyer**, IIT Delhi
P2-14	*Bioinspired Metamaterials for Sustainable Noise Reduction*, **Kamal K Sirivuri**, Khalifa University
P2-15	*Production of H_2-rich Syngas Production through ML-driven Catalyst and Process Condition Optimization with Experimental Validation and Mechanistic Insights*, **Kaushik Kundu**, IIT Delhi
P2-16	*Forecasting Building Thermal Demand Using Machine Learning*, **Lloyd Corcoran**, Cardiff University
P2-17	*AI-Driven Local Positioning System for Secure and Autonomous Navigation in Resource-Constrained Environments*, **Misgina Tewelde**
P2-18	*CNN-LSTM Based Multi-Height Wind Speed Prediction for Sustainable Wind Energy Applications*, **Mohan Narayan Gupta**, IIT (BHU) Varanasi
P2-19	*Data-Driven Catalytic Depolymerization of Lignin: Sobol–Bayesian Optimization Framework for High-Yield Guaiacol Production*, **Nagasree Keerthi Pujari**, IIT Hyderabad

TECHNICAL PROGRAM (Poster Sessions)

Tuesday, 16th December 2025	
Session	**Poster Session 2**
Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P2-20	*High-Throughput and Data-Driven Search for Stable Optoelectronic $AMSe_3$ Materials*, **Nikhil Singh**, IIT Delhi
P2-21	*Data-Driven Indoor Air Quality Forecasting: A Machine Learning Approach for Smart and Healthy Buildings*, **Sajid Mannan**, IIT Delhi
P2-22	*Industrial-Scale Prediction of Cement Clinker Phases using Machine Learning*, **Sheikh Junaid Fayaz**, IIT Delhi
P2-23	*Explainable Machine Learning Based Multi-Objective Optimization Framework for Ammonia Recovery from Digestate*, **Shobhita Sharma**, IIT Delhi
P2-24	*Data-Driven Prediction of Polymer Adhesion on Heterogeneous Surfaces via Attention based Learning*, **Sibasankar Panigrahy**, IIT Delhi
P2-25	*Machine Learning-Driven TMDCs-based Sensors for Discrimination of Volatile Amines in Complex Mixtures*, **Snehraj Gaur**, IIT Delhi
P2-26	*AI-Enabled Design Verification and Validation: Strengthening Process Safety through Intelligent Engineering Assurance*, **Subhadra Devi Saripalli**, IIT Madras
P2-27	*Artificial Neural Network Framework for Exploring the Flammability Space of Eco-Friendly Refrigerants*, **Sultan Al Ali**, Khalifa University
P2-28	*Basal Plane Passivation of $Ti_3C_2T_x$ MXenes through Prussian Blue Analog Nanoparticles Anchoring for Efficient and Selective Electrochemical Ammonia Synthesis*, **Aamir Yaseen Bhat**, IIT Delhi
P2-29	*Boosting Mg Battery Performance using InSe/C Composite Cathode*, **Gazal Gupta**, IIT Delhi
P2-30	*Suppressing Agglomeration and Boosting Proton Storage in 1D Mesoporous Co_3S_4-Carbon Nanofiber Composites for Flexible Supercapacitors*, **Sagar Munjal**, IIT Delhi
P2-31	*Experimental Investigation of Charging and Discharging Pattern of a Shell and Tube Thermal Energy Storage System*, **Sudhir Kumar Gupta**, IIT Delhi
P2-32	*Comprehensive Life Cycle Assessment of CO_2-Enhanced Oil Recovery Pathways in Indian Oilfields: Evaluating Emission Trade-offs and Net Carbon Balance*, **Dinesh Joshi**, Khalifa University
P2-33	*Unexpected Lowering of Charge-Transfer Resistance in Ultra-Long Cycled (>30,000 Cycles) Solution-Processed Laminar-Crystalline Li_3VO_4 Anodes and its Li_3VO_4||LFP Full Cells Performance in 18650 form factor*, **Tejveer Singh Anand**, IIT Delhi
P2-34	*Performance Enhancement of Parallel Flow Direct Contact Membrane Distillation using Localized Heating*, **Ravi Kumar Kandasamy**, IIT Delhi
P2-35	*Lightweight, Strong, Sustainable Graphene-Wood Composites as Aerospace Structural Materials*, **Afnan Elmubasher Malik**, Khalifa University
P2-36	*Optimization of Radiator Fin Geometry in Formula 1 Cars Using Machine Learning*, **Keshvi Singh**, IIT Delhi – Abu Dhabi
P2-37	*Molecular Modelling of the Gram-negative Bacterium Escherichia coli Cell Envelope*, **Jyoti Rai**, IIT Delhi – Abu Dhabi
P2-38	*Modulating Molecular Interaction in Deep Eutectic Solvent-Based Electrolytes Enables Enhanced Reactive CO_2 Capture*, **Mrityunjay Kumar Jha**, IIT Delhi – Abu Dhabi

TECHNICAL PROGRAM (Poster Sessions)

Wednesday, 17th December 2025	
Session	**Poster Session 3**
Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P3-01	*Development of GIS-Based Maps and Change Detection for Groundwater Quality Assessment of Agra, Uttar Pradesh*, **Abhimanyu Verma**, IIT (BHU) Varanasi
P3-02	*Green Encapsulation of Metal Oxide and Noble Metal ZnO@Ag for Efficient Antibacterial and Catalytic Performance*, **Aisha Noor**, IIT Delhi
P3-03	*Investigating the Electrochemical Performance and Degradation Mechanism of $Na_3V_2(PO_4)_3$ for Sodium-Ion Batteries*, **Akshita Sharma**, IIT Delhi
P3-04	*Review: Bottlenecks of Indian Waste Management & AI Driven Solutions*, **Amna Rahman**, IIT Bombay
P3-05	*Unveiling Medium-Dependent Synergistic Role of Metals and Active sites in Prussian Blue Analogue-Derived FeCoTe for Hydrogen Evolution using Electroanalytical Techniques*, **Bhawna Rathor**, IIT Delhi
P3-06	*Biomass Briquettes as a Low-Carbon Alternative Fuel for Hard-to-Abate Industries*, **Bishakh Choudhury**, IIT Delhi
P3-07	*Design of Bend-Compensated Large Mode Area Fibers for Single-Mode High-Power Laser Systems*, **Soorej Thekkeyil**, IIT Delhi
P3-08	*Chew, Goldberger & Low equations: Eigensystem Analysis and Applications to One-Dimensional Test Problems*, **Chetan Singh**, IIT Delhi – Abu Dhabi
P3-09	*An Integrated Process-Structure-Property Model for Recycled Carbon Fibre Needlepunched Nonwovens: Towards Sustainable Structural Materials*, **Danvendra Singh**, IIT Delhi
P3-10	*Unveiling Chemical Evolution of Electrode-Electrolyte Interface in Sodium Ion Batteries from Machine Learning Potential-based Simulations*, **Dhananjay**, IIT Delhi
P3-11	*Impact of Geometry Structure on Hydrogen Desorption Behaviour in Metal Hydride Storage System*, **Gaurav Arora**, IIT Delhi
P3-12	*Assessment of Stability of Natural Colored Pigments in Indigenous Food Products*, **Gaurav Meena**, IIT Delhi
P3-13	*Hydrogen Storage Capacities in Nanoporous M2(m-dobdc) Metal-Organic Frameworks at Near Ambient Temperatures*, **Himani Joshi**, IIT Indore
P3-14	*Semi-Markov Modeling Based Reliability Analysis and Cost Optimization of Intelligent Transportation Systems Assisted with Cloud-Fog Server*, **Ishu Jain**, Netaji Subhas University of Technology Delhi
P3-15	*Integration of Solar Powered Distillation in Dairy Effluent Treatment*, **Ishwin Saini**, Heriot-Watt University
P3-16	*Resilient Pathways for Electricity and Emissions Futures in the United Arab Emirates: AI-Powered Predictive Modeling*, **Issa Zaiter**, Khalifa University
P3-17	*Multi-days Ahead Times Series Forecasting of Sea Surface Temperature using Transformer Models*, **Jayaram Valluru**, IIT Ropar
P3-18	*CO_2 Capture over Biomass Derived Porous Carbon Materials*, **Khushbu Bhavsar**, Sardar Vallabhbhai National Institute of Technology, Surat
P3-19	*Surface-Engineered Pd/g-C_3N_4 Catalysts for Light-Driven Formic Acid Dehydrogenation at Room Temperature*, **Mathivathani J R**, IIT Delhi

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Session	**Poster Session 3**
Room	Lobby, Fairmont Bab Al Bahr, Abu Dhabi
Poster No.	**Title**
P3-20	*Process-level Evaluation of Adsorbents and Cycle Configurations for Post-Combustion CO_2 Capture*, **Mohammad Al Hamadi**, Khalifa University
P3-21	*Photonics to Physiology: BCN@CMC Nanocomposites for Optoelectronics and Biomedical Devices*, **Mohan Manjunathaswamy**, Khalifa University
P3-22	*From Bulk Solvents to Confined Spaces: Redefining Reaction Environments*, **Mohd Ussama**, IIT Delhi – Abu Dhabi
P3-23	*Eco-friendly Co-precipitation Processed $BaZn(VO_4)_2$ Nanoparticles as a Promising Anode Material for Li and Na-ion Batteries*, **Mohd Saqib**, IIT Delhi
P3-24	*AI-Augmented Socio-Technical Viability Framework for Multi-Criteria Evaluation of Energy Storage Technologies*, **Mohit Murarka**, IIT Delhi – Abu Dhabi
P3-25	*Efficient Simulation of Two-Dimensional Anisotropic Reaction–Diffusion Systems via Hybrid Cubic B-Spline Differential Quadrature: Applications to Tumor Growth Modeling*, **Nadeem Malik**, NSUT Delhi
P3-26	*AI-Driven Wind Resource Modeling for Efficient Wind-to-Hydrogen System Design at Jaisalmer*, **Nagasree Keerthi Pujari**, IIT Hyderabad
P3-27	*Performance Enhancement of Type IV Hydrogen Tanks Using Expanded Graphite*, **Omar El Khatib**, Khalifa University
P3-28	*Bridging Science and Policy: A Bibliometric Study of Nutritional Food Security in India*, **Pallavi Muwania**, Delhi Technological University
P3-29	*Exploring MOF – Hydrocarbon Integration for Sustainable Adsorption Cooling: An Accelerated Approach using Bayesian Optimization and Monte Carlo Simulations*, **S Muthukrishnan**, IIT Kanpur
P3-30	*Towards Generalizable ML-Based Molecular Dynamics: Challenges in Simulating Complex Minerals and Cementitious Materials*, **Sajid Mannan**, IIT Delhi
P3-31	*CO_2 Hydrogenation utilizing Pd/SBA-15 Catalyst: Identifying Scaling Behavior to Optimize Selectivity for CO and CH_4 Production*, **Sanket Bhumare**, National Chemical Laboratory Pune
P3-32	*Study of Drying Behavior of Multiple Sizes of Orthodox Tea Particle and CO_2 Reduction in Solar Drying for Small Tea Growers*, **Shantanu Kumar**, IIT Delhi
P3-33	*Synthesis of Butyl Butyrate as a Sustainable Aviation Fuel Using V_2O_5-Supported Silicomolybdic Acid Catalyst*, **Shariq Farhan Elahi**, Curtin University, Australia and IIT (ISM) Dhanbad, India
P3-34	*High-κ Interface Engineering for Energy-Efficient Spin–Orbit Torque Memories: A Materials Pathway Toward Digital Sustainability*, **Shubham Bhatt**, IIT Delhi
P3-35	*Concerted Photo and Chemical Ageing of Microplastics and its Transport Behaviour in Saturated Soil*, **Namita Das**, BITS Pilani Dubai
P3-36	Bridging Financial Inclusion and Climate Action: Sustainable Pathways for Mobile Financial Services, **Anuj Mohan Sherry**, Ericsson India Private Limited
P3-37	*Smart Thermal Management of Subsurface Pipelines for Hydrogen and District Energy Systems*, **Arjun Satheesh**, IIT Delhi – Abu Dhabi
P3-38	*Multiphysics Heat Transfer in Underground Energy Pipelines: Soil Conduction, Radiative Losses, and Materials-Led Efficiency Gains*, **Arjun Satheesh**, IIT Delhi – Abu Dhabi