



# I-MAT 24

*Conference on  
Innovations in Materials Science  
&  
Workshop on Characterization Techniques*

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*24th – 27th April, 2024*

## *Poster Session*

*Organised by  
Institute Instrumentation Centre  
Indian Institute of Technology Roorkee*



Poster No	Presenter Name	Organization	Abstract Title
P-01	Nitesh Singh	Mahindra University, Hyderabad	Exploring the Impact of Growth Conditions on the Ferromagnetic Resonance of ZnFe <sub>2</sub> O <sub>4</sub> Thin Films
P-02	Sneha	School of Physical Sciences, Jawaharlal Nehru University, New Delhi	Structural and optical characterization of synthesized 2D MXene for H <sub>2</sub> gas sensing application
P-03	N Anitha	NIT Warangal	Bio-Inspired Supercapacitor Electrodes: Eucalyptus Seed-Derived Nitrogen Self-Doped Activated Carbon
P-04	Amita Dhadphale	Ramnarain ruia Autonomus college of Arts and Science, Mumbai	Crystal Kaleidoscope: Deciphering The Mysterious Forms of Gliclazide Potassium Salts
P-05	Priya Dhull	Shoolini University of Biotechnology and Management Sciences	Synergistic Photocatalytic Degradation of Victoria Blue Dye using a G-C <sub>3</sub> N <sub>4</sub> /FeVO <sub>4</sub> /AgBr Heterojunction Catalyst
P-06	Durvish Gautam	Chaudhary Charan Singh University Meerut Uttar Pradesh India	Palladium decorated zinc oxide nanorods thin film for NO <sub>2</sub> gas sensing application
P-07	Shital B. Sukale	Department of chemistry, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajnagar	Synthesis and characterization of alumina supported molybdosilicic acid (SiMo <sub>12</sub> /Al <sub>2</sub> O <sub>3</sub> ): Efficient solid acid catalyst for the synthesis of pyranopyrazole derivatives
P-08	Somdatta	IIT Roorkee	Effect of substrate temperature on wetting and other physical properties of sputter grown WO <sub>3</sub> thin films
P-09	Mohit Mudgal	IIT Kanpur	Study of Magneto-Transport Properties of axion insulator Mn [Sb] <sub>2n</sub> [Te] <sub>(3n+1)</sub> Family and Band Structure Study using ARPES
P-10	Niladri Mohan Das	UPES Dehradun	Synthesis Of Nanostructured Ag-Cu Alloy Thin Films By DC Magnetron Co-Sputtering
P-11	Priyanka Meena	Indian Institute of Technology, Kanpur	Exploring the Physical Properties and Electronic Band Structure of Rare-Earth-Based Intermetallic Compound RSiAl
P-12	Shamli Nikam	Department of chemistry, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajnagar	Synthesis and Characterization of Graphene Oxide Decorated MoO <sub>3</sub> Nanocomposite and Its Sensing Application for Detection of Folic Acid
P-13	Manjeet	IIT Roorkee	Exploring the Ferrite material for the Hydroelectric cell application
P-14	Souvik Guha	Jamia Millia Islamia	Doped Nano-SnO <sub>2</sub> Electrochemical Sensor for the Detection of Acetone as a Biomarker of Lung Cancer
P-15	Mohit Madaan	Indian Institute of Technology Roorkee	Investigation of internal coupling (FM/AFM) between magnetic sublattices in weakly ferromagnetic RFe <sub>0.5</sub> Cr <sub>0.5</sub> O <sub>3</sub> (R=Nd, Sm) ferromagnets: a magnetometry study
P-16	Sheetal Issar	Indian Institute of Technology Roorkee	Bi-metallic nitride-based high voltage on-chip micro supercapacitor for miniaturized energy storage application
P-17	Deepali Ramkrishna Surase	Department of chemistry, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajnagar	A Novel Electrochemical sensor based on Polypyrrole decorated Mn <sub>3</sub> O <sub>4</sub> Modified Electrode for Propyl Paraben detection.
P-18	Jinan Alhariry	Indian Institute of Technology Roorkee	Design, Synthesis and Physicochemical Characterization of Lysozyme stabilized Silver Nanocatalyst for degradation of Hazardous dyes
P-19	M. Rakshita	National Institute of Technology Warangal	Zinc Vanadate Phosphor Based Triboelectric Nanogenerator: A Novel Self-Powered Luminescent Device
P-20	Navaneeth M	NIT Warangal	Medical Waste Material-Inspired Triboelectric Nanogenerators for Sustainable Energy Harvesting and Self-Powered Sensors
P-21	Rohin verma	Delhi Technological University, New Delhi	Selection of Optimal Design of Bike Swing Arm through Generative Design
P-22	Payal Priyadarshini Pradhan	National Institute Of Technology Warangal	A Luminescent Breakthrough: Rare-Earth Ion-Doped Nanophosphors in the Detection of Latent Fingerprints
P-23	Shalu Yadav	Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi, Uttar Pradesh	Composition dependent variation in structural, morphological, optical and magnetic properties of biogenic CuO/NiO mixed oxides nanoparticles
P-24	Shruti Sharma	Dr. Harisingh Gour Vishwavidyalaya, Sagar M.P. 470003	Metallopeptide-inspired pyridine-bis-tyrosine peptide conjugate mediated facile room temperature synthesis of ultrafine solid mercury nanoparticles for plausible applications.
P-25	Nitesh Choudhary	IIT Roorkee	Evaluating the Electrochemical Performance of Modified Cellulose and Carbon Nanotubes Hybrids for Supercapacitor Applications
P-26	Jyoti Prakash Ray	Indian Institute Of Technology Guwahati	Mesoporous Carbon Nitride/Indium Vanadate-based Ternary Heterojunction for Pollutant Degradation: Synthesis, Performance Evaluation and Mechanism Elucidation
P-27	Ambedkar K. Verma	NIT Patna	Structural, Dielectric and Electrical properties of Sr-Substituted double perovskite La <sub>1.5</sub> Sr <sub>0.5</sub> CoMnO <sub>6</sub>
P-28	Arpita Rana	Banaras Hindu University, Varanasi	NCTO single-crystal : Synthesis, Magnetic, and Thermodynamic studies
P-29	Prachi	IIT Roorkee	Temperature dependent study of W/WS <sub>2</sub> Schottky Junction
P-30	Shraddha Singh	Forest Research Institute	chemical mechanical deconstruction of cellulosic biomass
P-31	Pramod Kumar	Indian Institute of Technology Roorkee	Unveiling the Energy Storage Mechanism of Reactively Sputtered Highly Crystalline MoO <sub>2</sub> Supercapacitor Electrode
P-32	Arun kumar Rachamalla	National Institute of Technology Warangal	Self-Assembly Approach to Fabricate Flexible Semiconductors Utilizing Amphiphilic N-Glycosyl Naphthalimides
P-33	Komal Poonia	Shoolini University	Adsorption-photocatalytic degradation of tetracycline hydrochloride over a facile co-precipitation synthesized oxygen deficient Bi <sub>4</sub> O <sub>5</sub> -5Br <sub>2</sub> /Co <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> nanocomposite supported on activated carbon
P-34	Shiwani Khokhar	Department of Chemistry, Kurukshetra university Kurukshetra	Nickel-organic Framework with Spherical Structure Fabricated by Facile Solvothermal Method for High-Performance Supercapacitor
P-35	Mamta Bulla	CCS Haryana Agricultural University Hisar	Electrochemical Assessment of PVA-Derived Gel Electrolyte for Vanadium Pentoxide Symmetric Supercapacitors

P-36	Anjali Prabhakar	Govind Ballabh Pant University of Agriculture and Technology, Pantangar	Investigation of the Effect of Annealing Temperature on Structural and Optical Properties of YMnO <sub>3</sub>
P-37	Kashish Tiwari	SPS, JNU	Fundamental study of Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene supernatant and powder synthesised via hydrothermal route
P-38	Deepa Xavier	Indian Institute of Technology Madras	Enhanced magnetoelectric effect at resonance in lead free laminate composite
P-39	Shivank Kalia	National Institute of Technology Hamirpur	Enhancement of magnetic properties of PrVO <sub>3</sub> thin films by 100 MeV irradiation
P-40	Sajal Shradha	Panjab University, Chandigarh	Enhanced Dielectric Properties of PVDF Polymer Nanocomposites by Incorporating MoS <sub>2</sub> nanosheets
P-41	Shreyan Ghosh	National Institute of Technology Durgapur	Highly Sensitive and Flexible Capacitive Pressure Sensor with PVDF Dielectric and Copper Electrode Fabricated on Kapton Substrate
P-42	Ashish Kumar	National Institute Of Technology , Hamirpur (H.P)	Synthesis and structural analysis of MoTe <sub>2</sub> nanostructures
P-43	Amena Salim	NIT Jaipur	Role of annealing temperature on SPR peak of silver embedded fullerene C <sub>60</sub> matrix
P-44	Abhishek Ukey	Indian Institute of Technology Madras	Multi-layered ferrite-based microwave absorbers for bolometer applications
P-45	Aarushi	CSIR-CSIO, Chandigarh	Tailored Microwave Absorption Properties of BiFeO <sub>3</sub> /Fly Ash Composite in GHz range
P-46	Arvind Kumar	Starex University, Gurugram	Room temperature H <sub>2</sub> S detection using porous silicon filled CuO-decorated MoS <sub>2</sub> nanocorals
P-47	Shalu Gupta	Central University of Haryana	N-rGO/g-C <sub>3</sub> N <sub>4</sub> based metal free photocatalyst with 2D/2D configuration as an effective solar driven photocatalyst
P-48	P Dasthagiri	IIT Tirupati	Experimental study of R134a sorption characteristics on different carbon-based materials for sorption cooling applications.
P-49	Sujay Munshi	Raiganj University	Study of the Structural, Optical, Dielectric and Antibacterial Properties of Pure and Cu-doped Transition Metal Oxide
P-50	Pawan Kumar	Chaudhary Charan Singh University Meerut Uttar Pradesh India	Synthesis and Characterization of Highly Crystalline Vertically Aligned WSe <sub>2</sub> Mulberry Nanostructured Thin Film for NO <sub>2</sub> Gas Sensor
P-51	Eliya Yammala	Indian Institute of Technology Madras	Broad room temperature electrocaloric effect in vacancies induced disordered lead-free rare-earth doped BaTiO <sub>3</sub> based system
P-52	Kulsuma Begum	Rajiv Gandhi University	Optical and electrochemical analysis of MXene/polymer nanocomposite
P-53	Romy Garg	INST	Wearable and Stretchable high performance triboelectric nanogenerators
P-54	Vishnu Saraswat	Banaras Hindu University, Varanasi	High-energy radiation shielding characteristics of SeTeSnM (M = Ag, Bi, Cd, Zn) chalcogenide glasses (STSM ChGs)
P-55	Rishabh	Dr B R Ambedkar National Institute of Technology Jalandhar	Bio-derived fluorescent N-doped carbon quantum dots for highly selective detection of Fe <sup>3+</sup> metal ions
P-56	Shikha Sharma	Dr B R Ambedkar National Institute of Technology Jalandhar	Chicken eggshell derived nanocomposite of calcium oxide incorporated in nickel oxide for efficient degradation of organic pollutants
P-57	Anil Kumar	Jawaharlal Nehru University, New Delhi	Frequency and temperature dependent electrical conductivity and impedance studies of Ba <sub>0.75</sub> Sr <sub>0.25</sub> Ti <sub>1-x</sub> Sn <sub>x</sub> O <sub>3</sub> ceramics
P-58	Deepak Tyagi	Department of Microbiology, School of Life Sciences, Dr. Bhimrao Ambedkar University Agra	Tracing the Footprints of Extended Spectrum $\beta$ -Lactamase Bacteria: Unveiling Their Identity and Traits within Municipal Water Networks
P-59	Anjali Dhariwal	Teerthanker Mahaveer University	Cyclic Voltammetry Study of Hydrothermally Synthesized ZnO-MoS <sub>2</sub> Nano-Hybrid
P-60	Pragya Dixit	IIT Kanpur	Thermoelectric Composites with MXene for Clean Energy Generation
P-61	Utkarsh Mishra	IIT Roorkee	Evaluating the Sustainability and Energy Efficiency of Optimized Kraft Pulping for Sugarcane Bagasse
P-62	Farheen Anjum	IIT Kanpur	Band-structure modification leads to enhanced thermoelectric performance of Bi <sub>2</sub> S <sub>3</sub> by CaCl <sub>2</sub> doping
P-63	Anjaly Babu	National Institute of Technology, Warangal	Metal-organic framework based triboelectric nanogenerator for smart parking
P-64	Seema Chauhan	IIT Roorkee	Gold Nanoparticles-Reduced graphene oxide-Prussian blue based ternary nanocomposite as Non-enzymatic Electrochemical Sensor for Efficient Hydrogen Peroxide detection
P-65	Akshay Tomar	IIT Roorkee	Sodium Molybdate as An Additive to Enhance the Performance of Mose <sub>2</sub> Symmetric Supercapacitors in An Aqueous Electrolyte
P-66	Jijo George	Cochin University of science and Technology	Nanocubes and Nanocages: Advancing SERS for Biomedical Applications
P-67	Sonika Kodan	IIT Roorkee	Vertically Aligned MoSe <sub>2</sub> -WS <sub>2</sub> Nanoworms Heterojunction towards Room Temperature NO <sub>2</sub> Gas Sensors
P-68	Sonu	Teerthanker Mahaveer University, Moradabad	Halide Perovskite materials for Supercapacitor Applications
P-69	Sanjukta Mukherjee	IIT Kanpur	Thermoelectric Properties of BaTiS <sub>3</sub> Chalcogenide perovskite exhibiting ultra-low thermal conductivity
P-70	Bhavesh kumar	Lalit Narayan Mithila University, Darbhanga, Bihar, India	Synthesis and characterization of undoped and Bi doped polycrystalline Dy <sub>2</sub> CoMnO <sub>6</sub> compound
P-71	K A K Durga Prasad	National Institute of Technology, Warangal	Facile and Cost-Effective Approach for the Development of Copper doped Zinc Sulfide Long Afterglow Phosphor: A Substitute in the Dark
P-72	Krishna Anand	Maharishi University of Information Technology , Lucknow	Analysis of Polycyclic Aromatic Hydrocarbon (PAH) Using Diffusion - Ordered NMR Spectroscopy
P-73	Jyoti	Thapar Institute of Engineering and Technology	Study of phase formation of fabrication oh Cu <sub>2</sub> BaSnS <sub>4</sub> thin films by solution approach with Ba/Sn ratio varied
P-74	Mitva Choudhary	UPES	Exploring Hydrogen Absorption Properties of Palladium-Graphene Oxide (Pd-GO) thin films
P-75	Arpan Kayastha	IIT Roorkee	Revolutionizing wastewater bioremediation with a biofilter for plasticizer extraction

P-76	Mansi Verma	Department of Microbiology, School of Life Sciences, Dr. Bhimrao Ambedkar University, Agra	Biodegradation of LDPE ( Low Density Polyethylene) by Fungi Aspergillus niger Isolated From Soil Deposits.
P-77	Aramanda Prasad	NIT Warangal	Synthesis and characterization of Ag <sub>2</sub> O doped bioactive glass nanoparticles for bone tissue regeneration by modified stober method
P-78	Ananya Bansal	Indian Institute of Technology Roorkee	One step Fabrication and optimization of Lithium Cobalt Oxide for Thin Film Lithium-Ion Batteries
P-79	Pankaj Kumar	Teerthanker Mahaveer University	Substrate Dependent Cold Field Emission from Zinc Oxide Nanorod Synthesized by Wet Chemical Route
P-80	Pooja Nehra	Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Sonipat	Rare earth doped tungsten trioxide as a photocatalyst for the abatement of dye pollutants in water
P-81	Salaman Ahamad, Shaista Fatima	IIT Roorkee	Synthesis of PEI-Based Screen Printable Conductive Ink Empowered by the Incorporation of Copper Nanoparticles for the Application of Flexible Electronic.
P-82	Adarsh Kushwaha	National Institute of Technology Rourkela	Effect of ultrasonic shot peening (USSP) with varying parameters on pure Ni plates
P-83	Shruti Sharma	Jaypee Institute of Information Technology, Noida, Uttar Pradesh	Turn on-off switching of green synthesized carbon quantum dots for selective sensing of Zn <sup>2+</sup> and Fe <sup>3+</sup> ions
P-84	Mohammad Farhan	Teerthanker Mahaveer University Moradabad	Sunlight-induced enhanced photocatalytic degradation of Rhodamine B dye in an aqueous medium by Z-scheme Sn <sub>3</sub> O <sub>4</sub> /BiVO <sub>4</sub> photocatalysts
P-85	Yogendra Kumar	NIT Warangal	Regioselective Synthesis of 4-Arylamino-1,2-Naphthoquinones in Eutectogel as a Confined Reaction Media using LED Light
P-86	Vishal Kumar	Indian Institute of Technology Varanasi	Topological Hall Effect in (Mn <sub>1-x</sub> Fe <sub>x</sub> ) <sub>3</sub> .25Ge (x = 0.4) Hexagonal Magnet
P-87	Preeti Joshi	Indira Gandhi Delhi Technical University for Women, New Delhi	Sunlight mediated removal of toxic pollutants from Yamuna waste water using efficient nano TeO <sub>2</sub> -ZnO nanocomposites
P-88	Saumya	Indira Gandhi Delhi Technical University for Women, New Delhi	Synergistic Nanocarrier Design: pH and Ultrasound Responsive Curcumin Delivery for Enhanced Cancer Therapy
P-89	Rajesh Kumar	Mahindra University, Hyderabad	Investigation of Metal halide Cu-Ag-I alloys coated on carbon cloth as a highly efficient adsorbent for dye removal
P-90	Mohit Kumar	Delhi Technological University, New Delhi	Synthesis of g-C <sub>3</sub> N <sub>4</sub> -ZnSnO <sub>3</sub> nanocomposites with enhanced sensing performance towards Acetone vapor
P-91	Sunil Kumar	CCS Haryana Agricultural University Hisar	Effect of Solvents on Hydrothermally Synthesized MoS <sub>2</sub> Nanosheet for Energy Storage Devices
P-92	Debasmita Das	IIT Madras	Synthesis, Characteristics, and properties of Bimetallic Solid Solution MAX phase: VCrAlC
P-93	Ravinder Kumar	Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala	Oxidative Rearrangement via 1,2-Aryl Migration in Alkenes: New Precursors for Synthesis of 4,5-Diarylisoxazoles, 1,4,5-Triarylpyrazoles and 4,5-Diarylpyrimidin-2- amines as Optoelectronic Materials
P-94	Meghana Goel	Thapar Institute of Engineering and Technology, Patiala, Punjab	Exploring the potential of nanomaterials: Sulphur doped and Bulk Graphitic-carbon nitride, analysing their characteristics and photocatalytic properties.
P-95	Aakanksha Jain	IIT Roorkee	Optimizing Mechanical Properties of Himalayan Sheep Wool/Epoxy Composites through Weaving Patterns
P-96	Rohini Suradkar	Department of chemistry, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajanagar	Electronic study of Electron donating-withdrawing groups of Ortho- substituted Benzaldehyde using Density Functional Theory
P-97	Kishan Kumar Jaiswal	IIT Roorkee	Green Solvent- Based Extraction and Characterization of Regenerated Cellulose from Arca Fiber Waste Biomass
P-98	Seema Chauhan	IIT Roorkee	Gold Nanoparticles-Reduced graphene oxide-Prussian blue based ternary nanocomposite as Non-enzymatic Electrochemical Sensor for Efficient Hydrogen Peroxide detection
P-99	Sunidhi	Panjab University, Chandigarh	Impact of swift heavy ion (200 MeV Ag <sup>15+</sup> ) irradiations on vibrational properties of epitaxial Lanthanum Nickelate thin film
P-100	Shweta Choudhary	IIT Roorkee	Green synthesis of nanometal impregnated biomass – Nanometal characterization and assessment of antiviral potential
P-101	Shalja Verma	IIT Roorkee	X-Ray Crystallography-Based Structure Determination Of Phthalate Ester Degrading Esterase
P-102	Vishakha Singh	IIT Roorkee	Designing antibody fragments based on structural insights-An innovative approach against SARS-CoV-2
P-103	Mandar Bhutkar	IIT Roorkee	Molecular insights into the mechanism of RNA methyltransferase inhibition in Dengue and Chikungunya viruses
P-104	Shubham Aggarwal	IIT Roorkee	Molecular insights into the catalytic mechanism of plasticizer degradation by a Monoethylhexyl phthalate hydrolase
P-105	Ishani Mishra	IIT Roorkee	An Engineered Enzyme to Degrade Plasticizers and its Isomers
P-106	Kuldeep Jangid	IIT Roorkee	Targeting shikimate pathway towards the development of potential inhibitor against Providencia alcalifaciens
P-107	Preeti Dhaka	IIT Roorkee	Unveiling the Antiviral Drug Molecules Targeting SARS-CoV-2 Nucleocapsid Protein