



## International Conference on Hydrogen Energy and Sustainability (HES -2025), 10-12<sup>th</sup> October 2025

IIT (BHU) Varanasi

### LIST OF POSTER PRESENTATION

Name	Affiliation	Title	Abstract ID
Anjali Dhariwal	Teerthanker Mahaveer University	Hydrothermally Synthesized mos2-Graphene Composite: A Potential Electrocatalyst for Hydrogen Generation through Water Splitting	PHP-1
Kamalika Bandyopadhyay	IIT, Jammu	Pt (II)-terpyridyl Complexes for Photocatalytic Hydrogen Production	PHP-2
Ashish Ranjan	IITG	Selective Biomass Source for Hydrogen Production Through Its Catalytic Pyrolysis.	PHP-3
Anjali Singh	IIT BHU	Single stage hybrid by biohydrogen production using sugar industry cellulosic waste using mixed microbial community	PHP-4
Anjali Singh	IIT BHU	Impact of substrate and its characterization on fermentative biohydrogen production enhancement	PHP-5
Sundararajaperumal P	Department of Physics, Thiagarajar College of Engineering Madurai.	Mo-doped coal2o4 Nano Structures for Improved Oxygen Evolution Reaction; Structural, Morphological and Electrocatalytic Analysis	PHP-6
Karuna Chauhan	Teerthanker Mahavier University, Moradabad	An Overview of Current Landscape of Graphitic Carbon Nitride Photocatalysts as Hydrogen Generator	PHP-7
Delvin George	Vellore Institute of Technology (VIT), Vellore	Influence of Metal Impurities on Ni-based Layered Double Hydroxide Electrocatalyst for Alkaline Oxygen Evolution Reaction	PHP-8
Swane S	IIT BHU	Scale Up of Methanol Based Membrane Reformer	PHP-9



Bhuvanesh Kumar R	Thiagarajar College of Engineering	Synergistic Integration of Zinc-doped Nickel Metal-Organic Frameworks and Multi-Walled Carbon Nanotubes for Enhanced Electrocatalytic Performance in the Production of Green Hydrogen	PHP-10
Himanshu .	Indian Institute of Technology Patna	Advances and Challenges in Electrocatalytic and Photoelectrocatalytic Water Splitting: Toward Efficient and Scalable Hydrogen Generation	PHP-11
Uttara Sushant Shelatkar	BITS Pilani	Effect of Morphology of cds on the Photocatalytic Hydrogen Evolution by Water Splitting	PHP-12
Mr. Shubham Kumar Singh	IIT BHU	Solvothermal Synthesis of Cobalt-Based MOF as Cathode for PEM Electrolyzer in Green Hydrogen Production	PHP-13
Binod Kumar	IIT, Jammu	Design and techno-economic analysis of biogas based SOFC cogeneration system for data center	PHP-14
Ashutosh Kumar Tiwari	Centre for Nanoscience & Technology, Veer Bahadur Singh Purvanchal University	Hematite Ellipsotubes Decorated on Reduced Graphene Oxide (rgo) for Superior Photoelectrochemical and Electrocatalytic Activity and Enhanced Supercapacitance	PHP-15
Abdur Raheem	IIT(ISM) DHANBAD	Fabrication of N-doped graphene quantum dot/nial layered double hydroxide/tio2 heterojunction for improved photocatalytic hydrogen generation	PHP-16
Shruti Raut	IIT(BHU)	Isolation and Characterization of a Novel Alcaligenes ammonioxydans Strain from Sewage Sludge and Its AI-Optimized Biohydrogen Production from Sugarcane Bagasse Using ANN-GA, RSM, and Python Synergy	PHP-17
Disha Maheshbhai Bambhaniya	Gujarat University	Modulating HER Activity in Janus zros Monolayers through Pt Decoration: A DFT Study	PHP-18



Abhishek Anand	IIT BHU	Single-step intensification with SMR and Pd membrane for pure hydrogen separation in a membrane reformer	PHP-19
Dipti Bhatt	Institute	Surface engineering of perovskite oxides as a promotional approach for water-oxidation	PHP-20
Mr. SAMEER KANJANI	IIT BHU	Catalytic pyrolysis of metal salt-pretreated woody biomass in a fluidized bed reactor: enhancement of hydrogen production and parameter optimization	PHP-21
Ms. Osheen Negi	IIT BHU	Catalytic pyrolysis of metal salt-pretreated woody biomass in a fluidized bed reactor: enhancement of hydrogen production and parameter optimization	PHP-22
Ms. Ankita Tripathi	IIT BHU	Catalytic pyrolysis of metal salt-pretreated woody biomass in a fluidized bed reactor: enhancement of hydrogen production and parameter optimization	PHP-23
Suresh V. Chaudhary	Gujarat University	Photocatalytic activity on functionalised BP monolayer: A computational insight	PHP-24
Sachin Kumar Vishwakarma	IIT BHU	Experimental Investigation of Circular Baffles Integrated Membrane SEPERATOR for Ultra-Pure Hydrogen Production Using Methanol Steam Reforming	PHP-25
Aadithya R Nair	Amrita Vishwa Vidyapeetham	Biohydrogen production: An alternative fuel from waste biomass	PHP-26
Susheel Kumar Singh	IIT BHU	Utilization of saccharum munja biomass for green hydrogen prodcuton via microbial fermnetation	PHP-27
Deepti Chauhan	Indian Institute of Technology Patna	Photocatalytic Water Splitting for Sustainable Hydrogen: Materials, Reactors, and Scale-Up Pathways	PHP-28
Anusha Tripathi	Indian Institute of Science	Modelling alkaline water electrolyzers through temperature dependent ionic mobilities	PHP-29



Anamika Maurya	IIT BHU	Catalytic Steam Reforming of Heavy Oil for Blue Hydrogen Production	PHP-30
Anamika Maurya	IIT BHU	Study on Cu-based catalysts for CO <sub>2</sub> Hydrogenation to production of methanol	PCC-31
Pretika Pa	Thiagarajar College of Engineering	Synthesis and Evaluation of Titanium Vanadate (TiVO <sub>4</sub> ) Thin Films via RF Sputtering for Water Splitting Applications	PHP-32
Pragya Mishra	University of Lucknow	Modelling of Serpentinization Reactions for Geological Hydrogen Production Using Excel	PHP-33
Mr. Shubham Pal	IIT BHU	Investigation of Effect of Ce/Zr Molar Ratios and Morphology of Ce <sub>x</sub> Zr <sub>1-x</sub> O <sub>2</sub> Supported Ni Catalysts in Steam Reforming of Toluene for Hydrogen Production.	PHP-34
Santosh Kumar Singh	IIT(ISM) DHANBAD	Dynamic Simulation and Techno-Economic Analysis of Solar-Powered Alkaline Water Electrolysis System for Decentralized Hydrogen Production	PHP-35
Gunjan Sharma	IMS GHAZIABAD UCC	Microbial Pathways to a Greener Future: A Review on Biohydrogen Production	PHP-36
Vandana Mishra	Thapar institute of engineering and technology	Hydrothermal synthesis of NiO@BSG Nanocomposite for OER and HER	PHP-37
Vandana Mishra	Thapar institute of engineering and technology	Hydrogen Synthesis of NiO@BSG Nanocomposite for OER and HER	PHP-38
Gautam Mishra	IIT(BHU)	Development of 7% Ni steel for the storage and transportation of liquefied natural gas	PHS-39
Smruti Ranjan Parida	IIT(ISM) DHANBAD	Adsorption of H <sub>2</sub> molecules in Sc-decorated [4] cycloparaphenylene: A computational insight for hydrogen storage	PHS-40
Nikhil M. Solanki	Gujarat University	Hydrogen storage performance of Alkali-metals functionalized graphene monolayer: first principles calculations	PHS-41



Devanshi Srivastava	Harcourt Butler Technical University	Modelling, Simulation and Optimization of Hydrogen Blend Natural Gas Pipeline Networks	PHT-42
Ankur Kumar	IIT BHU	Simulation of Forced Hydrogen Jet Combustion in Crossflow: Mechanisms of Flame Stabilization and Mixing Enhancement	PHA-43
Danavath Balu	BITS Pilani	Investigation of Hydrogen Gas Permeability of Polyurethane Free-Standing Films to Mitigating Embrittlement in Steel Components of Hydrogen Infrastructure	PHT-44
Sumit Jha	IIT BHU	Hydrogen Embrittlement in Micro alloyed Steels: Mechanistic Insights into Precipitate Trapping and Microstructural Effects	PHT-45
Neelesh Srivastava	IIT BHU	Thermo-catalytic conversion of methane into ethylene using Li/mgo catalyst	PWE-46
Indra Mohan	IIT(ISM) Dhanbad	Utilization of waste biomass seeds and LDPE to produce liquid fuel for CI Engines	PWE-47
Dikshita Garg	IIT Delhi	Probing Hydroxylamine Pathway of Electrocatalytic Nitrate Reduction to Ammonia on Iron-oxy-hydroxide Surface through In-situ and Labelling Studies	PWE-48
Belal Ahamad	IIT BHU	Portland cement and ZSM-5 mixture as a catalyst to produce upgraded fuel oil from the pyrolysis of waste extended polystyrene	PWE-49
Belal Ahamad	IIT BHU	Studies on mixture of catalyst to produce upgraded fuel oil from the pyrolysis of wepsis	PWE-50
Pankaj Parmar	IIT Kharagpur	Biomass-to-Bio-Oil via Pyrolysis: A Circular Strategy for Renewable Fuel Recovery	PWE-51



Sudha Suman	IIT BHU	Enhanced degradation of metformin in a dual chamber microbial fuel cell using anaerobic microbial consortia	PWE-52
Dona Mazumder	Assam University	Comparative investigation of anode engineering for optimized electrochemical activity and petroleum hydrocarbon degradation in soil microbes	PWE-53
Mr. DHARMENDER KUMAR	IIT BHU	Catalytic Pyrolysis of Waste low vehicle Tire Using Calcined Red Clay: Influence of Calcination Conditions on Product Yield and Energy Content	PWE-54
Rashi Jain	Indian Institute of Technology Kanpur	S-Scheme mediated $\text{Fe}_2\text{S}_4/\text{C}_3\text{N}_4$ Photocatalyst for Simultaneous Nitrate Reduction and Benzyl Alcohol Oxidation	PWE-55
Karanveer Kaur	Thapar Institute of Engineering and Technology	Synthesis of Biomass-based Bifunctional Electrocatalysts for Water Splitting	PWE-56
Aalap Patel	university	Production of biodiesel using sugarcane derived ethanol	PWE-57
Aditya Kumar	IIT BHU	Effect of calcination temperature on $\text{Ni}/\text{MgAl}_2\text{O}_4$ catalyst for $\text{CO}_2$ methanation	PCC-58
Prateek Shukla	IIT Delhi	Fe-Co MOF@ Ni-Co LDH as an efficient catalyst for electrochemical oxidation of biomass derived 5-hydroxymethylfurfural in 3d printed electrolyser	PCC-59
Aayush Sinha	Guru Gobind Singh Indraprastha University	Machine Learning-Augmented Technical Screening for $\text{CO}_2$ Storage Site Selection in Clastic Porous System	PCC-60
Aayush Sinha	Guru Gobind Singh Indraprastha University	Machine learning augmented Technical Screening for Subsurface Hydrogen Storage in Porous Geological Formations	PCC-61
Pratima Maurya	IIT BHU	Development and Characterisation of mono and bimetallic MOF-74 for efficient $\text{CO}_2$ capture	PCC-62



Pratibha Sharma	Indian Institute of Technology Kanpur	A Facile Process to Synthesize Porous Adsorbents from Clays for CO <sub>2</sub> Capture	PCC-63
Himanshu Chauhan	IIT BHU	Mechanistic insight into amine linked 2D COF formation from amorphous Precursor to crystalline framework for CO <sub>2</sub> adsorption	PCC-64
Aamir Suhail Khan	Indian Institute of Technology, Ropar	Transforming CO <sub>2</sub> into Methane: Thermo-catalytic Conversion for Sustainable Fuels and Chemicals	PCC-65
Raghvendra Pratap Yadav	IIT(BHU)	An approach for the hydrothermal synthesis of SAPO-34 and its use in purifying CH <sub>4</sub> from N <sub>2</sub> -CH <sub>4</sub> mixtures.	PFT-66
Tripti Kundu	IIT(ISM) Dhanbad	Molecular insights into xylan-cellulose interactions to overcome biomass recalcitrance towards sustainable biofuel production	PFT-67
Sanjeet Shrivastava	IIT BHU	Continuous Flow Synthesis of Silica Microwires for Advanced Pickering Emulsion Applications	PFT-68
Pratibha Patel	Centre For Nanoscience & Technology, Rbips, Vbspu Jaunpur	TMD - mose2 Nanosheet for Simultaneous Determination of Dual Analyte via Electrochemical Biosensor	PFT-69
Pratibha Patel	Centre For Nanoscience & Technology, Rbips, Vbspu Jaunpur	Dual-Analyte Electrochemical Biosensors based on mose2 Nanosheets	PFT-70
Rajanikant Choudhary	IIT(BHU)	Reduction and kinetic behaviour of premixed lean-grade manganese/iron ores during pre-reduction with hydrogen gas.	PFT-71
Shyam Sunder Rao	IIT(BHU)	Continuous Direct Conversion of Methane to Methanol over Bimetallic Fe-Cu-ZSM-5 Catalyst	PRI-72





Ankit Joshi	IIT(ISM) Dhanbad	Conformational Dynamics of O3-Acetylated Xylans on Cellulose Surfaces	PRI-73
Khitish Mohapatra	NIT Rourkela	Sustainable catalysis: methane oxidation over non-noble metal supported catalysts	PMS-74
Bhargavkumar Kanubhai Darji	Gujarat University	Computational study of Ge3N monolayer as an emerging anode material for Li-ion batteries	PMS-75
Vardan Popli	IIT(BHU)	Uncovering Degradation Pathways in High-energy NMC811 Electrodes – A Physics- based Predictive Model for Tropical e-Mobility Applications	PMS-76
Saswata Dhar	Defence Institute of Advanced Technology	Collective Suppression Effect of Hydrogen-Air Mixture with CO <sub>2</sub> and Propene	PSS-77
Sujeet Kumar Sahu	IIT Kharagpur	Integration of Hydrothermal Carbonization and Aqueous Phase Reforming for Hydrogen and Hydrochar Production from Sewage Sludge using Aspen Plus	PHP-78