



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

## DAY-1 Friday, 10 October 2025

Venue	DEV & VARDHANA GOSWAMI LECTURE COMPLEX, IIT BHU VARANASI	Venue
8:00-9:00	Registration and Breakfast	8:00-9:00
9:00-9:45	Inauguration Chief Guest: Prof. Suddhasatwa Basu, IIT Delhi Venue: D&V 1A	9:00-9:45
9:00-9:05	Dignitaries on Dias	9:00-9:05
9:05-9:10	Garlanding on Statue of Malviya Ji followed by Lamp Lightening	9:05-9:10
9:10-9:15	Kulgeet	9:10-9:15
9:15-9:18	Welcome Address by Convener HES 2025	9:15-9:18
9:18-9:21	Welcome Address by Prof. M.K. Mondal, Head, Dept of Chemical Engineering and Technology	9:18-9:21
9:21-9:24	Address by Dean R&D Prof. Rajesh Kumar	9:21-9:24



9:24-9:30	Address by Director IIT BHU Prof. Amit Patra				9:24-9:30
9:30-9:40	Address by Prof. Suddhasatwa Basu, IIT Delhi				9:30-9:40
9:40-9:45	Conference Opening				9:40-9:45
9:45-10:15	High Tea/Poster				9:45-10:15
10:15-11:00	Plenary Talk 1: Chief Guest: Prof. Suddhasatwa Basu IIT Delhi Session Chair: Prof P.K. Mishra				10:15-11:00
Venue	D&V 2C		D&V 2D		Venue
11:00-13:30	Session 1: Hydrogen Production Session Chair: Prof. Raveendra Gundlapalli, IIT BHU Prof. Subrata Panda, IIT BHU		Session 2: Hydrogen Application Session Chair: Prof. Hiralal Pramanik, IIT BHU Prof. Jitendra Sangwai, IIT Madras		11:00-13:25
	Speaker	Title	Speaker	Title	
11:00-11:25	Dr. Ranjith Krishna Pai DST, New Delhi (Keynote)	Department of Science and Technology- Hydrogen and Fuel cell Program	Dr. Anirudh Gautam Center for Railway Research (Keynote)	Hydrogen Applications in Indian Railways	11:00-11:25
11:25-11:50	Prof. Arvind Kumar Chandiran IIT Madras (Keynote)	Halide Perovskites for Solar Water Splitting	Mr. Sidharth Mayur h2e Power (Keynote)	Fuel Cell	11:25-11:50



<b>11:50-12:10</b>	<b>Prof. Kumud Malika Tripathi</b> IIT Jodhpur (Invited)	Photocatalytic Hydrogen Evolution from Diesel Soot Derived Carbon Nano Onions: A Circular Path to Sustainable Energy	<b>Mr. Om Prakash Verma</b> Prism Johnson Limited-Cement Division (Keynote)	Scope of Hydrogen Usage in the Cement Industry	<b>11:50-12:15</b>
<b>12:10-12:20</b>	<b>Prof. Loveleen Kaur Brar</b> (TIET, Patiala)	Synthesis of TaO/MoO at C <sub>3</sub> N <sub>4</sub> Electrocatalysts for Water Splitting	<b>Prof. Umamaheswarrao P</b> (Bapatla Engineering College)	Performance and Emissions Optimization of a CI Engine Using RSM and Machine Learning Models using Hydrogen-Enriched Sesame Biodiesel blends	<b>12:15-12:25</b>
<b>12:20-12:30</b>	<b>Dr. Santosh Kumar Singh</b> (IIT (ISM) Dhanbad)	Assessment and optimization of solar-driven organic Rankine cycle for sustainable hydrogen production	<b>Dr. Priyanshu</b> (IIT Jammu)	Fixed-Wing UAV Integrated with a Hydrogen Fuel Cell to Enhance Long-Endurance and Sustainable Flight	<b>12:25-12:35</b>
<b>12:30-12:40</b>	<b>Dr. Soumendra Kumar Das</b> (IIT (ISM) Dhanbad)	Efficient Prediction of Band Gap and Band Edge Position in Pure and Substituted C <sub>2</sub> N Monolayer for Photocatalytic Water Splitting Using Different Semilocal Meta-GGA Functionals	<b>Manvendra Kumar</b> (Defence Institute of Advanced Technology, Pune)	PLIF-Based Diagnostics of CO <sub>2</sub> and CF <sub>4</sub> Suppression Mechanisms in Hydrogen–Methane Flames	<b>12:35-12:45</b>
<b>12:40-12:50</b>	<b>Himanshu Asati</b> (IIT Jodhpur)	Visible Light Responsive Carbon Nano Onions-MoS <sub>2</sub> Heterostructures for Green Hydrogen Production	<b>Ankur Kumar</b> (IIT BHU)	Numerical Study of Helium Jet in Crossflow Under Active Forcing: Optimizing Penetration and Mixing	<b>12:45-12:55</b>



12:50-13:00	<b>Dr. Silviya R</b> (Jain University)	N-Doped Carbon Supported Co-W Phospho-Boride Electrocatalyst for Efficient Hydrogen Evolution in Alkaline Seawater	<b>Anbumani P</b> (BITS Pilani)	Degradation Signature Analysis of PEMFCs using Data-Driven Techniques for Hydrogen-Powered Vehicles	12:55-13:05
13:00-13:10	<b>Ajeet Kumar</b> (IIT Kanpur)	g-C <sub>3</sub> N <sub>4</sub> -supported ASnO <sub>3</sub> (A = Fe, Ni) perovskite-based dual S-scheme heterostructure: Efficient hydrogen evolution via photocatalytic water splitting	<b>Arjun Singh Kachhawa</b> (Jai Narain Vyas University, Jodhpur)	Photocatalytic Water Splitting Under Visible Light Using B, N-Doped Functionalized Graphene Sheets	13:05-13:15
13:10-13:20	<b>Apoorva B C</b> (CHRIST University, Bangalore)	Alkaline Urea Splitting for Green Hydrogen production with Cobalt Sulfo-Boride MOF Electrocatalyst	<b>Rajanikant Choudhari</b> (IIT BHU)	Reduction and kinetic behaviour of premixed lean-grade manganese/iron ores during pre-reduction with hydrogen gas.	13:15-13:25
13:20-13:30	<b>Anup Mahata</b> (IIT Delhi)	Poly-phosphamide driven proton relay for membrane fabrication and electrocatalytic proton reduction			
13:30-14:30	<b>Lunch Break</b>				13:25-14:30
<b>Venue</b>	<b>D&amp;V 2C</b>		<b>D&amp;V 2D</b>		<b>Venue</b>
14:30-16:30	<b>Session 3: Hydrogen Production</b> <b>Session Chair: Prof. Tarak Mandal, IIT Ropar</b> <b>Prof. Vijay Shinde, IIT BHU</b>		<b>Session 4: CO<sub>2</sub> Utilization</b> <b>Session Chair: Prof. Swapna Rabha, IIT Madras</b> <b>Prof. Sanjay Katheria, IIT BHU</b>		14:30-16:30
	<b>Speaker</b>	<b>Title</b>	<b>Speaker</b>	<b>Title</b>	



14:30-14:55	<b>Dr. Sujay Karmakar</b> CGM NETRA, NTPC (Keynote)	Hydrogen Energy in Power Industry	<b>Dr. Vaibhav Pandey</b> NTPC (Invited)	Renewable Carbon to Jet Fuel: Scalable Pathways for Aviation Decarbonization	14:30-14:50
14:55-15:20	<b>Dr. Pramod Kumar</b> HPCL Bengaluru (Keynote)	Turquoise Hydrogen: A technology for Hydrogen Production with no CO <sub>2</sub> emission	<b>Dr. Neha Antil</b> Max Planck Institute CEC, Germany (Invited)	Ruthenium Nanoparticles Immobilized on Water-Stable Carbon-Based Supported Ionic Liquid Phases for CO <sub>2</sub> Hydrogenation to Formates	14:50-15:10
15:20-15:40	<b>Prof. Koustuv Ray</b> IIT Kharagpur (Invited)	Ni <sub>1-x</sub> Co <sub>x</sub> alloy catalyst for hydrogen production from hydrocarbon cracking and oxygenates reforming	<b>Prof. Prateek Khatri</b> NIT Rourkela (Invited)	Non-noble metal supported catalysts for methane oxidation under oxygen-rich conditions	15:10-15:30
15:40-15:50	<b>Dr. Thillai Sivakumar Natarajan</b> (CSIR-Central Leather Research Institute)	Catalysts-Driven Hydrogen Production from Aluminium-Water Systems: Reaction Mechanism and Kinetic Perspectives	<b>Prasenjit Barman</b> (Assam Energy Institute, Sivasagar, Assam)	Enhancement of Performance Parameters and Control of Emission Characteristics of a Hydrogen Dual Fuel Diesel Engine	15:30-15:40
15:50-16:00	<b>Dr. Keshav Kumar</b> (IIT Guwahati)	Comparative Study of Traditional Reformer, Membrane Reformer, and Double Stage Membrane Reformer for Enhanced Hydrogen Production Using Methanol Steam Reforming	<b>Garima</b> (IIT Kanpur)	Effect of Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> , TiO <sub>2</sub> , and SiO <sub>2</sub> - Al <sub>2</sub> O <sub>3</sub> supports on the Ni catalyst for CO <sub>2</sub> methanation	15:40-15:50
16:00-16:10	<b>Aakash Rajpoot</b> IIT (ISM) Dhanbad	Turquoise Hydrogen and Carbon Nanotube Production via Catalytic Methane Decomposition	<b>Jenish S</b> (IIT Jammu)	Comparison of PSA and TSA for the Separation of CO <sub>2</sub> - N <sub>2</sub> mixtures by Computational	15:50-16:00



		over Fe-Co-Zn/ $\gamma$ -Al <sub>2</sub> O <sub>3</sub> Nanocatalyst		and Experimental Investigations	
<b>16:10-16:20</b>	<b>Sachin Kumar Sharma</b> (IIT Guwahati)	Structurally Tuned Ni-Fe-LDH/CNT Electrocatalyst for Efficient Hydrogen Evolution	<b>Rajvikram Singh</b> (IIT Kanpur)	Optimization of a catalytic system for RWGS: Influence of active metal, support and calcination temperature	<b>16:00-16:10</b>
<b>16:20-16:30</b>	<b>Bhavtosh Pandey</b> (HBTU)	Hydrogen Policy Landscape and Energy Management Architecture in India: Prospects, Complexities, and The National Green Hydrogen Mission	<b>Lavanya Yalagandula</b> (BITS Pilani)	Dual-functional Catalyst for Efficient CO <sub>2</sub> Conversion into Value-added Products	<b>16:10-16:20</b>
			<b>Rajeev Ranjan</b> (IIT Roorkee)	Role of catalyst supports in enhancing selective hydrogenation of CO <sub>2</sub> to formic acid over Ni-based catalysts	<b>16:20-16:30</b>
	<b>Venue: D&amp;V 1A</b>				
<b>16:40-17:25</b>	<b>Plenary Talk 2: Prof. R Sonde, BITS Goa and IIT Delhi</b> <b>Science - Speed - Safety - Scale to realise hydrogen economy for India. Sharing of Jodhpur hydrogen valley experience so far</b> <b>Session Chair: Prof. R.S. Singh, IIT BHU</b>				<b>16:40-17:25</b>
<b>17:25-18:30</b>	<b>High Tea/ Poster Session</b>				<b>17:25-18:30</b>



## DAY-2

### Saturday, 11 October 2025

Venue	DEV & VARDHANA GOSWAMI LECTURE COMPLEX, IIT BHU VARANASI				Venue
08:00-09:00	Registration and Breakfast				08:00-09:00
	Venue: D&V 1A Session Chair: Prof. M.K. Mondal				
9:00-9:45	Plenary Talk 3: Prof. K. K. Pant, Director IIT Roorkee Clean Hydrogen Production from Biomass and MSW via Gasification				9:00-9:45
9:45-10:30	Plenary Talk 4: Prof. Sukumar Mishra Director IIT (ISM) Dhanbad				9:45-10:30
Venue	D&V 2C		D&V 2D		Venue
10:40-13:20	Session 5: Hydrogen Production Session Chair: Prof. Ejaz Ahmad, IIT (ISM)Dhanbad Prof. Ravi Jaiswal, IIT BHU		Session 6: Waste to Energy Session Chair: Prof. Satya Vir Singh, IIT BHU Dr. Snigdha Mishra, University of Leicester		10:40-13:20
	Speaker	Title	Speaker	Title	
10:40-11:05	Prof. Sebastian Peter (JNCASR, Bangalore) (Keynote)	Advanced Materials for Hydrogen Generation: From Water Recycling to Scalable Technologies	Dr. Sunil Dhole (JNK Chemdist Tech. Pune) (Keynote)	Decarbonizing the Chemical Industry Through Innovative Alternatives in Green Hydrogen Production	10:40-11:05
11:05-11:30	Dr. Lingaiah Nakka (IICT, Hyderabad) (Keynote)	Bi-metallic Catalytic Systems for Hydrogen rich	Prof. Vimal Chandra Srivastava (IIT Roorkee)	Waste to energy	11:05-11:30





		Syngas Production via Bi-reforming of Methane	(Keynote)		
11:30-11:50	<b>Prof. Tarak Mondal</b> (IIT Ropar) (Invited)	A Sustainable Route for the Production of Hydrogen from Agricultural Residue	<b>Dr. Rakesh Saini</b> Principal Scientist, CSIR - IMMT Bhubaneswar (Invited)	Sustainable utilization of industrial solid waste substrate via thermochemical route	11:30-11:50
11:50-12:00	<b>Prof. Taraknath Das</b> (IIT Roorkee)	Dry Reforming of Methane for the syngas production using supported Ni-catalyst: Catalyst regeneration and MW-Cnts Separation	<b>Prof. Asma Iqbal</b> (NIT Srinagar)	Valorising Non-Recyclable Waste to Energy using Downdraft Gasifier	11:50-12:00
12:00-12:10	<b>Prof. Vandana Meena</b> (NIT Kurukshetra)	Silicon-Type babio2x (X = Cl, Br) Oxyhalides as Promising Photocatalysts for Sustainable Hydrogen Generation and Environmental Remediation	<b>Prof. Minal Prashant Deshmukh</b> (MIT WPU, Pune)	An Eco-Friendly Solution for Bioethanol Production from Microalgae with Optimized Process Parameters and Emission Characteristics	12:00-12:10
12:10-12:20	<b>Dr. Deepak Chandra Sau</b> (CSIR-National Metallurgical Laboratory)	Development of a Process for Production of Hydrogen from Iron Oxide Waste Fines (wurtzite)	<b>Prof. Siva Mohan Reddy Narapureddy</b> (IIT Roorkee)	In-situ hydrogen production and battery electrode materials from metal effluent and biomass	12:10-12:20
12:20-12:30	<b>Rinkoo bhabal</b> (CHRIST University, Bangalore)	Bimetallic Co-Ni-MOF-derived electrocatalyst for green hydrogen production by urea electrolysis in wastewater	<b>Prof. Jyoti Prasad Chakraborty</b> (IIT BHU)	Bio-asphaltene to biohydrogen: production challenges and future prospects	12:20-12:30
12:30-12:40	<b>Sri Himaja Pamu</b> (BITS Pilani)	Harnessing Sunlight for Photocatalytic Hydrogen	<b>Dr. Apoorv Verma</b>	Insights from lab-scale experiment and numerical	12:30-12:40





		Evolution via Band-Engineered InGaAs-AlGaAs Heterostructures	(Kaunas University of Technology), Lithuania	simulation to investigate the hydrogen flow behaviour during underground storage	
12:40-12:50	<b>Lomas Rishi</b> (IIT Jammu)	Methane Decomposition over Fe-Co/Al <sub>2</sub> O <sub>3</sub> : Catalyst and Reaction Conditions Optimization	<b>Pankaj Parmar</b> (IIT Kharagpur)	Thermochemical Conversion of Biomass Waste to Energy: Product Yield, Characterization, and Optimization in Pyrolysis Systems	12:40-12:50
12:50-13:00	<b>Abhishek Anand</b> (IIT BHU)	Role of CeO <sub>2</sub> -YSZ Intermediate Layers in Improving Hydrogen Permeance of Palladium Membranes on Porous $\alpha$ -Al <sub>2</sub> O <sub>3</sub> Supports	<b>Mrinmoy Kumar Sarmah</b> (IIT Guwahati)	Experimental Investigation of Syngas Production in A 25 kw Dual Fluidized Bed Gasifier (DFBG)	12:50-13:00
13:00-13:10	<b>Vishal Uttam Dhakane</b> (IIT Jammu)	Integrated CFD and Machine Learning Approach for Hydrodynamics and Kinetics Modelling in a Cu-Cl Cycle Fluidized Bed Reactor for Hydrogen Production	<b>Prof. Sindhu S</b> (Amrita Vishwa Vidyapeetham)	Pyrolysis Kinetics Study of Lignocellulosic Biomasses	13:00-13:10
13:10-13:20	<b>Dr. Jitendra Kumar Prabhakar</b> (IIT Kanpur)	Optimizing Ni/Mn Ratio and Metal Loading in Ni-Mn/Al <sub>2</sub> O <sub>3</sub> Catalysts for Low Temperature CO <sub>2</sub> Methanation	<b>Aravindh Rajagopalan</b> (Amrita Vishwa Vidyapeetham)	Overcoming PdO-to-Pd Deactivation Transition under Methane Partial Oxidation: Effect of Pt loading	13:10-13:20



<b>13:20-14:20</b>	<b>Lunch Break</b>				<b>13:20-14:20</b>
<b>Venue</b>	<b>D&amp;V 2C</b>		<b>D&amp;V 2D</b>		<b>Venue</b>
<b>14:20-16:30</b>	<b>Session 7: Hydrogen Storage</b> <b>Session Chair: Dr. Siddharth Mayur, h2e Power</b> <b>Prof. Nitai C Maji, IIT BHU</b>		<b>Session 8: CO<sub>2</sub> Capture</b> <b>Session: Dr. Vaibhav Pandey, NTPC</b> <b>Prof. Madhulika Gupta, IIT (ISM) Dhanbad</b>		<b>14:20-16:20</b>
	<b>Speaker</b>	<b>Title</b>	<b>Speaker</b>	<b>Title</b>	
<b>14:20-14:45</b>	<b>Prof. Pratibha Sharma</b> (IIT Bombay) (Keynote)	Metal Hydride Based Hydrogen Storage	<b>Prof. Saroj Kumar Nayak</b> (IIT Bhubaneswar) (Keynote)	Advanced Functional Materials for Energy Transition	<b>14:20-14:45</b>
<b>14:45-15:10</b>	<b>Prof. Jitendra Sangwai</b> (IIT Madras) (Keynote)	Underground Hydrogen Storage	<b>Prof. Swapna Rabha</b> (IIT Madras) (Keynote)	CO <sub>2</sub> Capture: Challenges, Advances and Future opportunity	<b>14:45-15:10</b>
<b>15:10-15:30</b>	<b>Prof. Sushant Kumar</b> (IIT Patna) (Invited)	Ammonia Synthesis Under Mild Reaction Conditions: A Way to Make Hydrogen Storage and Transportation More Economic and Realistic	<b>Prof. Himanshu Goyal</b> (IIT Madras) (Invited)	Modelling of Joule heated reactors: Applications in H <sub>2</sub> production and CO <sub>2</sub> capture	<b>15:10-15:30</b>
<b>15:30-15:40</b>	<b>Prof. Subrata Panda</b> (IIT BHU)	Effect of Pressure Compaction on Microstructural Evolutions and Hydrogen Storage Properties of Magnesium Powders	<b>Saswata Dhar</b> (Defence Institute of Advanced Technology)	Collective Suppression Effect of Hydrogen-Air Mixture with CO <sub>2</sub> and Propene	<b>15:30-15:40</b>
<b>15:40-15:50</b>	<b>Prof. Sumeet Kumar Dubey</b> (UPES Dehradun)	Unveiling the PCI Characteristics of Mg-Ni	<b>Abhimanyu Singh Khichi</b> (IIT Madras)	A Comprehensive Investigation of CO <sub>2</sub> Absorption and Desorption	<b>15:40-15:50</b>



		Alloy: A Step Towards Efficient H <sub>2</sub> Storage		Performance Using Novel Amine Solvents	
<b>15:50-16:00</b>	<b>Chaithanya Purushottam Bhat</b> (BITS Pilani)	Ti-Functionalized Newly Modelled Penta-Hexa-Deca Graphene as a Promising Hydrogen Storage Material: A First-Principles Study	<b>Praveen Kumaar R</b> (IIT Madras)	Evaluating the Absorption performance and Degradation behavior of MEA in Cyclic Post-Combustion CO <sub>2</sub> Capture	<b>15:50-16:00</b>
<b>16:00-16:10</b>	<b>Digvijay Kumar Gupta</b> (IIT Guwahati)	Hydrogen Storage Potential and Technical Analysis of Salt Caverns of India	<b>Athira V B</b> (National Chemical Laboratory- NCL Pune)	Optimization of Porous Support and Fabrication of Thin Film Composite (TFC) Membrane for CO <sub>2</sub> Gas Separation in Simulated Flue Gas Conditions	<b>16:00-16:10</b>
<b>16:10-16:20</b>	<b>Gaurav Arora</b> (IIT Delhi)	Modelling the Effect of Process Variables on Hydrogen Uptake and Release in a Metal Hydride Storage System	<b>Ishita mandal</b> (Indian Institute of Petroleum and Energy)	Design of plate-type heat exchangers for absorption-based carbon capture plants for Indian power plants	<b>16:10-16:20</b>
<b>16:20-16:30</b>	<b>Dr. Shyam Sunder Rao</b> (IIT BHU)	Study the Direct Synthesis of Methanol from the Natural Gas			
<b>16:30-17:00</b>	<b>High Tea/ Poster Session</b>				<b>16:20-17:00</b>
	<b>Venue: D&amp;V 1A</b>				
<b>17:00-18:00</b>	<b>Pannel Discussion</b>				<b>17:00-18:00</b>
<b>18:00-19:00</b>	<b>Poster Session</b>				<b>18:00-19:00</b>



19:00-22:00	GALA Dinner	19:00-22:00
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## DAY-3

### Sunday, 12 October 2025

Venue	DEV & VARDHANA GOSWAMI LECTURE COMPLEX, IIT BHU VARANASI				Venue
08:00-09:00	Registration and Breakfast				08:00-09:00
	Venue: D&V 1A Session Chair: Prof. S N Upadhyay				
09:00-09:45	Plenary Talk 5: Prof. Shantanu Roy Executive Director IIT Delhi-Abu Dhabi				09:00-09:45
09:45-10:30	Plenary Talk 6: Neeraj Rai Mississippi State University, USA				09:45-10:30
10:30-11:15	Plenary Talk 7: Shri Abhay Bakre Mission Director, Ministry of New and Renewable Energy (MNRE), Government of India				10:30-11:15
Venue	D&V 2C		D&V 2D		Venue
11:15-13:35	Session 9: Hydrogen Production Session Chair: Prof. Kumud M Tripathi, IIT Jodhpur Dr. Bhavtosh Pandey, GAIL (India) Ltd.		Session 10: CO <sub>2</sub> Utilization Session Chair: Prof. Prateek Khatri, NIT Rourkela Prof. Sanjay Katheria, IIT BHU		11:15-13:30
	Speaker	Title	Speaker	Title	
11:15-11:40	Mr. David Cassidy CEO, Clean Hydrogen Technology, USA (Keynote)	How to Take Your Ideas from Concept to Success – CHT as a Case Study	Dr. Dev Kumar Thermax, Pune (Keynote)	Biofuel: Bio and E methanol the next low carbon fuel for Shipping and Aviation	11:15-11:40



11:40-12:05	<b>Dr. Sudhir Sarawat</b> CEO Horizon India Group (Keynote)	Transformation of Energy through Hydrogen and Fuel Cell	<b>Prof. Ejaz Ahmad</b> IIT (ISM) Dhanbad (Invited)	Cox Free Turquoise Hydrogen Production from Coal Bed Methane: A Futuristic Approach Towards Carbon Neutral Mining	11:40-12:00
12:05-12:25	<b>Dr. Snigdha Mishra</b> University of Leicester, UK (Invited)	Deep Eutectic Solvents for Sustainability	<b>Prof. Madhulika Gupta</b> IIT (ISM) Dhanbad (Invited)	Decoding the Role of Substitution Patterns and Surface Polarity in Biomass Recalcitrance	12:00-12:20
12:25-12:35	<b>Dr. Binod Kumar</b> (IIT Jammu)	Development of a 3D-Printed Integrated Heat Exchanger and Catalytic Reactor for 1 kW Ammonia-Fed Solid Oxide Fuel Cell Systems	<b>Prof. Sivasubramanian Velmurugan</b> (National Institute of Technology Calicut)	Valorization of Phormidium Valderianum for CO <sub>2</sub> Fixation and Phycocyanin as a Natural Food Colorant	12:20-12:30
12:35-12:45	<b>Dr. Nainsi Saxena</b> (IIT (ISM) Dhanbad)	Catalytic Decomposition of Coalbed Methane for Turquoise Hydrogen Production and Carbon Nanotube as byproduct Using Nickel-Supported Bentonite as catalyst	<b>Dr. Saumya Tiwari</b> (IIT Kanpur)	Methane-CO <sub>2</sub> Reforming in Molten Carbonate Salt Medium for Sustainable Syngas Production	12:30-12:40
12:45-12:55	<b>Dr. Aniruddha Santosh Bhide</b> (CHRIST, Bangalore)	Energy Efficient Green Hydrogen Generation via Formaldehyde Electrooxidation Using a Cu-Fe-Based Catalyst	<b>Kaushik Kundu</b> (IIT Delhi)	H <sub>2</sub> -rich syngas production through ML-driven catalyst optimization with experimental validation	12:40-12:50
12:55-13:05	<b>Anusha Yajurvedi</b> (University of Antwerp, Belgium)	Induction Heating of Commercial Catalysts for Ammonia Cracking:	<b>Dr. Priyanshu</b> (IIT Jammu)	A Novel Beam-Down Parabolic Dish Concentrator System Integrated with Trans	12:50-13:00



		Hydrogen Production and Asset Valorisation		critical CO <sub>2</sub> Rankine Power Cycle and PEM Electrolyser for Green Hydrogen Production: Design, Optical Analysis, and Techno-Economic Optimization	
13:05-13:15	<b>Sachin Kumar Vishwakarma</b> (IIT BHU)	Experimental Investigation of Joule Heated Membrane Separator for Ultra-Pure Hydrogen Production Using Methanol Steam Reforming	<b>Deepa Agrahari</b> (Madan Mohan Malviya University of technology)	Optimized Biohydrogen Production from Industrial Spent Wash via Integrated Dark Fermentation and Microbial Fuel Cell Using Clostridium biocatalyst	13:00-13:10
13:15-13:25	<b>Amarendra Nayak</b> (Ravenshaw University, Cuttack, Odisha)	An Interface Engineering Strategy of FeS <sub>2</sub> /CoS <sub>2</sub> at MoS <sub>2</sub> as an Electrocatalyst for Efficacious Water Splitting	<b>Deeksha Jaiswal</b> (IIT Kanpur)	Ti <sub>3</sub> C <sub>2</sub> TX-based Zr at MXene for CO <sub>2</sub> Capture and Conversion	13:10-13:20
13:25-13:35	<b>Dr. Akanksha Kumar Pathak</b> (IIT (ISM) Dhanbad)	Physics-Based 2D Simulation of the Coup de Fouet Effect in Lead-Acid Batteries for Renewable Integration	<b>Matam Sandeep Chandra</b> (IIT Madras)	Modelling of CO <sub>2</sub> desorption process from aqueous amine solution by coupling phase transfer with reaction kinetics	13:20-13:30
13:35-14:30	<b>Venue: D&amp;V 1A</b> <b>Closing Ceremony, Awards Distribution and Lunch Break</b>				13:30-14:30