International Conference on Hydrogen Energy and Sustainability (HES -2025)
10-12th October 2025
IIT (BHU) Varanasi

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: Dr. V.K. Saraswat (Honourable Member, NITI Aayog) Venue: Conference Hall 1	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
9:18-9:20	Welcome Address by Head Dept of Chemical Engineering and Technology Prof. M.K. Mondal	9:18-9:20
9:20-9:25	Address by Director IIT BHU Prof. Amit Patra	9:20-9:25

9:25-9:35	**Address by Chief Guest Dr. V.K. Saraswat**				**9:25-9:35**
9:35-9:45	**Conference Opening**				**9:35-9:45**
9:45-10:30	**Plenary Talk 1: Dr. V.K. Saraswat (Honourable Member, NITI Aayog)**				**9:45-10:30**
10:30-11:00	**High Tea/Poster**				**10:30-11:00**
Venue	**Conference Hall 2**		**Conference Hall 3**		**Venue**
11:00-13:30	**Session 1: Hydrogen Production**		**Session 2: Hydrogen Application**		**11:00-13:30**
	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**
11:50-12:10	**Prof. Kumud Malika Tripathi** IIT Jodhpur **(Invited)**	Photocatalytic Hydrogen Evolution from Diesel Soot Derived Carbon Nano Onions: A Circular Path to Sustainable Energy	**Mr. Om Prakash Verma** Jhonson Prism Cement **(Keynote)**	Scope of Hydrogen Usage in the Cement Industry	**11-50-12:15**
12:10-12:20	**Prof. Loveleen Kaur Brar** (TIET, Patiala)	Synthesis of TaO/MoO@C3N4	**Prof. Umamaheswarrao P**	Performance and Emissions Optimization of a CI Engine	**12:15-12:25**

		Electrocatalysts for Water Splitting	(Bapatla Engineering College)	Using RSM and Machine Learning Models using Hydrogen-Enriched Sesame Biodiesel blends	
12:20-12:30	**Dr. Santosh Kumar Singh** (IIT (ISM) Dhanbad)	Assessment and optimization of solar-driven organic Rankine cycle for sustainable hydrogen production	**Dr. Priyanshu** (IIT Jammu)	Fixed-Wing UAV Integrated with a Hydrogen Fuel Cell to Enhance Long-Endurance and Sustainable Flight	**12:25-12:35**
12:30-12:40	**Dr. Soumendra Kumar Das** (IIT (ISM) Dhanbad)	Efficient Prediction of Band Gap and Band Edge Position in Pure and Substituted C2N Monolayer for Photocatalytic Water Splitting Using Different Semilocal Meta-GGA Functionals	**Dr. Akanksha Kumar Pathak** (IIT (ISM) Dhanbad)	Physics-Based 2D Simulation of the Coup de Fouet Effect in Lead-Acid Batteries for Renewable Integration	**12:35-13:45**
12:40-12:50	**Himanshu Asati** (IIT Jodhpur)	Visible Light Responsive Carbon Nano Onions-MoS2 Heterostructures for Green Hydrogen Production	**Ankur Kumar** (IIT BHU)	Numerical Study of Helium Jet in Crossflow Under Active Forcing: Optimizing Penetration and Mixing	**12:45-12:55**
12:50-13:00	**Dr. Silviya R** (Jain University)	N-Doped Carbon Supported Co-W Phospho-Boride Electrocatalyst for Efficient Hydrogen Evolution in Alkaline Seawater	**Anbumani P** (BITS Pilani)	Degradation Signature Analysis of PEMFCs using Data-Driven Techniques for Hydrogen-Powered Vehicles	**12:55-13:10**

13:00-13:10	**Ajeet Kumar** (IIT Kanpur)	g-C3N4-supported ASnO3 (A = Fe, Ni) perovskite-based dual S-scheme heterostructure: Efficient hydrogen evolution via photocatalytic water splitting	**Arjun Singh Kachhawa** Jai Narain Vyas University, Jodhpur	Photocatalytic Water Splitting Under Visible Light Using B, N-Doped Functionalized Graphene Sheets	**13:10-13:20**
13:10-13:20	**Apoorva B C** (CHRIST University, Bangalore)	Alkaline Urea Splitting for Green Hydrogen production with Cobalt Sulfo-Boride MOF Electrocatalyst			
13:20-13:30	**Anup Mahata** (IIT Delhi)	Poly-phosphamide driven proton relay for membrane fabrication and electrocatalytic proton reduction			
13:30-14:30	**Lunch Break**				**13:10-14:30**
Venue	**Conference Hall 2**		**Venue: Conference Hall 3**		**Venue**
14:30-16:30	**Session 3: Hydrogen Production**		**Session 4: CO_2 Utilization**		**14:30-16:30**
	Speaker	**Title**	**Speaker**	**Title**	
14:30-14:55	**Dr. Sujay Karmakar** CGM NETRA, NTPC **(Keynote)**	Hydrogen Energy in Power Industry	**Dr. Vaibhav Pandey** NTPC **(Invited)**	Renewable Carbon to Jet Fuel: Scalable Pathways for Aviation Decarbonization	**14:30-14:50**
14:55-15:20	**Dr. Pramod Kumar** HPCL Bengaluru	Turquoise Hydrogen: A technology for Hydrogen	**Dr. Neha Antil**	Ruthenium Nanoparticles Immobilized on Water-Stable	**14:50-15:10**

	(Keynote)	Production with no CO_2 emission	Max Planck Institute CEC, Germany **(Invited)**	Carbon-Based Supported Ionic Liquid Phases for CO_2 Hydrogenation to Formates	
15:20-15:40	**Prof. Koustuv Ray** IIT Kharagpur **(Invited)**	Ni1-xCox alloy catalyst for hydrogen production from hydrocarbon cracking and oxygenates reforming	**Prof. Prateek Khatri** NIT Rourkela **(Invited)**	Non-noble metal supported catalysts for methane oxidation under oxygen-rich conditions	**15:10-15:30**
15:40-15:50	**Dr. Thillai Sivakumar Natarajan** (CSIR-Central Leather Research Institute)	Catalysts-Driven Hydrogen Production from Aluminiumâ€“Water Systems: Reaction Mechanism and Kinetic Perspectives	**Prof. Jigisha k Parikh** (Sardar Vallabhbhai National Institute of Technology, Surat)	A green reaction pathway for the CO_2 utilization	**15:30-15:40**
15:50-16:00	**Dr. Keshav Kumar** (IIT Guwahati)	Comparative Study of Traditional Reformer, Membrane Reformer, and Double Stage Membrane Reformer for Enhanced Hydrogen Production Using Methanol Steam Reforming	**Garima** (IIT KANPUR)	Effect of Al_2O_3, SiO_2, TiO_2, and SiO_2 â€“ Al_2O_3 supports on the Ni catalyst for CO_2 methanation	**15:40-15:50**
16:00-16:10	**Aakash Rajpoot** IIT (ISM) Dhanbad)	Turquoise Hydrogen and Carbon Nanotube Production via Catalytic Methane Decomposition over Fe-Co-Zn/Î³-Alâ‚‚Oâ‚ƒ Nanocatalyst	**Jenish S** (IIT Jammu)	Comparison of PSA and TSA for the Separation of CO_2 â€“ N_2 mixtures by Computational and Experimental Investigations	**15:50-16:00**
16:10-16:20	**Sachin Kumar Sharma** (IIT Guwahati)	Structurally Tuned nife-LDH/CNT Electrocatalyst	**Rajvikram Singh** (IIT Kanpur)	Optimization of a catalytic system for RWGS: Influence	**16:00-16:10**

		for Efficient Hydrogen Evolution		of active metal, support and calcination temperature	
16:20-16:30	**Bhavtosh Pandey** (HBTU)	Hydrogen Policy Landscape and Energy Management Architecture in India: Prospects, Complexities, and The National Green Hydrogen Mission	**Lavanya Yalagandula** (BITS Pilani)	Dual-functional Catalyst for Efficient CO_2 Conversion into Value-added Products	**16:10-16:20**
			Rajeev Ranjan (IIT Roorkee)	Role of catalyst supports in enhancing selective hydrogenation of CO_2 to formic acid over Ni-based catalysts	**16:20-16:30**
	Venue: Conference Hall 1				
16:40-17:25	**Plenary Talk 2: Prof. R Sonde, BITS Goa and IIT Delhi** **Science - Speed - Safety - Scale to realise hydrogen economy for India. Sharing of Jodhpur hydrogen valley experience so far**				**16:40-17:25**
17:25-18:30	**High Tea/ Poster Session**				**17:25-18:30**