



Seminar on  
**'Production and Use of Green Hydrogen and  
Green Ammonia in Process Industry'**

Organised by  
Indian Institute of Chemical Engineers  
(Northern Regional Centre)  
&  
Department of Chemical Engineering, IIT Delhi

In association with  
Fertiliser Association of India, Delhi

## PROGRAMME

<b>(Friday, 24<sup>th</sup> June, 2022)</b> <b>Venue: Seminar Hall, IIT Delhi</b>		
09:00-10:00 hrs	<b>Inaugural Session</b>	
	Welcome of Chief Guests & Lamp Lighting	
	<b>Dr. S. Nand</b> Chairman, Indian Institute of Chemical Engineers (Northern Regional Centre) Director, Indian Institute of Technology (IIT) Delhi	Welcome Address
	<b>Mr. K. S. Raju</b> Chairman, Fertiliser Association of India, Delhi	Address
	<b>Shri Bhagwanth Khuba</b> Hon'ble Minister of State for Chemicals & Fertilizers and New & Renewable Energy, Government of India	Special Address
	<b>Dr. Mansukh Mandaviya</b> Hon'ble Minister of Chemicals & Fertilizers and Health & Family Welfare, Government of India	Inaugural Address by Chief Guest
	<b>Prof. Anil K. Saroha</b> Organizing Secretary & Head, Department	Vote of Thanks

	of Chemical Engineering, IIT Delhi	
10:00-10:30 hrs	High Tea	
	<b>Plenary Session</b>	
10:30-11:00 hrs	by MNRE on Green Hydrogen/Ammonia Policy *	Plenary Address
11:00-11:45 hrs (Virtual)	<b>Prof. S. Basu</b> Director, CSIR-Institute of Minerals & Materials Technology (IMMT), Bhubaneswar & Central Institute of Mining and Fuel Research (CIMFR), Dhanbad	Hydrogen Production in 3D-Printed Micro Electrolyzer
11:45-12:30 hrs (Virtual)	<b>Mr. Jacobus de Letter</b> Yara Clean Ammonia, Norway	Plenary Address
12:30-13:30 hrs	Lunch	
	<b>Technical Session I : Developments in Electrolysis Technology</b>	
13:30-14:10 hrs	<b>Dr. Sandeep K C</b> Head-Process Development, Heavy Water Division, BARC, Mumbai	The Development of Alkaline Water Electrolyzer Technology at BARC for green hydrogen production
14:10-14:50 hrs	<b>Mr. Pashupathy Gopalan</b> Director, Ohmium India, Mumbai	Experience of Commercial Scale PEM Based Electrolyzer
14:50-15:30 hrs (Virtual)	<b>Dr. (Mrs.) N. Kalaiselvi</b> Director, CECRI (CSIR), Karaikudi*	Green Hydrogen eco system: Path forward to end- to-end value chain for clean energy
15:30-16:00 hrs	Q&A	
16:00 hrs	Tea	

<b>(Saturday, 25<sup>th</sup> June, 2022)</b>		
<b>Venue: Seminar Hall, IIT Delhi</b>		
	<b>Technical Session II : Production and Use of Green Hydrogen including Cost Considerations</b>	
09:00-09:40 hrs	<b>Dr. Ashish Lele</b> Director, NCL, Pune	Role of Green Hydrogen for Clean Transportation
09:40-10:20 hrs (Virtual)	<b>Dr. Suman Roy Choudhury</b> Naval Research Materials Laboratory, DRDO	Production and Use of Hydrogen in Fuel Cell
10:20-10:45 hrs	Tea	

10:45-11:15 hrs	<b>Mr. DMR Panda</b> NTPC RE/Hydrogen	Green Hydrogen Projects and Plans of NTPC
11:15-11:45 hrs (Virtual)	<b>Ms. Hao Zuo</b> Research Engineer, Toyo Engineering Corporation, Japan	TOYO's Carbon Neutral Business Activities & Green Ammonia
11:45-12:00 hrs	Q&A	
<b>Technical Session III: Production and Use of Green Ammonia</b>		
12:00-12:30 hrs	<b>Dr. S. Nand</b> Additional Director General, Fertiliser Association of India, New Delhi	Prospects of Green Ammonia in Fertilizer Industry
12:30-13:00 hrs (Virtual)	<b>Mr. Deepak Shetty</b> Stamicarbon BV, Netherlands	Stamicarbon Small Scale Green Ammonia – A major step towards Decarbonisation of Fertilizer Production
13:00-13:45 hrs	Lunch	
13:45-14:15 hrs	<b>Mr. Harsh Kumar</b> Chief Technical Advisor, Ammonia, Syngas & Fertilizers (AS&F), KBR, Gurgaon	Technological Options for Green Ammonia Production
14:15-14:45 hrs	<b>Mr. Bakul Pant</b> Haldor Topsoe, Faridabad	Green Ammonia: Key to Decarbonization of Industry, Agriculture & Beyond
14:45-15:00 hrs	Q&A	
<b>Technical Session IV: Hydrogen Storage and Transportation</b>		
15:00-15:30 hrs	<b>Dr. V. Narayanan</b> Director, Liquid Propulsion Systems Centre, ISRO Thiruvananthapuram	Developments in Hydrogen Storage*
15:30-16:00 hrs (Virtual)	<b>Mr. Gautam Sen</b> Ex- Executive Director, ONGC	Options for storage of Hydrogen
16:00-16:30 hrs	<b>Panel Discussion</b>  Moderator: Panellists:  <ul style="list-style-type: none"> <li>• Dr. S. Nand, Additional Director General, FAI</li> <li>• Mr. Mohit Bhargava, CEO, NTPC Renewable Energy Ltd.</li> <li>• Prof. R.R. Sonde, Department of Chemical Engineering, IIT Delhi</li> <li>• Dr. Dipesh Pherwani, MNRE, GOI</li> <li>• Mr. Venkat Pattabathula, Principal Consultant, SVP Chemical Plant Services, Brisbane, Australia - <i>(Joining Virtually)</i></li> </ul>	<b>Theme:</b> <b>Way Forward to Adopt Green Hydrogen / Ammonia in Indian Economy</b>
16:30 hrs	Tea	

\* To be confirmed