

 $H_{2}$ 





## **PHDCCI** Centre of Excellence in Green Hydrogen

## Master Class on HYDROGEN FOR DECISION MAKERS

16 Nov 2023 | 12:30 PM – 4:45 PM PHD House, New Delhi

**Hybrid Mode** 



Hydrogen

H<sub>2</sub> HYDROGEN

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Hydrogen

## **Objectives and Takeaways**

Hydrogen and Hydrogen carriers are becoming increasingly important in reducing the world's emissions of greenhouse gases. These chemicals may substitute fossil fuels and reduce  $CO_2$  emissions, from both the industrial and transport sector. In this course, you will learn how these Hydrogen and Hydrogen carriers can facilitate the green shift and the transition to a zero-emission society.

You will learn about:

- Hydrogen's role in the green transition
- Hydrogen and hydrogen carriers
- Hydrogen production
- Hydrogen applications

- Hydrogen storage
- Important security aspects of Hydrogen
- Hydrogen regulations and laws

### Hydrogen's Role in the Green Transition

Hydrogen stands as a pivotal player in orchestrating the green transition, offering a dynamic bridge between renewable energy and sustainable industries. Explored within this curriculum is hydrogen's potential to revolutionize sectors by providing clean energy carriers, bolstering energy storage, and facilitating the decarbonization journey.





### Hydrogen Production, Storage, and Distribution

Delve into the intricacies of hydrogen's journey from production to utilization. Understand diverse production methods, including electrolysis and reforming, and gain insights into efficient storage and distribution solutions. Uncover the technological advancements shaping hydrogen infrastructure, from cuttingedge storage technologies to optimized transportation methods.

## **Applications of Hydrogen Technology**

Embark on a journey through hydrogen's wide-ranging applications that extend far beyond fuel cells. Discover its transformative role in sectors such as mobility, industry, power generation, and beyond. Explore fuel cell vehicles, grid stabilization, industrial processes, and other innovative applications, uncovering the versatility of this remarkable energy carrier.





### **Security Aspects of Hydrogen**

Explore the vital security considerations associated with the entire hydrogen value chain. Examine the safe handling, storage, and transportation of hydrogen, as well as potential risks and mitigation strategies. Delve into regulatory frameworks and industry standards that ensure a secure and resilient hydrogen ecosystem, safeguarding both people and assets.

## Who should attend

This course is intended for business administrators and managers. The focus will be on understanding the basics of hydrogen technology and knowing enough to support your company in decisions concerning hydrogen technology.

## **Faculty profiles**



#### Prof. Dhayalan Velauthapillai

A distinguished physicist and researcher, Dhayalan leads the ANCEHA research group, which specialises in advanced nanomaterials for clean energy, particularly third and fourth- generation solar cells and fuel cells. His work extends to computational and experimental studies in nanomaterials for applications in clean energy, health, and tissue engineering, while also contributing to research on energy policies and management.



#### **Dr. Velaug Myrseth Oltedal**

Velaug is an accomplished researcher with expertise spanning nanotechnology, petroleum, and green energy. Her current focus lies in hydrogen and renewable energy research, including offshore wind hydrogen production, storage methods, and electrolysis with salt water. She also plays a crucial role as the Center Deputy and Innovation and Exploitation Manager for the FME HyValue research centre.



#### Dr. Jonathan Økland Torstensen

Jonathan is an associate professor at HVL. His main research interests are Hydrogen production and fuel cells. He teaches Hydrogen courses both for ordinary students and industry students.



#### Dr. Yulia Arinicheva Skåtun

Yulia is an associate professor specialising in hydrogen technology, electrochemistry, and thermodynamics. With a background in chemistry and materials science, she earned her Doctoral degree in nuclear waste management. Her extensive research experience includes solid-state batteries, with recognition from the Helmholtz Association for her outstanding research contributions.



#### Ms. Oda Marie Ellefsen

Oda Marie holds an MSc in Materials for Energy Technology from the Norwegian University of Science and Technology (NTNU) and is a specialist in functional materials. She has experience in product development and industrial R&D and currently manages the R&D portfolio of the Greenstat group, as well as several hydrogen projects in India and Sri Lanka.



#### Mr. Rajan Varshney

Rajan Varshney is presently taking up New initiatives at NTPC the largest power company which is diversifying into related fields. He did his MTech from IIT Delhi. He has over 35 years of experience in the energy sector and has been doing innovations that have won many accolades. He spearheaded efforts for September 2020 notifications for H2/HCNG as permitted fuel in the Indian Motor Vehicle Act and Safety standards for FCEVs. He is passionate about the environment and sustainability. He has been a lead speaker at various national and international conferences.





# PHDCCI CENTRE OF EXCELLENCE IN GREEN HYDROGEN

**EMPOWERING MSMES: UNLOCKING THE POTENTIAL OF GREEN HYDROGEN** 

## Activities and Services



- Learning programs within the entire Hydrogen value chain, process safety and techno-commercial Courses
- Green Hydrogen Projects development advisory
- International Innovation Hub for MSMEs and states



- Associated COEs in Green Hydrogen with Chambers of neighbouring and developing countries
- Governmentsponsored programme and policy advocacy for MSME in Green Hydrogen

- Carbon management, Carbon projects development -Decarbonization / Net zero advisory, Carbon assets evaluation
- Environment, Social and Governance (ESG) services



- Facilitating technology transfer and Hydrogen based Start-ups
- Organising events on renewable energy focusing on H<sub>2</sub>
- CoE and Universities
  collaboration program



### **Program Fee**

Physical participation – Rs. 2000 + GST (High Tea is included) No fee for virtual participation

**Registration and Payment Link** 

Https://www.phdcci.in/events/hydrogen-for-decision-makers/



### For more details, please contact

Ms. Kanchan Zutshi, Director, PHDCCI, Email: kanchanzutshi@phdcci.in Dr. Sibimol Luke, Joint Secretary, PHDCCI, Email: sibimol.luke@phdcci.in, Mob: 63630 11818