

SEMINAR / WORKSHOP

HYDROGEN – Market and Technology Potentials

27-28 February 2025 | Munich



H₂

Online registration: www.sv-veranstaltungen.de/automotive/hydrogen-potentials/

Main Topics:

- Hydrogen as a competitive energy carrier
- Hydrogen Economics, Value Chain and Ecosystems
- Technology: Hydrogen Production
- Technology: PEM Fuel Cell Systems
- Critical raw materials: Batteries, fuel cell, electrolyzer
- Promising use cases and technologies and their limiting factors

Your advantages:

- Discuss with the experts current questions and issues
- Benefit from a unique combination of technology and market experience
- Get a holistic understanding of hydrogen technology and economy
- Learn about real hydrogen projects and their potential success factors
- Benefit from the limited number of participants
- Comprehensive documentation material
- Certificate of participation

Your Seminar Heads:



Matthias Brendel
Protonik GmbH
and Fuel Cell
Technology Sweden AB



Dr. Rittmar v. Helmolt
Protonik GmbH
and Fuel Cell
Technology Sweden AB



Rasmus Andersson, PhD
Fuel Cell Technology
Sweden AB



DI (FH) Martin Rothbart, MBA
AVL List GmbH

A conference organised by:

 **Veranstaltungen**



Day 1 – Hydrogen and Ecosystems

09:15 Welcome Reception and early Registration with Coffee & Tea

Section 1. Why and how can Hydrogen become a competitive energy carrier? You will learn about the hydrogen value chain and about its most relevant technologies and economics, for production, transport and storage of hydrogen.

10:00 Overview & Basics

- Hydrogen Production, Conversion, Transport
- Hydrogen Storage (LH2, GH2, Cryo-Compr, MeH, Ads)
- Hydrogen-derived Energy Carriers (NH3, MeOH, e-Fuel)
- Energy density, Value of Energy, Efficiency
- (Hydrogen verticals)

11:30 Hydrogen Economics

- Hydrogen Value Chain
- Subsidies
- Cost of Hydrogen: Production, Transport
- Willingness to pay
- (CO2-Footprint)

12:50 Joint Lunch Break

14:00 Hydrogen Production

- Industry Example
- Electrolyzer Technologies
- Grid Integration

15:20 Coffee Break

Section 2. What does a “hydrogen economy” start with? Hydrogen Eco Systems are combinations of hydrogen production and usage, that can be evaluated already today in pilot projects and which can become profitable before a more mature large scale hydrogen economy is developing. A vital background information is to know about requirements and limitations that are set by the use case or application.

15:45 Hydrogen Eco Systems

- Systemic optimization of Hydrogen production, storage and use
- Regional examples of favorable Hydrogen verticals

16:30 Direct CO2-lean Hydrogen including Nuclear - Summary of Status & New Concepts

- Thermochemical hydrogen production
- Cost of nuclear power production
- Gen-IV nuclear reactors: Status and Outlook

17:15 Final Discussion

17:30 Evening Event with Finger Food and Fine Drinks

Day 2 – Applications and Technologies

08:45 Welcome and short summary of Day 1

09:00 Applications – Why Hydrogen?

- Cars and Trucks
- Light Vehicles
- Maritime
- Aviation

Section 3. What are the most promising use cases and technologies, and what are limiting factors? In many cases, fuel cell technology is used for efficiently converting hydrogen into electric power or propulsion energy. In the market, this often competes with batteries. You will develop an understanding of the technologies which will help to assess the right choice for a propulsion system or powerplant in a given application.

09:30 PEM Fuel Cell System

(Presented by Dr. Rasmus Andersson, Fuel Cell Technology Sweden AB)

- Industry Example
- Fuel Cell Technologies
- PEM Fuel cell status and development, competitive environment
- Focus Topics: Durability and Robustness
- Focus Topics: Cost
- System Integration

11:00 Coffee Break

11:30 Critical Raw Materials: Batteries, Fuel Cell, Electrolyzer

(Presented by Martin Rothbart, AVL GmbH)

- Recycling
- Iridium (for electrolyzers)
- Platinum (for fuel cells)
- Copper
- Battery materials

12:00 Worldwide Hydrogen and Fuel Cell Projects

- Fuel Cell Application
- Hydrogen Production
- Electrolyzer Production

12:45 Final Discussion, Summary

13:00 Joint Lunch

14:00 End of Seminar



Seminar heads



Matthias Brendel

Owner & Managing Director,
Protonik GmbH and CEO,
Fuel Cell Technology Sweden AB

Matthias studied mechanical engineering at the Technical University of Darmstadt and started his professional career at General Motors/ Opel in 1995 as a test engineer. In 2000, he joined GM's global hydrogen fuel cell project. Within this project Matthias worked and lived in Germany and the U.S. He was responsible for the integration and application of GM's fuel cell demo fleet and advanced development of fuel cell systems. In 2009, he took on a leadership role in battery development for electric vehicles. After 11 years he took on a leadership role at GM Europe as Director Electrical Systems and later as Director Interior and Safety. In 2017, he started as VP for Electrification at AVL List GmbH in Graz. In 2021, Matthias joined H2FLY GmbH as Co-CEO, a start-up for hydrogen fuel cell propulsion for the aviation industry. From 2022-2024, he worked as Managing Director for PGUB Management Consultants GmbH and established a business segment in hydrogen and fuel cell applications. In early 2024 he founded Protonik GmbH with the focus on hydrogen technology and in parallel is working as CEO of FCT Sweden, a fuel cell technology start-up in Stockholm.



Rasmus Andersson, PhD

Development Engineer,
Fuel Cell Technology Sweden AB

Rasmus is a development engineer focusing on the LAMINA fuel cell's core chemical and electrochemical processes and its development at Fuel Cell Technology Sweden AB, a position he started at the end of the summer of 2024.

Previously, he was a PhD student at Uppsala University, Sweden, which he finished by defending his doctoral thesis before the summer of 2024. During his PhD studies, he investigated the ion transport processes of lithium and the futuristic cations sodium, potassium and magnesium in solid polymer electrolytes for batteries. He also prepared and examined novel polymer electrolytes for lithium-ion batteries, for which the impact of the host material on the ion transport was studied.

Before the PhD years, Rasmus has a bachelor's and master's degree from 2018 in materials chemistry at Uppsala University, Sweden.



Dr. Rittmar v. Helmolt

Managing Partner, Protonik GmbH
and Technology Management,
Fuel Cell Technology Sweden AB

Rittmar is founding member and managing partner of Protonik GmbH, an innovation and consultancy firm with focus on hydrogen. He also has a position in technology management at Stockholm-based Fuel Cell Technology Sweden AB.

Rittmar has been working with fuels cells and hydrogen since 1995, when he developed fuel cells at Siemens R&D. He then moved to General Motors for the lead of fuel cell development for hydrogen electric vehicles. He later worked on electric vehicles and urban mobility projects, including autonomous vehicles, car- and ridesharing projects.

He also had assignments at Stuttgart-based startup H2Fly Austrian engineering service provider AVL.

Rittmar studied physics at the Universities of Göttingen and Augsburg.



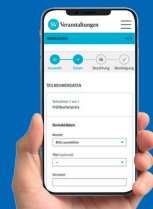
DI (FH) Martin Rothbart, MBA

Senior Product Manager Energy
and Sustainability Global Business Development,
Sales & International Operations, Powertrain Systems,
AVL List GmbH

Martin Rothbart is Senior Product Manager for Energy and Sustainability for the Mobility engineering division of AVL, in Graz, Austria. Martin started his career in semiconductor manufacturing. He joined AVL in 2000 and has held several positions in the company. For more than five years, Martin is responsible for business development in the areas of energy, hydrogen, alternative and synthetic fuels as well as the sustainability in the product lifecycle. That includes predictions and the analysis of future market potential in various global regions. Martin holds a degree in automation technology and a MBA in economics from California State University, East Bay, USA.

Please register online

www.sv-veranstaltungen.de/automotive/hydrogen-potentials/



Content

Hydrogen is widely seen as future versatile energy carrier, with applications in transportation, energy production, industrial processes, and heating, making it a crucial component of future energy scenarios. As of today, on the other hand, the market for applications outside of the “traditional” hydrogen use cases such as chemical industry and refineries, have not yet taken off, and also green hydrogen production makes up only a small fraction of the global hydrogen consumption.

The potential of hydrogen for decarbonizing sectors traditionally reliant on fossil fuels is significant, particularly as a clean fuel for fuel cells and a storage medium for renewable energy. While the cost of hydrogen production has historically been higher compared to fossil fuels and alternatives like batteries, advancements in technology and increased investment in renewable energy are

driving down costs. As hydrogen becomes more economically viable, it can play a pivotal role in reducing greenhouse gas emissions and enhancing energy security, facilitating a transition to a sustainable and resilient energy future.

In the seminar, you will get a deep look into why and how can Hydrogen become a competitive energy carrier, and what are the crucial factors for a hydrogen value chain. Furthermore, you will get an introduction into hydrogen ecosystems, which could be starting points for developing a hydrogen economy. First-hand information most promising use cases and technologies as well as their limiting factors will be provided. Our industry experts will help you to develop an understanding of the current market and hydrogen technology potentials.

Seminar / Workshop

HYDROGEN — Market and Technology Potentials



Event Location

Munich, SZ Main Tower
Hultschiner Straße 8
81677 Munich,

Participation fee: € 1,795 plus VAT

Accommodation

HYPERION Hotel München

Truderingstr. 13
81677 Munich
+49 (0) 89 / 909017200

<https://short.h-hotels.com/ak8332475>

Single room: € 149 incl. breakfast and VAT

Room contingent: Please make your own room reservation directly in the hotel by using the code word “SV Veranstaltungen”. We have a room contingent with a preferential rate reserved until two weeks prior to the event. Reservations afterwards can only be made according to availability.

Services Included in the Participation Fee

- Participation in the seminar/workshop
- Seminar documentation
- Lunch on both days
- Get-together
- Refreshments during breaks and snacks
- Participation at the evening get-together with finger food and drinks

Your Contacts:



Registration and Organisation

Daireen Sprenger
+49 8191 125 – 166
daireen.sprenger@sv-veranstaltungen.de



Project Management

Ingo Martin
ingo.martin@sv-veranstaltungen.de