Integration of Hydrogen Technologies into Regional Energy Systems

Workshop

13:00, 6th May 2025 –
13:30, 8th May 2025

University of Bayreuth,
TAO building

ZET Zentrum für Energietechnik

UNIVERSITÄT BAYREUTH

About this Workshop

Hydrogen has emerged as a key focus area in the pursuit of sustainable energy. As the global transition accelerates, integrating hydrogen into transportation, chemical processing, and the energy sector has become more crucial than ever. At the University of Bayreuth, hydrogen research bridges science and industry, making significant contributions to the market ramp-up of hydrogen. In this spirit, we are pleased to host a workshop on Integration of Hydrogen Technologies into Regional Energy Systems at the University of Bayreuth in the framework of our project HyBaCoM – Design and Optimization of Hybrid Hydrogen Battery Energy Systems for Community Microgrids. This event will bring together a diverse group of industry experts, researchers, and partners from Germany and Australia to exchange insights on the latest advancements in hydrogen research and technology. As part of the workshop, a site tour to the Wunsiedel Energy Park will take place. This is one of the largest operational electrolysis plants in Germany integrated into a coupled energy system, providing a unique opportunity to explore large-scale applications of hydrogen technology. We look forward to welcoming you to this workshop at one of Germany's most beautiful campus universities in Bayreuth.

Details of the Event

- **Date:** 6th – 8th May 2025
- **Target Audience:** Experts and interested public from industry, science and politics
- **Venue:** University of Bayreuth, TAO building, Prof.-Rüdiger-Bormann-Str. 1, 95447 Bayreuth
- **Event language:** English
- **Participation fee:** None
- **Registration:** Please register here

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Workshop

"Integration of Hydrogen Technologies into Regional Energy Systems"

Date: 6th – 8th May 2025

Venue: University of Bayreuth, TAO Building, Prof.-Rüdiger-Bormann-Str. 1, 95447 Bayreuth

Program:

Tuesday, May 6th, 2025

13:00	Registration & Welcome	
		Prof. Dr.-Ing. Dieter Brüggemann, Director of the Center of Energy Technology (ZET) at the University of Bayreuth
13:30	Hydrogen Technologies – Research, Development and Testing at the Center of Energy Technology	
		Dr.-Ing. Matthias Welzl, Coordinator Hydrogen Research and Technologies, University of Bayreuth
14:00	Digital Twins and Optimization of Electrolysis Plants	
		Dr. Steven Percy, Senior Research Fellow, Victorian Hydrogen Hub (VH2), Swinburne University of Technology, Australia
14:30	Modeling and Simulation of Power-to-Gas Plants	
		Tim Herrmannsdörfer, M.Sc., Research Associate, University of Bayreuth
15:00	Coffee Break	
		(break 45 min)
15:45	The Hydrogen Performance Suite	
		Timothy Costello, Senior Consultant, Hydrogen and Sustainability, Siemens AG
16:15–16:45	BioH2-Region – combination of biogenic waste materials/residuals and renewable power for hydrogen production in rural areas in the pilot region Lower Bavaria and Upper Austria	
		Jana Wittola, M.Sc., Research Associate, Energy Technology Centre at Landshut University of Applied Sciences
18:30	Networking Dinner in Bayreuth	
		Engin's Ponte, Opernstr. 24-26, 95444 Bayreuth

Wednesday, May 7th 2025

09:00	Keynote: Driving the Energy Transition – How Hydrogen Complements EV and Renewable Integration *Prof. Dr. Mehdi Seyedmahmoudian, Director of Siemens Swinburne Energy Transition Hub, Swinburne University of Technology, Australia*
09:30	Unlocking Hydrogen as a Community Asset Enabling Smart Community Microgrids for a Net-Zero Future *Dr. Gokul Sidarth Thirunavukkarasu, Lecturer, Swinburne University of Technology, Australia*
10:00	Exploring Utility Grids through GridData's Digital Twin *Dr. Somesh Bhattacharya, Power Engineering Expert, GridData GmbH*
10:30	Coffee break
11:00	Discussion
12:00	Lunch at Mensa
13:30	Travel to Wunsiedel Energy Park *Bus transfer (travel time approx. 1 hr) will be organised by University of Bayreuth*
14:30	Visit of UBT Future Energy Lab Wunsiedel GmbH
15:30	Site tour: PEM Electrolysis Plant
17:00	Transfer to Bayreuth for Dinner
18:30	Networking Dinner in Bayreuth *Manns Bräu, Friedrichstr. 23, 95444 Bayreuth*

Thursday, May 8th 2025

9:00	Hydrogen-Battery Hybrid Energy Storage Systems *Manashaa Madhavan, PhD candidate, Swinburne University of Technology, Australia*
9:30	PEMFC Modeling, Temperature Control & Waste Heat Recovery *Mohammed Irfan S R, M.Sc., Research Associate, University of Bayreuth*
10:00	Coffee break
10:15	Performance Study of Various Fuel Cells on a System Testbench *Maximilian Kleber, M.Sc., Research Associate, Hochschule RheinMain*
10:45	Power Intermittency in PEM Electrolyzers Directly Coupled with Renewable Energy Sources *Petros Polykarpoulos, M.Sc., Research Associate, University of Bayreuth*
11:15	Summary and Conclusion *Dr.-Ing Matthias Welzl, Coordinator Hydrogen Research and Technologies, University of Bayreuth*
11:30	Lunch at Mensa
12:30–13:30	Lab tour (optional)