

2nd Annual Meeting

Contribution of Green Hydrogen to Carbon Neutrality

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Prof. Ulrich Rost

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Prof. Dr. Ulrich Rost is a professor of Hydrogen Technology and Energy Storage at Hochschule RheinMain (Rüsselsheim, Germany), where he joined the Faculty of Engineering in September 2025. He is a specialist in hydrogen-based energy systems, advanced electrolysis technologies, and fuel-cell research, with more than a decade of experience bridging academic research, industrial innovation, and European collaborative projects.

Prof. Rost studied Electrical Engineering at the University of Applied Sciences Dortmund (2005–2008) and continued with a degree in Energy Systems Engineering at the Westphalian University of Applied Sciences (2008–2011). He completed his PhD between the Politehnica University of Timișoara (Romania) and the Westphalian University, focusing on the development and characterization of carbon-nanofiber membrane electrode assemblies for proton-exchange-membrane (PEM) fuel cells. His doctoral work provided significant contributions to the optimization of electrode materials and the improvement of PEMFC performance and durability.

From 2011 to 2020, Prof. Rost was a researcher and project leader at the Westphalian Energy Institute, where he worked extensively on hydrogen energy systems, including fuel cells, water electrolysis, and innovative components for power-to-hydrogen technologies. He gained substantial industrial experience as a member of the management team at ProPuls GmbH (2020–2025), where he was responsible for strategic R&D, acquisition of research projects, and the development of next-generation hydrogen system technologies. During this period, he also served as a lecturer at the Westphalian University of Applied Sciences.

Prof. Rost has been involved in several major European R&I projects, including PRETZEL (development of a novel PEM electrolyser platform for 100-bar hydrogen production), NEWELY (advancing AEM electrolyser technology), PROMET-H2 (cost-efficient PEM water electrolysis for green hydrogen), and SEMPRES-BIO (innovative biomethane production concepts). He also serves on the Advisory Board of the European project SWEETHY, dedicated to seawater electrolysis technologies.

His research interests cover hydrogen production via water electrolysis, high-performance PEM and AEM electrolyser systems, fuel-cell materials, hydrogen storage solutions, and the integration of hydrogen technologies into future carbon-neutral energy systems. He is deeply motivated by the prospect of contributing to the transition toward a sustainable, resilient and low-carbon energy landscape.