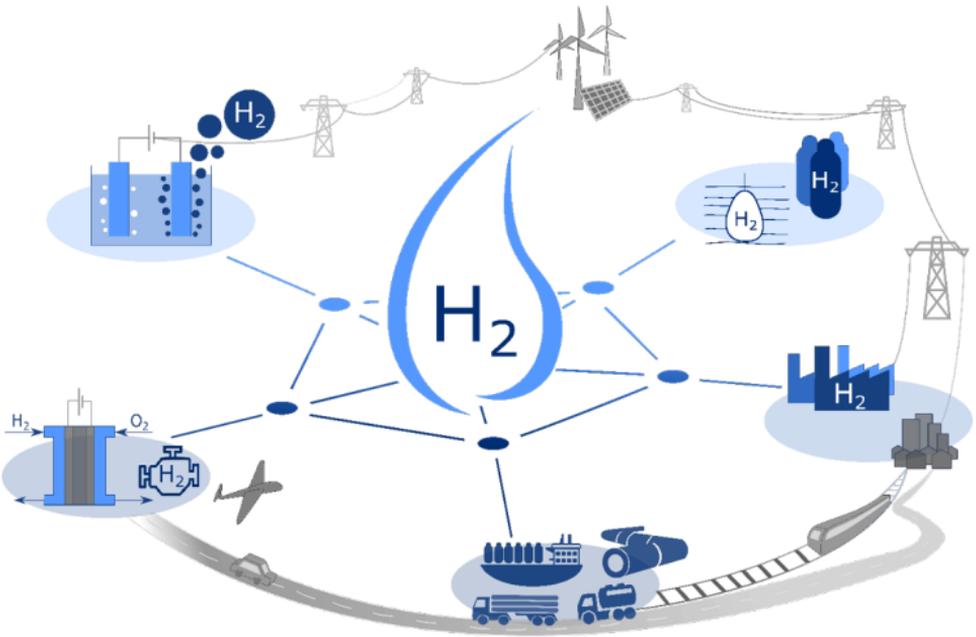


Program



Aachen Hydrogen Colloquium

Novotel | Peterstraße 66 | 52062 Aachen
May 03 - 04, 2022

TUESDAY, MAY 03, 2022

Main Hall Plenary Session



08:30 Welcome Prof. Dr. rer. nat. Dr. h. c. mult. Ulrich Rüdiger | Rector | RWTH Aachen University

08:40 Introduction Prof. Dr.-Ing. Stefan Pischinger | Head of Institute | TME, RWTH Aachen University

09:00 Keynote Dr. rer. nat. Günter Schmid | Principal Key Expert Research Scientist | Siemens AG

09:20 Keynote Stefanie Peters | Managing Partner | NEA Group | Member of the National Hydrogen Council

09:40 Keynote Thiebault Paquet | Head of Fuel Cell Business Group & Powertrain Division | Toyota Motor Europe

10:00 Panel discussion



10:30 BREAK



11:00 Poster Pitches / Session

12:00 LUNCH BREAK

Main Hall Session: PEM Electrolyser

Production, Integration and Application of Green Hydrogen in the Petrochemical Industry and for Mobility – Project 'REFHYNE' & 'REFHYNE'
Dr.-Ing. Frank R. Kießlich | Shell

Stack Sealing Solutions
Jürgen Emig | Freudenberg Sealing Technologies

Innovative hydrogen products from the Aachen district
Dr.-Ing. Elena Borgardt | iGas energy GmbH



14:30 BREAK

Session: Mobility Infrastructure

Perspectives on application and storage of H₂ in the maritime industry
S. Roosjen | Koedood Marine Group

Simulation and Optimization of Hydrogen Refueling Processes
Dr.-Ing. Manuel Gräber | TLK Energy GmbH

Analysis of the Requirements for the Conversion of Conventional Engine Test Benches/Test Fields for the Operation with Hydrogen (ICE, fuel cell, ...)
Dr. Nina Kopmann | FEV STS



16:30 BREAK

Session: Real Laboratories

Clean hydrogen in mobility and industry
Dr.-Ing. Christoph Erdmann | Messer Group

H₂HS – Fully integrated, decentralized, industrial H₂ system based on renewable energies in the district Heinsberg
Dr.-Ing. David Franzen | NEA GREEN, NEUMAN & ESSER GROUP

Development of Innovative Hydrogen Technologies
Shahrad Adjili | Kawasaki Gas Turbine Europe



18:30 BREAK + WALK



19:00 DINNER RATSHELLER | MARKT 40 | 52062 AACHEN

Second Hall Session: Composite Tanks / Pressure Vessels

Virtual manufacturing as an essential tool for the design, virtual testing and optimization of composite hydrogen tanks
Jörg Multhoff | ISATEC

Towpregs and its application in the manufacturing of hydrogen storage tanks
Kumar Jois | ITA, RWTH Aachen University

Increasing the volumetric and gravimetric density of hydrogen storage system architectures
Dr.-Ing. Hans-Christian Früh | VOSS Fluid

Session: Alternative Hydrogen Generation Routes

Sustainable biohydrogen production from green waste via hyperthermophilic fermentation
Berit Rothkranz | FH Aachen

Exploiting the full potential of a hydrogen-based economy by utilizing microbial catalysts
Prof. Dr.-Ing Jochen Büchs | AVT.BioVT, RWTH Aachen University

Electrooxidation of Alcohols as an alternative to oxygen evolution reaction in water splitting for hydrogen production
Prof. Dr. Corina Andronescu | University Duisburg Essen

Session: Techno-economic Analyses

Comparing Options for Hydrogen-based Imports – Cost and Efficiency
Philipp Stöcker | ISEA, RWTH Aachen University

Techno-economic Assessment of the Integration of Direct Air Capture and the Production of Hydrogen and Solar Fuels
Eric Prats-Salvado | Institute of Future Fuels, DLR

Techno-Economic Evaluation of Hydrogen Based Fuel Synthesis Production Routes
Stefan Weiske | IEK-14, Forschungszentrum Jülich

Main Hall

Session: Fuel Cell Components

Usage of hydrogen in the mobility sector with a focus on heavy-duty trucks
Henrik Mooi | Ballard Europe

Cathode air humidification – enabler for high efficiency and durability
Michael Baumann | MAHLE

Manufacturing related defects of metallic bipolar plates of PEM-FC
Sangwook Lee | Fraunhofer IPT

Innovative Joining Technology for Bipolar Plates
Dr. Christian Otten | LaVa-X-GmbH

BREAK

Session: Electrolyser Catalysts Materials

Precious Metals for Green Hydrogen Production
Christian Gebauer | Heraeus GmbH

Development of an Electrochemical Flow Cell for Performance Studies of Electro-catalytic Reactions
Clara Gohlke | AVT.ERT, RWTH Aachen University

Intermetallic compounds in electrocatalysis
Iryna Antonyshyn | Max Planck Institut

FeNi layered double hydroxides as efficient electrocatalysts for whole water splitting
Maïke Berger | ITMC, RWTH Aachen University

LUNCH BREAK

Main Hall

Plenary Session

Keynote Prof. Dr.-Ing. Katja Windt | Member of the Managing Board (CDO) | SMS group GmbH

Keynote Dr. Bernd Bauer | CEO | FUMATECH BWT GmbH

Panel discussion

Closing Address

Second Hall

Session: H2 in Gas Grids

Suitability of Steel Pipelines for Transport of Hydrogen
Dr. Michael Steiner | Open Grid Europe GmbH

Hydrogen-proofing pipelines with internal hydrogen permeation barriers produced by Extreme High-Speed Laser Material Deposition
Stephan Koß | DAP, RWTH Aachen University

Ceramic Membranes for Hydrogen Separation from Gas Mixtures
Prof. Dr. Wilhelm A. Meulenbergh | IEK-1, Forschungszentrum Jülich

Separation of gas mixtures from electrochemical processes – An example from CO₂ electrolysis
Matthias Heßelmann | AVT, RWTH Aachen University

Session: H2 Internal Combustion Energy

Hydrogen-ICE as a sustainable powertrain for construction machinery
Georg Töpfer | Deutz

HICE Specific Component Development at KEYOU – A Holistic PFI Module Design
Dr.-Ing. Thomas Ebert | KEYOU GmbH

Experimental Investigation of Hydrogen Diesel Dual Fuel Combustion
David Gordon | University of Alberta

Abnormal combustion phenomena of hydrogen fueled internal combustion engines with direct injection
Marcus Fischer | TME, RWTH Aachen University

08:30

10.30 

11:00

13:00 

14:00

14:20

14:40

15:00

APP FOR THE AACHEN HYDROGEN COLLOQUIUM



Agenda and program overview | Livestream for both rooms
Rating of presentations and posters | Embedding of short teaser videos for all posters



- AVAILABLE SOON -

POSTERS

Catalyst materials for Electrolyzers

Towards more efficient hydrogen production: The prospects of replacing the OER with glycerol oxidation Katharina Ebeling | AVT, RWTH Aachen University

Influence of Pretreatment of Nickel and Nickel-based Alloys on the OER Nikolas Mao Kubo | ITMC, RWTH Aachen University

Prometh2eus – Closing the Gap between Lab-Scale and Industrial Analyzing Techniques for Alkaline Water Electrolysis Niklas Thissen | AVT, RWTH Aachen University

Requirements on Dynamically Operated Polymer Electrolyte Membrane Electrolyzers Edward Rauls | IEK-14, Forschungszentrum Jülich

Protective coatings for porous transport layers in PEM electrolysis cells Tim Sievert | IEK-1, Forschungszentrum Jülich

Multiple Hydrogen Applications

Ultrapur water from seawater - raw material for green offshore hydrogen Dipl. Ing. Hans-Ulrich Baldes | Sobek-Tec

Searching for better cost-efficient hydrogen overwrapped composite vessels Nicolas Rozo Lopez | IKV, RWTH Aachen University

1D Dynamic Model for Electrochemical Hydrogen Separation Georgia Ioanna Prokopou | AVT.SVT, RWTH Aachen University

Optimal design of a Power-to-Methanol process with intermediate hydrogen storage Simone Mucci | AVT, RWTH Aachen University

Innovative joining processes for aluminum, copper, metals, ceramics and glasses for hydrogenic applications Dr. Ino J. Rass | EUROMAT GmbH

ISA-HyPLAN, a tool for system simulation of green hydrogen P2G plant concepts to facilitate implementation taking technical and economic aspects into account Oliver Jung | ISATEC GmbH

Piping and thermal management assemblies made of short fiber reinforced plastics in the Power of Balance Jörg Marx | Jopp Plastics Technology GmbH

Development of a compact measuring system for continuous real time measurement of ortho-para ratio in multiphase hydrogen Max Hannot | ZEA-1, Forschungszentrum Jülich

Fuel Cells

Materials development for Solid Oxide Cells – state-of-the-art and beyond Christian Lenser | IEK-1, Forschungszentrum Jülich

Towards a real-time capable control approach for automotive PEM fuel cell systems considering efficiency and degradation Thuc Anh Nguyen | IRT, RWTH Aachen University

Flying Fuel Cells and the challenges for bipolar plate forming Rainer Horstkotte | IPT, WZL RWTH Aachen University / Fraunhofer

Development of realistic accelerated stress tests for PEM fuel cells Paul Thiele | TME, RWTH Aachen University

Methods of Quality Assessment for Bipolar Plates Dennis Meelkop | IPT, WZL RWTH Aachen University / Fraunhofer

POSTERS

Techno-Economic Analyses

Sequential Investments in Hybrid PV-Wind Systems for Hydrogen Production: A Real Options Analysis for Germany and California Paul Fabianek | EONERC, RWTH Aachen University

Potential analysis of E-Methanol fuels based on green hydrogen: An ecological and economic well-to-wheel analysis Fabio Voit | FIW, RWTH Aachen University

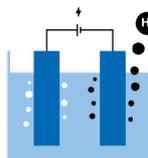
Techno-economic Assessment of Turquoise Hydrogen Till Gerstein | IEK-3, Forschungszentrum Jülich

Evaluation of the technical, economic and environmental potential of different hydrogen production pathways in Europe Jakob Kulawik | EONERC, RWTH Aachen University

ABOUT US

Hydrogen as an energy carrier offers the possibility of establishing a global and local CO₂-neutral energy economy. The **Hydrogen Clusters4Future** (Zukunftscluster Wasserstoff) bundle already existing expertise in the field of hydrogen technologies in and around Aachen with actors from Industry, Science and Society. All while considering the entire hydrogen life cycle – from production to storage and distribution to use.

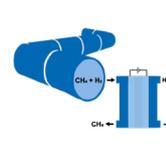
PROJECTS



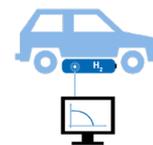
HylInnoLyze



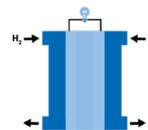
HylInnoNets



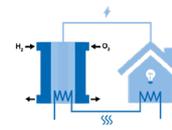
HylInnoSep



HylInnoTank



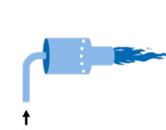
HylInnoPEM



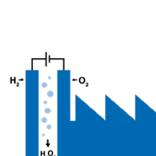
HylInnoSOFC



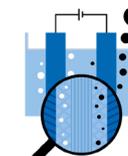
HylInnoICE



HylInnoBurn



HylInnoChem



HylInnoCells



HylInnoSys

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PARTICIPANTS

FULL PARTICIPATION 280,- €
Online Participation 99,- €

MEMBERS

FULL PARTICIPATION 196,- €
Online Participation 69,- €



UNIVERSITY/RESEARCH

FULL PARTICIPATION 140,- €
Online Participation 49,- €

DIRECTIONS



From Cologne (A4/E314)
Aachen - A544 Ausfahrt Aachen-Europaplatz - B1
Aachen Zentrum - Peterstraße

From Düsseldorf (A44/E40)
Heerlen - A544 Ausfahrt Aachen-Europaplatz - B1
Aachen Zentrum - Peterstraße

From Heerlen (A4/E314)
Düsseldorf/Köln - Ausfahrt Aachen-Zentrum-Würselen
- Krefelder Straße - Monheimsallee - Peterstraße



Aachen Mainstation is about 2 km away
Bus stop: Hansemanplatz

CONTACT



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GEFÖRDERT VOM



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