



DECHEMA

Gesellschaft für Chemische Technik
und Biotechnologie e.V.

PROGRAMME

2 December 2024

DECHEMA-Haus · Frankfurt/Main

GeCatS Infoday

**Catalysis and Process Engineering as Enablers
for Sustainable Energy Carriers and Chemicals**

https://dechema.de/en/GeCatS_Infoday2024.html



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GERMAN
CATALYSIS
SOCIETY

SCIENTIFIC COMMITTEE

SCIENTIFIC COMMITTEE

Dr. Maike Andresen	DECHEMA e. V., Frankfurt am Main
Prof. Dr. Malte Behrens	Christian-Albrechts-Universität zu Kiel
Dr. Karsten Büker	thyssenkrupp Uhde, Dortmund
Dr. Andreas Geisbauer	Clariant Produkte (Deutschland) GmbH, Bruckmühl
Prof. Dr. Udo Kragl	Universität Rostock
Prof. Dr. Regina Palkovits	RWTH Aachen University
Dr. Frank Rosowski	BASF at BasCat, UniCat - BASF JointLab, Berlin
Prof. Dr. Stephan Andreas Schunk	hte GmbH, Heidelberg
Dr. Andreas Vorholt	Max Planck Institute for Chemical Energy Conversion, Mühlheim a. d. Ruhr

REGISTRATION is open!

58. Jahrestreffen Deutscher Katalytiker

12 - 14 March 2025, Weimar



LECTURE PROGRAMME

Monday, 2 December 2024

09:30	Registration
10:30	Welcome and Introduction Prof. Dr. Stephan Andreas Schunk, hte GmbH, Heidelberg
	<i>Chair: Udo Kragl, University of Rostock</i>
10:45	Societal needs, political boundary conditions and technology options as preconditions for the production of sustainable fuels and chemicals Prof. Dr. Robert Schlögl, Präsident der Alexander von Humboldt-Stiftung, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin
11:15	Sustainable resource base for energy and chemicals in the broader perspective towards net zero emissions Prof. Dr.-Ing Daniela Thrän, Helmholtz-Zentrum für Umweltforschung GmbH, Leipzig
11:45	From Theory to Demo: Scaling up a new methanol process Dr. Marek Checinski, C1 Green Chemicals AG, Berlin
12:15	Poster Introduction Dr. Andreas J. Vorholt, Max-Planck-Institut für Chemische Energiekonversion, Mühlheim a. d. Ruhr
12:30	Working Lunch
13:00	Poster Session 1
13:45	Poster Session 2
	<i>Chair: Prof. Dr. Regina Palkovits, RWTH Aachen University</i>
14:30	From catalysis to sustainable chemicals within the planetary boundaries Prof. Dr. André Bardow, ETH Zürich
15:00	Smart Process Design for the Production of Green Chemicals and Fuels Dr. Karsten Büker, thyssenkrupp Uhde GmbH, Berlin
15:30	Coffee Break
	<i>Chair: Dr. Andreas Geisbauer, Clariant Produkte (Deutschland) GmbH</i>
15:45	The next era of mobility – powered by e-Fuels and e-chemicals Prof. Dr.-Ing. Peter Pfeifer, Ineratec, Karlsruhe
16:15	Chemical hydrogen storage – systems, challenges and innovations Prof. Dr. Peter Wasserscheid, Friedrich-Alexander-Universität Erlangen-Nürnberg
16:45	Closing Remarks Prof. Dr. Malte Behrens, Christian-Albrechts-Universität zu Kiel

POSTER PROGRAMME

P 01	Sustainable Building Blocks to Produce Carotenoids Roman Goy ¹ ¹ dsm-firmenich AG
P 02	Sorption enhanced ammonia synthesis – progress on sorptive ammonia separation Benedikt Steinbach ¹ ; Thomas Cholewa ¹ ; Vera Büttner ¹ ; Sinan Taş ¹ ; Florian Nestler ¹ ¹ Fraunhofer Institut für solare Energiesysteme
P 03	Catalytic NH₃ Decomposition Jan Florenski ¹ ; Rene Eckert ¹ ; Andreas Geisbauer ¹ ¹ Clariant BU Catalysts
P 04	Catalyst Testing for Methanol Production using Real Cleaned Steel-Mill-Gases Kai Girod ¹ ; Heiko Lohmann ¹ ¹ Fraunhofer UMSICHT
P 05	H₂-efficient, Non-oxidative Conversion of Methanol to Dimethyl Ether, Methyl Formate and Dimethoxymethane over Cu/Hβ Catalyst Natalia Simitsis ¹ ; Chalachew Mebrahtu ¹ ; Regina Palkovits ² ¹ Forschungszentrum Jülich GmbH; ² Forschungszentrum Jülich GmbH; RWTH Aachen University
P 06	Chemical Hydrogen Storage by Catalytic Hydrogen Loading and Release in the LOHC System Benzyltoluene Barbara Bong ¹ ; Chalachew Mebrahtu ¹ ; Regina Palkovits ¹ ¹ Forschungszentrum Jülich GmbH
P 07	SAFari project - Sustainable Aviation Fuels based on Advanced Reactions and Process Intensification Franz Mantei ¹ ; Malte Gierse ¹ ; Achim Schaadt ¹ ; Andreas Geisbauer ² ¹ Fraunhofer Institute for Solar Energy Systems ISE; ² Clariant Produkte (Deutschland) GmbH
P 08	Powder metallurgically modified foams as Catalytic Carriers: Enhancing Performance through Porosity Felix Neupert ¹ ; Nadine Eißmann ¹ ; Tilo Büttner ¹ ; Andreas Tillmann ² ; Thomas Weißgärber ³ ¹ Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Dresden Branch; ² Alantum Europe GmbH; ³ Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Dresden Branch; TUD Dresden University of Technology, Faculty Mechanical Engineering, Institute of Materials Science, Chair Powder Metallurgy
P 09	Performance of CoMn-Na Catalysts for the Production of Lower Olefins from Synthesis Gas Johannes Dahlhues ¹ ; Heiko Lohmann ¹ ; Stefan Kaluza ² ¹ Fraunhofer UMSICHT; ² Hochschule Düsseldorf, University of Applied Sciences

POSTER PROGRAMME

P 10	Techno-economic comparison of different Power-to-DME process routes Malte Gierse ¹ ; Silvan Feuerbach ¹ ; Florian Nestler ¹ ¹ Fraunhofer Institute for Solar Energy Systems ISE
P 11	Flexibility-requirements of methanol synthesis for the two-step dimethyl ether production based on renewable power Markus Hübner ¹ ; Sarah Deutz ¹ ; Andreas Peschel ² ¹ Forschungszentrum Jülich GmbH; ² Forschungszentrum Jülich GmbH; RWTH Aachen University
P 12	Structure-activity relationship of heterogeneous catalysts for Dimethyl ether steam reforming Nick Heimig ¹ ; Tobias Duyster ² ; Chalachew Asmelash ³ ; Regina Palkovits ² ¹ RWTH Aachen University; ² RWTH Aachen University; Forschungszentrum Jülich GmbH; ³ Forschungszentrum Jülich GmbH
P 13	Solid Molecular Catalysts for the Conversion to and of Renewable Fuels Keanu V. A. Birkelbach ¹ ; Jeroen T. Vossen ² ; Peter J. C. Hausoul ³ ; Andreas J. Vorholt ² ; Regina Palkovits ⁴ ¹ Forschungszentrum Jülich GmbH; ² Max Planck Institute for Chemical Energy Conversion; ³ RWTH Aachen University; ⁴ RWTH Aachen University; Forschungszentrum Jülich GmbH
P 14	Enabling Load-Flexible Methanol Synthesis from CO₂ Luisa Failing ¹ ; Hannes Stadler ¹ ; Andreas Peschel ² ¹ Forschungszentrum Jülich GmbH; ² Forschungszentrum Jülich GmbH; RWTH Aachen University
P 15	Hydrogen and syngas production from biomass via formic acid and methyl formate Fabian Kroll ¹ ; Markus Schörner ¹ ; Jakob Albert ² ; Florian Kohler ³ ; Matthias Schmidt ³ ; Patrick Schühle ⁴ ¹ Helmholtz-Institut Erlangen-Nürnberg für Erneuerbare Energien; ² Universität Hamburg; ³ OxFa GmbH; ⁴ Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
P 16	Dynamic Operation of CO₂ Methanation Patrick Billu ¹ ; Hannes Stadler ¹ ; Andreas Peschel ² ¹ Forschungszentrum Jülich GmbH; ² Forschungszentrum Jülich GmbH; RWTH Aachen University
P 17	Transient State Simulation of a Fixed Bed Reactor Jonathan Hunsicker ¹ ; Alexander Fabricius ² ; Norbert Kockmann ¹ ; Stephan A. Schunk ³ ; Thorsten Röder ² ¹ TU Dortmund University; ² University of Applied Sciences; ³ hte GmbH
P 18	Supported Bimetallic FeAg Catalysts for the Selective Acetylene Hydrogenation under Industrial Relevant Front-End Conditions Hannah Lamers ¹ ¹ TU Darmstadt

POSTER PROGRAMME

- P 19 **Selective Production and Elongation of Hydrocarbons from Synthesis Gas via a Three-Step Reaction Cycle**
 Jeroen T. Vossen¹; Walter Leitner¹; Andreas J. Vorholt¹
¹ Max Planck Institute for Chemical Energy Conversion
- P 20 **Utilization of redox cyclability of a modified NiMnAl-spinel catalyst for the methanation of CO₂**
 Dennis Weber¹; Tanja Franken²
¹ Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU);
² Technische Universität Darmstadt
- P 21 **Enabling High-Pressure Ammonia Reforming: Setup Development, Validation, and Kinetic Insights**
 Ceyhun Ege Köseoglu¹; Michael Geske¹; Grigorios Kolios²; Jan Pottbacker²; Martin Lerch³; Sophie Hund³; Michael Krämer²; Frank Rosowski²
¹ BasCat - UniCat BASF Joint Lab, Technische Universität Berlin;
² BASF SE, Group Research; ³ Technische Universität Berlin
- P 22 **Light-assisted low-pressure methanol synthesis**
 Matthias Rehner¹; Junhao Huang¹; Jennifer Strunk¹
¹ Technische Universität München
- P 23 **CHEMampere: Technologies for sustainable chemical production with renewable electricity and CO₂, N₂, O₂, and H₂O**
 Paul Rößner¹; Michael Minas¹; Peter Birke¹; Alexander Sauer¹; Andreas Friedrich¹; Elias Klemm¹
¹ Universität Stuttgart
- P 24 **In-situ XAS investigation of Co-based Fischer-Tropsch model catalysts**
 Rabia Ilica¹; Anna Zimina¹; Enrico Sireci¹; Cherie Hsu²; Erisa Saraci¹; Moritz Wolf²; Felix Studt¹; Jan-Dierk Grunwaldt¹
¹ Karlsruhe Institute of Technology (KIT) / Institute for Chemical Technology and Polymer Chemistry (ITCP); ² Karlsruhe Institute of Technology (KIT)

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ANNOUNCEMENT

8 – 10 September 2025
 Lisbon Congress Centre · Portugal

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 8th European Congress of Applied Biotechnology (ECAB) &
 3rd Iberoamerican Congress on Chemical Engineering (CIBIQ)

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ORGANISER AND CONTACT

DECHEMA e.V.
Theodor-Heuss-Allee 25
60486 Frankfurt am Main

Simone Kinkel
Phone: +49 (0)69 7564-581
Email: simone.kinkel@dechema.de
www.dechema.de