DECHEMA

VDI

PROGRAMME

15 – 17 March 2023
congress centrum neue weimarhalle

56. Jahrestreffen Deutscher Katalytiker

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GeCATS GERMAN CATALYSIS SOCIETY

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INVITATION / GENERAL INFORMATION

Dear colleagues and friends of catalysis!

It gives me great pleasure to invite you all to the 56. Jahrestreffen Deutscher Katalytiker. This year's meeting will take place from 15 – 17 March in the beautiful city of Weimar, as usual, and will stimulate and promote the exchange of ideas between scientists from different fields of catalysis research and application.

This is a wonderful opportunity to bring together basic research and practice, to network, to exchange ideas beyond one's own area of expertise and to enter into new collaborations. This also succeeds in advancing catalysis research as a whole, improving existing processes and finding new solutions to urgent problems. Global changes make it clear that progress is urgently needed, especially in our field of research. Moreover, the future will be strongly characterized by the discovery, development and implementation of novel catalytic reactions to address challenges such as climate change and megatrends such as sustainability while the world's population grows.

As we all know, catalysis lowers activation barriers of chemical processes and enables more energy-efficient and selective chemical reactions compared to uncatalyzed reactions. Therefore, this research area remains a perennial hot topic in science and industry.

The 56. Jahrestreffen Deutscher Katalytiker inevitably act as a catalyst among us scientists ourselves. So be welcome and do not hesitate and join us to discuss recent academic and industrial innovations of catalysis research.

Matthias Beller
on behalf of the organization committee

VENUE

weimar GmbH Gesellschaft für Marketing, Kongress- und Tourismusservice
congress centrum weimarhalle
UNESCO-Platz 1
99423 Weimar
www.weimarhalle.de

CONFERENCE OFFICE HOURS

Tuesday, 14 March 2023	15:00 – 18:00
Wednesday, 15 March 2023	10:00 – 20:00
Thursday, 16 March 2023	08:30 – 19:00
Friday, 17 March 2023	09:00 – 13:15

INTERNET ACCESS

W-LAN access throughout the congress venue is available and free of charge. As the W-LAN access can be used by all visitors, a loss of efficiency is possible. The wireless network is available on the ground floor exhibition.
Network: **DECHEMA2023**

ORGANISER

DECHEMA e. V.
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As of February 2023, subject to alterations. Submission title and authors information as given by the submitter. No proof by DECHEMA.

POSTER EVENTS / NFDI4CAT WORKSHOP

WEDNESDAY, 15 MARCH 2023 — 17:45 – 18:45

Posterworkshops

Organised by YounGeCatS German Catalysis Society

Posterworkshop 1	Understanding Catalysts by Advanced Characterization	Kleiner Saal
Posterworkshop 2	Ammonia as Alternative Energy Carrier	Seminar 1+2
Posterworkshop 3	Transforming Carbon Dioxide into Valuables	Seminar 3
Posterworkshop 4	Data Driven Catalysis	Seminar 4
Posterworkshop 5	Selective Redox Processes by Catalysis	Seminar 5

WEDNESDAY, 15 MARCH 2023 — 19:00 – 21:00

Posterparty A

Learn about the latest scientific results and discuss them with the poster authors. Enjoy the exchange of ideas with fellow researchers over a cold beer and pretzels.
The authors are requested to be present at their poster(s) for discussion during the poster party.

THURSDAY, 16 MARCH 2023 — 12:30 – 14:30

Posterparty B

Discuss with the poster authors some insights from their research over a small lunch.
The authors are requested to be present at their poster(s) for discussion during the poster party.

THURSDAY, 16 MARCH 2023 — 16:30 – 17:30

NFDI4Cat Workshop

NFDI4Cat

Pioneering digital catalysis

In this workshop you will learn about the key elements of Research Data Management (RDM) and the ways efficient RDM improves the research process. During this workshop the NFDI4Cat Team will provide insights into the first steps towards implementing the FAIR principles in everyday laboratory activities. The advantages of applied data management will be showcased using hands-on examples from the NFDI4Cat community.

Join the workshop for an insight into NFDI4Cat and how you can pioneer the digital future of catalysis.

More information: https://nfdi4cat.org/en

CAREER FORUM / GECATS PARTY / AWARDS

THURSDAY, 16 MARCH 2023 — 17:35 – 19:00

Career Forum

Organised by YounGeCatS German Catalysis Society

“Paving your future career”

This year’s YounGeCatS career forum focuses on your future career and how to develop it. A market featuring company booths will be held to provide an insight into career paths in the industry. In parallel, possible career paths to professorship (i.e. junior professorship, junior research group leader, etc.) are highlighted in short presentations. All in all, participants are given the chance to get a comprehensive picture of possible career paths in industry and academia. So get inspired, get informed, and pave your future career!

Speaker:
Prof. Jennifer Strunk, LIKAT Rostock
Dr. Thomas Sheppard, KIT Karlsruhe

THURSDAY, 16 MARCH 2023 — 19:30 – 00:00

Traditional GeCatS Party

This year, the traditional GeCatS Party will take place again in the Weimarhalle. Join us on Thursday, 16 March 2023, 19:30 h and enjoy a great evening with colleagues, friends and business partners in a relaxed atmosphere.

Under the motto “Thuringia meets the world”, you can expect a selection of delicacies that suit the tastes of all attendees (vegetarian options will also be available). In addition to the award ceremonies, there will once again be music to dance to.

As capacity is limited, don’t miss this opportunity and book your ticket.

Ticket price: 49 € incl. Buffet and 2 Drinks

POSTER PRIZES

Don´t forget to vote for your favorite poster! The five best posters will be selected for a poster prize and will be awarded at the GeCatS Party.

Please vote for your favorite Poster

Deadline: Thursday, 16 March 2023, 16:30 h

Scan me!

AWARDS

These traditional awards will be presented at the GeCatS Party.

– Rote Löwen
– Alwin-Mittasch-Prize
– Jochen Block-Prize (Handover already Thursday Morning)

PLENARY LECTURES / COMMITTEE

PLENARY LECTURES

Challenging the Borders of Chemical Reactivity
Prof. Dr. Karl Anker Jørgensen, Aarhus University/DK

Enzyme Discovery & Engineering to Create Biocatalysts Suitable for Efficient Applications in Organic Chemistry
Prof. Dr. Uwe Bornscheuer, University of Greifswald/D

Using Carbon Model Supports to Understand Particle Size and Promotor Effects in CO_2 and CH_4 Conversion
Prof. Dr. Petra de Jongh, Utrecht University/NL

Beyond Static Models: Dynamics in Interfacial Catalysis
Prof. Dr. Beatriz Roldán Cuenya, Fritz Haber Institute of the Max Planck Society, Berlin/D

Atom Precision in Catalysis: a Precondition to Successful Efforts in Sustainability and Digitalization
Prof. Dr. Stephan Andreas Schunk, hte GmbH, Heidelberg/D

SCIENTIFIC COMMITTEE

Malte Behrens	Universität Kiel
Matthias Beller	Leibniz-Institut für Katalyse e.V., Rostock (Chairman)
Christina Jungfer	DECHEMA e.V., Frankfurt am Main
Richard Walter Fischer	Clariant Produkte (Deutschland) GmbH, Bruckmühl and TU München
Udo Kragl	Universität Rostock
Johannes A. Lercher	TU München
Stefan Mecking	Universität Konstanz
Martin Muhler	Ruhr-Universität Bochum
Regina Palkovits	RWTH Aachen
Frank Rosowski	TU Berlin BasCat UniCatBASF JointLab
Nicole J. Schödel	Linde AG, Pullach
Peter Wasserscheid	Universität Erlangen-Nürnberg
Dorit Wolf	Evonik Resource Efficiency GmbH, Hanau

The climate is changing.

So are we.

The greatest challenge of the 21st century is here. So, to protect the climate, we're changing. From reducing our emissions to embracing renewable energy; from supporting the circular economy with recycling innovations to helping consumers reduce their own carbon footprints; the changes are reaching deep into our organization. Research and development make a valuable contribution to reach our ultimate goal: net zero emissions by 2050.

Find out more at
basf.com/change

BASF
We create chemistry

PROGRAMME AT A GLANCE

Wednesday, 15 March 2023

	Großer Saal	
13:15	**Welcome**	
Chair:	*Beller*	
13:30	PLENARY LECTURE Jørgensen	
14:15	Room change	
	Großer Saal	Seminarhaus
Topic	**Porous Materials/ Zeolites/MOFs**	**Catalysis for Polymer Synthesis/Recycling**
Chair:	*Palkovits*	*Kragl*
14:20	Saraçi	Fuchs
14:40	Khare	Lehnertz
15:00	Zhao	Baur
15:20	Coffee Break	
	Großer Saal	
Chair:	*Behrens*	
15:50	PLENARY LECTURE de Jongh	
16:35	Room change	
	Großer Saal	Seminarhaus
Topic	**Hydrogen Generation/ Synthesis Gas**	**Catalyst Preparation**
Chair:	*Wasserscheid*	*Mecking*
16:40	Fischer	Marshall
17:00	Nathrath	Li
17:20	Djoko Tameu	Modl
17:40	Room change	
17:45	**Poster Workshops**	
18:45	Mitgliederversammlung (18:45 – 19:30)	
19:00	**Poster Party A with Pretzel & Beer**	
21:00	End of day 1	

Thursday, 16 March 2023

	Großer Saal	
Chair:	*Lercher*	
08:30	PLENARY LECTURE Schunk	
09:15	Jochen Block-Prize Lecture and Award Ceremony Andronescu	
	Großer Saal	Seminarhaus
09:55	Room change	
Topic	**Selective Hydrogenation/ Dehydrogenation**	**Digitalization of Catalysis-Related Sciences**
Chair:	*Rosowski*	*Lercher*
10:00	Fedorov	Behr
10:20	Asmelash	Kreitz
10:40	Wolf	Plessow
11:00	Coffee Break	
Topic	**Selective Hydrogenation/ Dehydrogenation**	**Photochemistry and Bioresources**
Chair:	*Rosowski*	*Vogt*
11:30	Topf	Enders
11:50	Chakrabortty	Vocke
12:10	Zhao	Dittmann
12:30	**Lunch Break and Poster Party B**	
	Großer Saal	
Chair:	*Muhler*	
14:30	PLENARY LECTURE Roldan	
15:15	Room change	
	Großer Saal	Seminarhaus
Topic	**Selective Oxidation/ Reduction**	**Electrocatalysis**
Chair:	*Muhler*	*Francke*
15:20	Rüther	Pittkowski
15:40	Klag	Kaeffer
16:00	Amakawa	Tigges
16:20	Coffee Break	
	Kleiner Saal	Seminarhaus
Topic		**Electrocatalysis**
Chair:		*Francke*
16:50	**NFDI4Cat Workshop** (16:30 – 17:30)	Mechler
17:10		Heppe
17:30	Room change	
17:35	**YounGeCatS Career Forum** (17:35 – 19:00)	
19:30	**GeCatS Party with Award Ceremony**	

Friday, 17 March 2023

	Großer Saal	
Chair:	*Beller*	
09:00	Alwin-Mittasch-Prize Lecture Muhler	
09:45	Room change	
	Großer Saal	Seminarhaus
Topic	**Academic-Industrial Catalysis Research**	**Reaction Engineering**
Chair:	*Wolf*	*Schödel*
09:50	Baumgarten	Lacerda de Oliveira Campos
10:10	Sang	Gros
10:30	Schwiderowski	Solymosi
10:50	Coffee Break	
Topic	**In Situ Characterisation/ New Method**	**Reaction Engineering**
Chair:	*Behrens*	*Schödel*
11:20	Lunkenbein	Aquino
11:40	Duarte Correa	Borchardt
12:00	Hess	Anderson
12:20	Room change	
	Großer Saal	
Chair:	*Kragl*	
12:25	PLENARY LECTURE Bornscheuer	
13:10	**Closing remarks**	
13:15	End of conference	

PROGRAMME AT A GLANCE

Wednesday, 15 March 2023

Room: Großer Saal

Chair: M. Beller[1]; [1]Leibniz-Institut für Katalyse (LIKAT), Rostock/D

13:15 **Welcome**

13:30 **PLENARY LECTURE**
Challenging the Borders of Chemical Reactivity
K. Anker Jørgensen[1]; [1] Aarhus University, Aarhus C/DK

14:15 ROOM CHANGE

Room: Großer Saal

POROUS MATERIALS/ZEOLITES/MOFS

Chair: R. Palkovits[1]; [1]RWTH Aachen University, Aachen/D

14:20 **Impact of Fe speciation in Fe/MFI on the oxidative cleavage of vicinal diols**
P. Treu[1]; B. Sarma[1]; E. Saraçi[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

14:40 **Hydrogen Activation on NaY-encapsulated Mixed Transition Metal Sulfide Clusters**
R. Khare[1]; R. Weindl[1]; C. Gross[1]; A. Jentys[1]; J. Lercher[1]; [1] TU München, Garching/D

15:00 **Modification of zeolite confinement by extra-framework clusters promoting alkane cracking**
R. Zhao[1]; Y. Zhang[1]; M. Sanchez-Sanchez[1]; R. Bermejo-Deval[1]; Y. Liu[1]; J. Lercher[1]; [1] Technische Universität München, Garching b. München/D

15:20 COFFEE BREAK

Room: Großer Saal

Chair: M. Behrens[1]; [1]Christian-Albrechts-Universität zu Kiel, Kiel/D

15:50 **PLENARY LECTURE**
Using Carbon Model Supports to Understand Particle Size and Promotor Effects in CO_2 and CH_4 Conversion
P. de Jongh[1]; [1] Utrecht University, Utrecht/NL

16:35 ROOM CHANGE

LECTURE PROGRAMME

Wednesday, 15 March 2023

Room: Seminarraum 1+2

CATALYSIS FOR POLYMER SYNTHESIS/RECYCLING

Chair: U. Kragl[1]; [1]University of Rostock, Rostock/D

14:20 **Cobalt mediated copolymerization of carbon monoxide to photodegradable polyethylene**
A. Fuchs[1]; S. Mecking[1]; [1] University of Konstanz, Konstanz/D

14:40 **Chemical Recycling of thermoplastic Polymers with solid Catalysts**
M. Lehnertz[1]; R. Palkovits[1]; [1] RWTH Aachen University - Institut für Technische und Makromolekulare Chemie (ITMC), Aachen/D

15:00 **How to make polyethylene photodegradable and more: Ni(II) catalyzed non-alternating copolymerization of ethylene and carbon monoxide**
M. Baur[1]; R. Habé[1]; N. Mast[1]; S. Mecking[1]; [1] University of Konstanz, Konstanz/D

15:20 COFFEE BREAK

Wednesday, 15 March 2023

Room: Großer Saal

HYDROGEN GENERATION/ SYNTHESIS GAS

Chair: P. Wasserscheid[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

16:40 **CO_2 reduction over Mo_2C based catalysts**
W. Marquart[1]; L. Ngema[1]; M. Claeys[1]; N. Fischer[1]; [1] University of Cape Town, Rondebosch, Cape Town/ZA

17:00 **A highly efficient catalyst coating for plate reactors in perhydro-benzyltoluene dehydrogenation**
P. Nathrath[1]; B. Baier[1]; Y. Raed Ramzi[1]; J. Müller-Ebhardt[2]; P. Wasserscheid[1]; E. Hübner[3]; P. Schühle[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [2] Kelvion PHE GmbH, Sarstedt/D; [3] Fraunhofer Heinrich-Hertz Institute, Goslar/D

17:20 **Polyoxometalate boosting the light-harvesting ability of graphitic carbon nitride for photocatalytic water splitting: in the energy crisis context**
S. Djoko Tameu[1]; R. Schomäcker[1]; [1] TU-Berlin, Berlin/D

17:40 ROOM CHANGE

Room: Seminarraum 1+2, 3, 4, 5, Kleiner Saal

17:45 **Poster Workshops**

Room: Großer Saal

18:45 **Mitgliederversammlung** (18:45 – 19:30)

19:00 **Poster Party A with Pretzel & Beer** (19:00 – 21:00)

Wednesday, 15 March 2023

Room: Seminarraum 1+2

CATALYST PREPARATION

Chair: S. Mecking[1]; [1]University of Konstanz, Konstanz/D

16:40 **Playing seesaw with metal oxides and zeolites towards the direct CO_2 hydrogenation to light olefins**
C. Marshall[1]; F. Ennenbach[1]; D. Laudenschleger[2]; N. Pfister[1]; G. Koch[1]; F. Girgsdies[1]; H. Ruland[2]; R. Schlögl[1]; A. Trunschke[1]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D

17:00 **Catalytic Study of Pd 2D Thin Film on Structured Layers**
Z. Li[1]; E. Öztuna[2]; C. Rohner[1]; A. Steigert[3]; M. Muske[3]; M. Arztmann[3]; S. Wrabetz[1]; J. Kröhnert[1]; M. Dimitrakopoulou[1]; M. Stredansky[1]; L. Thum[1]; W. Frandsen[1]; A. Hammud[1]; F. Girgsdies[1]; D. Delgado Munoz[1]; J. Frisch[3]; T. M. Kokumai[3]; M. Bär[4]; S. Raoux[5]; T. Schmidt[1]; M. Prieto[1]; A. Bergmann[1]; H. Kuhlenbeck[1]; O. Vinogradova[1]; V. J. Bukas[1]; T. Lunkenbein[1]; A. Trunschke[1]; A. Knop-Gericke[6]; R. Schlatmann[3]; K. Reuter[1]; B. Roldán Cuenya[1]; R. Schlögl[1]; D. Amkreutz[3]; K. Skorupska[1]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] Fritz-Haber-Institut der Max-Planck-Gesellschaft; Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/D; [3] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/D; [4] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH; Friedrich-Alexander-Universität Erlangen-Nürnberg; Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy (HI ERN), Berlin/D; [5] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH; Humboldt University of Berlin/D; [6] Max Planck Institute for Chemical Energy Conversion, Mülheim/D

17:20 **Impinging Jet Microreactor for continuous high-throughput synthesis of Pt and Pt – Ni particles as electrocatalysts**
T. Modl[1]; N. Lynn[1]; S. Schmitz-Stöwe[1]; T. Schwarz[1]; K. Stöwe[1]; [1] Technische Universität Chemnitz, Chemnitz/D

17:40 ROOM CHANGE

Thursday, 16 March 2023

Room: Großer Saal

Chair: J. Lercher[1]; [1] Technische Universität München, Garching/D

08:30 **PLENARY LECTURE**
Atom Precision in Catalysis: a Precondition to Successful Efforts in Sustainability and Digitalization
S. Schunk[1]; [1] hte GmbH, Heidelberg/D

09:15 **Jochen Block Prize Lecture and Award Ceremony**
C. Andronescu[1]; [1] Universität Duisburg-Essen, Duisburg/D

09:55 ROOM CHANGE

Room: Großer Saal

SELECTIVE HYDROGENATION/DEHYDROGENATION

Chair: F. Rosowski[1]; [1]BasCat - UniSysCat BASF JointLab, TU Berlin, Berlin/D

10:00 **An unexpected pathway of CO_2 hydrogenation into hydrocarbons over Fe-based catalysts**
A. Fedorov[1]; H. Lund[1]; V. Kondratenko[1]; E. Kondratenko[1]; D. Linke[1]; [1] Leibniz Institut für Katalyse e.V., Rostock/D

10:20 **Understanding promotional effects of trace oxygen in CO_2 methanation over Ni/ZrO_2 catalysts**
J. Ren[1]; F. Zeng[1]; C. Asmelash[1]; R. Palkovits[1]; [1] RWTH Aachen University, Aachen/D

10:40 **Bimetallic platinum rhenium catalyst for efficient low temperature dehydrogenation of perhydro benzyltoluene**
D. Strauch[1]; M. Wolf[2]; [1] Helmholtz-Institut Erlangen-Nürnberg, Erlangen; Forschungszentrum Jülich/D; [2] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

11:00 COFFEE BREAK

Room: Großer Saal

SELECTIVE HYDROGENATION/DEHYDROGENATION

Chair: F. Rosowski[1]; [1] BasCat - UniSysCat BASF JointLab, TU Berlin, Berlin/D

11:30 **Homogeneous Chromium- and Tungsten-Based (Transfer) Hydrogenation Catalysts**
C. Topf[1]; [1] Johannes Kepler University Linz, Linz/A

11:50 **Easily tunable P-chiral ligands for enantioselective hydrogenation of substituted enamides**
S. Chakrabortty[1]; K. Konieczny[1]; B. Müller[1]; S. Tin[1]; E. Baráth[1]; J. de Vries[1]; [1] Leibniz Institut für Katalyse e.V., Rostock/D

12:10 **The effects of support in ZnOx/zeolite catalysts on the active species and product formation in propane and isobutane dehydrogenation**
D. Zhao[1]; M. Gao[2]; X. Tian[3]; D. Doronkin[4]; S. Han[1]; U. Rodemerck[1]; D. Linke[1]; M. Ye[2]; G. Jiang[5]; H. Jiao[1]; E. Kondratenko[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian/CN; [3] Institute of Molecular Science, Shanxi University, Taiyuan/CN; [4] Institute of Catalysis Research and Technology and Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [5] State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing/CN

12:30 **Lunch Break and Poster Party B**

Thursday, 16 March 2023

Room: Seminarraum 1+2

DIGITALIZATION OF CATALYSIS-RELATED SCIENCES

Chair: J. Lercher[1]; [1] Technische Universität München, Garching/D

10:00 **Natural Language Processing-Based Term Extraction for Concept Enrichment of Ontologies for Catalysis Research**
A. Behr[1]; M. Ben Moussa[1]; M. Völkenrath[1]; N. Kockmann[1]; [1] TU Dortmund, Dortmund/D

10:20 **Coupling Experimental and Ab-initio Thermochemistry of Adsorbates in a Generalized Thermochemical Hierarchy**
B. Kreitz[1]; F. Goldsmith[1]; [1] Brown University, Providence/USA

10:40 **Structure and Composition of PtPd Particles under Reaction Conditions: Experiment and Simulation**
P. Plessow[1]; [1] Karlsruher Institut für Technologie (KIT), Eggenstein-Leopoldshafen/D

11:00 COFFEE BREAK

Room: Seminarraum 1+2

PHOTOCHEMISTRY AND BIORESOURCES

Chair: D. Vogt[1]; [1] TU Dortmund, Dortmund/D

11:30 **Selective Newman-Kwart Rearrangement under Mild Conditions Enabled by Heterogeneous Photocatalysis and Electrochemical Catalysis**
P. Enders[1]; K. Prane[2]; E. Schönke[1]; R. Francke[1]; [1] Leibniz Institute for Catalysis e.V., Rostock/D; [2] Latvian Institute of Organic Synthesis, Riga/LV

11:50 **Composites of Plasmonic Metal Nanoparticles on Mesoporous Titanium Dioxide for Photocatalytic Reduction Reactions**
H. Vocke[1]; N. Moustakas[2]; A. Kutuzova[2]; D. Heyl[2]; T. Peppel[2]; D. Taffa[1]; J. Strunk[2]; M. Wark[1]; [1] Carl von Ossietzky Universität Oldenburg/D; [2] Leibniz-Institute for Catalysis (LIKAT), Rostock/D

12:10 **Improved C2-Conversion to Renewable Aromatics**
D. Dittmann[1]; C. Rieg[1]; Z. Li[1]; E. Kaya[1]; M. Dyballa[1]; [1] Universität Stuttgart, Stuttgart/D

Thursday, 16 March 2023

Room: Großer Saal

Chair: M. Muhler[1]; [1] Ruhr University Bochum, Bochum/D

14:30 **PLENARY LECTURE**
Beyond Static Models: Dynamics in Interfacial Catalysis
B. Roldan Cuenya[1]; [1] Fritz Haber Institute of the Max Planck Society, Berlin/D

15:15 ROOM CHANGE

Room: Großer Saal

SELECTIVE OXIDATION/ REDUCTION

Chair: M. Muhler[1]; [1]Ruhr University Bochum, Bochum/D

15:20 **Niobium-insertion into αII-$VOPO_4$: Tuning catalytic properties for selective oxidation**
F. Rüther[1]; R. Machado[1]; E. Gioria[1]; S. Kunz[2]; K. Wittich[3]; P. Löser[3]; R. Naumann d'Alnoncourt[1]; M. Geske[1]; S. Schunk[3]; R. Glaum[2]; F. Rosowski[4]; [1] BasCat - UniCat BASF JointLab, Technische Universität Berlin/D; [2] Rheinische Friedrich-Wilhelms-Universität Bonn/D; [3] hte GmbH, Heidelberg/D; [4] BASF SE, Catalysis Research, Ludwigshafen/D

15:40 **Integral and spatially-resolved insights into structure and activity of mixed metal oxide catalysts during selective olefin oxidation**
L. Klag[1]; T. Sheppard[1]; J. Grunwaldt[1]; [1] Karlsruher Institut für Technologie (KIT), Karlsruhe/D

16:00 **K-promoter in Industrial Acrolein Catalysts**
K. Amakawa[1]; J. Mauss[1]; P. Müller[1]; B. Hinrichsen[1]; S. Hirth[1]; A. Bader[1]; [1] BASF SE, Ludwigshafen/D

16:20 COFFEE BREAK

Room: Kleiner Saal

16:30 **NFDI4Cat Workshop**
„Pioneering digital catalysis"

17:30 ROOM CHANGE

Room: Seminarhaus

17:35 **YounGeCatS Career Forum "Paving your future career"** *(17:35 – 19:00)*

Room: Großer Saal

19:30 **GeCatS Party with Award Ceremony**

LECTURE PROGRAMME

Thursday, 16 March 2023

Room: Seminarraum 1+2

ELECTROCATALYSIS

Chair: Robert Francke[1] ; [1]Leibniz-Institut für Katalyse e. V., Rostock/D

15:20 **Operando characterization of carbon-supported metal nanoparticle electrocatalysts with X-ray scattering techniques**
R. Pittkowski[1]; K. Jensen[1]; M. Arenz[2]; [1] University of Copenhagen/DK; [2] Universität Bern/CH

15:40 **Molecular Electrocatalysis for Reductive Organic Transformations**
G. Durin[1]; M. Lee[1]; A. Singh[1]; C. Kahl[1]; T. Weyhermueller[1]; N. Kaeffer[1]; W. Leitner[1]; [1] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D

16:00 **How to improve the performance of N-doped carbon for alkaline oxygen evolution by incorporation of transition metals**
S. Tigges[1]; M. Poschmann[1]; D. Ramermann[1]; U. Hagemann[2]; M. Nachev[3]; W. Hetaba-Wolf[1]; R. Schlögl[1]; S. Heumann[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] University of Duisburg-Essen, Duisburg/D; [3] University of Duisburg-Essen, Essen/D

16:20 COFFEE BREAK

16:50 **What do we actually measure? – Influence of Experimental Parameters in Electrocatalysis**
A. Mechler[1]; M. Tesch[2]; P. Narangoda[2]; S. Bhandari[1]; N. Thissen[1]; [1] RWTH Aachen/D; [2] Max Planck Institute for Chemical Energy Conversion, Mülheim a.d. Ruhr/D

17:10 **Incorporation of molecular FeN_4 centers into amorphous carbon layers in dependence of preparation methods and the effects towards HER and ORR**
N. Heppe[1]; C. Gallenkamp[1]; S. Pail[1]; N. Segura-Salas[1]; V. Potapkin[1]; A. Jafari[2]; O. Leupold[2]; I. Sergueev[2]; V. Krewald[1]; U. Kramm[1]; [1] Technische Universität Darmstadt/D; [2] Deutsches Elektronen-Synchrotron, Hamburg/D

17:30 ROOM CHANGE

Friday, 17 March 2023

Room: Großer Saal

Chair: M. Beller[1]; [1]Leibniz-Institut für Katalyse (LIKAT), Rostock/D

09:00 **Alwin-Mittasch-Prize Lecture**
M. Muhler[1]; [1] Ruhr University Bochum, Bochum/D

09:45 ROOM CHANGE

Room: Großer Saal

ACADEMIC-INDUSTRIAL CATALYSIS RESEARCH

Chair: D. Wolf[1]; [1]Evonik Operations GmbH, Hanau/D

09:50 **Enhancing the Atomic Efficiency of Indium-based Catalysts for the Hydrogenation of CO_2 to Methanol**
R. Baumgarten[1]; H. Ahi[2]; E. Frei[2]; N. Bottke[2]; E. Fako[2]; S. De[2]; A. Schäfer[2]; R. Naumann d'Alnoncourt[1]; C. Boscagli[3]; F. Rosowski[2]; S. Schunk[3]; [1] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D; [2] BASF SE, Ludwigshafen/D; [3] hte GmbH, Heidelberg/D

10:10 **Methyl formate as a hydrogen energy carrier**
R. Sang[1]; Z. Wei[2]; Y. Hu[1]; E. Alberico[3]; D. Wei[1]; X. Tian[2]; P. Ryabchuk[1]; A. Spannenberg[1]; R. Razzaq[1]; R. Jackstell[1]; J. Massa[4]; P. Sponholz[4]; H. Jiao[1]; H. Junge[1]; M. Beller[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] Institute of Molecular Science, Taiyuan/CN; [3] Istituto di Chimica Biomolecolare, Sassari/I; [4] APEX Energy Teterow GmbH, Rostock-Laage/D

10:30 **Operando probing of adsorbates on a working methanol synthesis catalyst by high-pressure ammonia and methanol pulses**
P. Schwiderowski[1]; B. Mockenhaupt[2]; J. Jelic[3]; S. Stürmer[4]; F. Studt[3]; M. Behrens[5]; M. Muhler[4]; [1] Ruhr-University Bochum, Bochum/D; [2] University of Duisburg-Essen, Duisburg-Essen/D; [3] Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D; [4] Ruhr University Bochum/D; [5] Christian-Albrecht University of Kiel/D

10:50 COFFEE BREAK

Friday, 17 March 2023

Room: Seminarraum 1+2

REACTION ENGINEERING

Chair: N. Schödel[1]; [1]Linde GmbH, Linde Engineering, Pullach/D

09:50 **Development of an artificial neural network to reproduce a microkinetic model for the methanol synthesis**
B. Lacerda de Oliveira Campos[1]; E. Ferreira da Costa Junior[2]; K. Herrera Delgado[1]; A. Oliveira Souza da Costa[2]; S. Pitter[1]; J. Sauer[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Universidade Federal de Minas Gerais (UFMG), Belo Horizonte (MG)/BR

10:10 **Investigation of Heat and Mass Transport Phenomena during the CO_2 Methanation Reaction in Single Pellet String Reactors**
T. Gros[1]; C. Bauer[1]; H. Bui[1]; T. Kratky[1]; O. Hinrichsen[1]; [1] Technische Universität München, Garching bei München/D

10:30 **Nucleation as rate determining step in catalytic gas generation reactions from liquid phase systems**
T. Solymosi[1]; M. Geißelbrecht[1]; S. Mayer[2]; M. Auer[2]; P. Leicht[2]; M. Terlinden[2]; P. Malgaretti[1]; A. Bösmann[2]; P. Preuster[1]; J. Harting[1]; M. Thommes[2]; N. Vogel[2]; P. Wasserscheid[1]; [1] Helmholtz-Institute Erlangen-Nürnberg (HIERN), Erlangen/D; [2] Friedrich-Alexander Universität Erlangen Nürnberg (FAU), Erlangen/D

10:50 COFFEE BREAK

Friday, 17 March 2023

Room: Großer Saal

IN SITU CHARACTERISATION/NEW METHOD

Chair: M. Behrens[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D

11:20 **The dynamics of a Cu/ZnO/Al_2O_3 catalyst revealed by operando TEM**
M. Boniface[1]; E. Frei[1]; R. Schlögl[2]; T. Lunkenbein[1]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] Fritz Haber Institut der Max Planck Gesellschaft, Berlin/D

11:40 **Tracking the behavior of NiCuAl LDH-derived catalysts by in situ TEM: Ni-Cu synergy towards chemical energy conversion**
L. Duarte Correa[1]; S. Wrabetz[1]; L. He[1]; M. Stredansky[1]; G. Koch[1]; F. Girgsdies[1]; K. Skorupska[1]; T. Lunkenbein[1]; F. Rosowski[2]; P. Ingale[3]; M. Geske[3]; R. Schlögl[1]; W. Hetaba[4]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] BASF SE, Process Research and Chemical Engineering, Ludwigshafen/D; [3] BasCat - UniCat BASF JointLab, TU Berlin, Berlin/D; [4] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D

12:00 **Mechanistic insight into CO_2 activation using new operando and transient spectroscopic approaches**
C. Hess[1]; M. Ziemba[1]; J. Weyel[1]; M. Radtke[1]; L. Schumacher[1]; [1] Technische Universität Darmstadt/D

12:20 ROOM CHANGE

Room: Großer Saal

Chair: U. Kragl[1]; [1]University of Rostock, Rostock/D

12:25 **PLENARY LECTURE**
Enzyme Discovery & Engineering to Create Biocatalysts Suitable for Efficient Applications in Organic Chemistry
U. Bornscheuer[1]; [1] Universität Greifswald/D

13:10 **Closing remarks**

Friday, 17 March 2023

Room: Seminarraum 1+2

REACTION ENGINEERING

Chair: N. Schödel[1]; [1] Linde GmbH, Linde Engineering, Pullach/D

11:20 **Liquid Phase Epoxidation of Propylene to Propylene Oxide with Hydrogen Peroxide on Titanium Silicalite-1: Spatially Resolved Measurements and Numerical Simulations**
A. Aquino[1]; R. Horn[1]; O. Korup[1]; [1] Hamburg University of Technology, Hamburg/D

11:40 **A Milling Ball as Catalyst – The novel Concept of Direct Mechanocatalysis**
L. Borchardt[1]; [1] Ruhr-Universität Bochum, Bochum/D

12:00 **Investigating dynamic changes in VPO catalyst activity through liquid dosing on the nanoliter scale**
S. Anderson[1]; M. Kutscherauer[1]; S. Boecklein[2]; G. Mestl[2]; G. Wehinger[1]; T. Turek[1]; [1] Clausthal University of Technology, Clausthal-Zellerfeld/D; [2] Clariant AG, Heufeld/D

12:20 ROOM CHANGE

ACADEMIC-INDUSTRIAL CATALYSIS RESEARCH

A 01.01 **Ammonia reforming – A perspective on the identification of promising catalyst materials for application**
S. Ristig[1]; O. Gómez-Cápiro[1]; M. van den Höövel[1]; J. Folke[1]; R. Schlögl[2]; S. Heumann[1]; H. Ruland[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Fritz Haber Institute of the Max Planck Society, Berlin/D

A 01.02 **Green methanol from renewable feeds – Towards scalable catalyst synthesis and improved stability**
L. Warmuth[1]; D. Guse[2]; M. Kind[2]; D. Schild[1]; G. Rodrigues Niquini[1]; M. Herfet[1]; M. Steurer[1]; A. Zimina[1]; J. Grunwaldt[2]; T. Zevaco[1]; S. Pitter[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 01.03 **Direct / One-step Dimethyl Ether Synthesis – The thermodynamical approach in theory and in the experiment**
F. Hilfinger[1]; S. Gatti[2]; I. Krossing[1]; [1] University of Freiburg, Freiburg/D; [2] Paul Scherrer Institut, Villigen PSI/CH

A 01.04 **Active Species and Fundamentals of their Creation in Co-containing Catalysts for Efficient Propane Dehydrogenation to Propylene**
Q. Zhang[1]; Y. Li[1]; E. Kondrotenko[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D

A 01.05 **Highly selective oxidative coupling of methane over Mn-Na_2WO_4/SiO_2 at low temperatures**
L. Xu[1]; A. Zanina[1]; K. Wu[1]; G. Jiang[2]; E. Kondratenko[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] China University of Petroleum (Beijing), Beijing/CN

A 01.06 **Promising Gd2O3-based catalysts for low-temperature oxidative coupling of methane using N2O as an oxidant**
K. Wu[1]; A. Zanina[2]; V. Kondratenko[2]; G. Jiang[3]; E. Kondratenko[2]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [3] China University of Petroleum (Bei Jing), Bei Jing/CN

A 01.07 **Phosphorus-modification of Pt-catalysts boosts the catalytic performance in cycloalkane dehydrogenation**
A. Ellert[1]; F. Herold[2]; A. Hutzler[3]; T. Janssens[4]; P. Vennestrøm[4]; P. Wasserscheid[1]; P. Schühle[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [2] Norwegian University of Science and Technology (NTNU), Trondheim/N; [3] Helmholtz-Institute Erlangen-Nürnberg (HIERN), Erlangen/D; [4] Umicore Denmark Aps, Hørsholm/DK

A 01.08 **Clean kinetic data in ammonia synthesis**
O. Gómez-Cápiro[1]; J. Folke[1]; R. Eckert[2]; C. Pizzolitto[3]; K. Dembele[4]; F. Girgsdies[4]; T. Lunkenbein[4]; S. Reitmeier[4]; A. Reitzmann[2]; P. Biasi[3]; R. Schlögl[4]; H. Ruland[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Clariant Produkte (Deutschland) GmbH, Bruckmühl/D; [3] Casale SA, Lugano/CH; [4] Fritz Haber Institute of the Max Planck Society, Berlin/D

A 01.09 **Fast-Track Your Catalyst Research: Rapid, Accurate Structural Characterization of Catalysts and Catalyst Supports**
C. Fettkenhauer[1]; K. Cychosz Struckhoff[2]; [1] Anton Paar Germany GmbH, Ostfildern/D; [2] Anton Paar QuantaTec, Boynton Beach/USA

A 01.10 **Investigation of various methods of transferring a sample from the reactor to characterisation setups**
E. Hetaba-Wolf[1]; J. Schittkowski[1]; D. Ramermann[1]; J. Folke[1]; W. Hetaba[1]; R. Schlögl[1]; H. Ruland[1]; [1] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D

A 01.11 **A setup network for methanol synthesis under industrially relevant conditions on the lab scale**
C. Göbel[1]; C. Pollok[1]; J. Salazar Gomez[1]; R. Schlögl[2]; H. Ruland[1]; [1] Max Planck Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D; [2] Fritz Haber Institut der Max Planck Gesellschaft, Berlin/D

A 01.12 **Using honeycomb monoliths as catalyst support for a scalable ammonia synthesis**
S. Hoffgaard[1]; A. Rösel[1]; U. Kragl[1]; [1] Universität Rostock, Rostock/D

A 01.13 **Transition Metal Sulfides as Deoxygenation Catalysts**
S. Suh[1]; [1] Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT, Oberhausen/D

A 01.14 **How solid state NMR can unravel the role of acid site strength in supported Ni catalysts**
M. Schröder[1]; T. Vuong[1]; J. Rabeah[1]; J. Knossalla[2]; R. Franke[2]; B. Corzilius[3]; A. Brückner[1]; [1] Leibniz Institute for Catalysis e.V., Rostock/D; [2] Evonik Operations GmbH, Marl/D; [3] University of Rostock, Rostock/D

A 01.15 **High pressure and long-term operando studies for production of sustainable fuels & chemicals: Bridging industry and synchrotron**
R. Elbuga-Ilica[1]; A. Zimina[1]; M. Serrer[2]; E. Saraçi[1]; J. Grunwaldt[2]; [1] Karlsruhe Institute of Technology (KIT) , Karlsruhe/D; [2] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 01.16 **Insights into physico-chemical properties of Pt/Rh gauze catalysts during industrial ammonia oxidation using hard X-ray microscopy**
S. Das[1]; M. Stuckelberger[2]; J. Pottbacker[3]; S. Jakobtorweihen[3]; R. Horn[3]; T. Sheppard[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [2] Deutsches Elektronen-Synchrotron, Hamburg/D; [3] Hamburg University of Technology, Hamburg/D

A 01.17 **Hydroformylation catalyzed by unmodified cobalt carbonyl under mild conditions**
B. Zhang[1]; C. Kubis[1]; R. Franke[2]; [1] Leibniz-Institut für Katalyse e. V., Rostock/D; [2] Evonik Operations GmbH / Ruhr-Universität Bochum, Marl/D

A 01.18 **A highly activating electron-rich phosphasilinane ligand for the Pd-catalyzed formation of C-X bonds.**
S. Kräh[1]; O. Trapp[1]; [1] Ludwig-Maximilians-University, Munich/D

A 01.19 **Upgrading of Fischer-Tropsch Naphtha**
C. Zschiesche[1]; A. Irslinger[2]; A. Siemens[3]; H. Krämer[3]; P. Pfeifer[2]; S. Kureti[1]; [1] TU Bergakademie Freiberg, Freiberg/D; [2] INERATEC GmbH, Karlsruhe/D; [3] AUDI AG, Ingolstadt/D

A 01.20 **Quantum chemical study of selective oxidation of propane to propene on M1 of MoVTeNbO catalyst**
K. Sen[1]; [1] BASF SE, Ludwigshafen am Rhein, Germany, Mannheim/D

A 01.21 **Iron Oxides in Catalysis - The ‚LANXESS Catalysis Network‘**
M. Gürsoy[1]; U. Hermanns[1]; T. Kaese[2]; S. Rengshausen[2]; K. Chlopek[1]; E. Held[3]; S. Nottelmann[3]; P. Knüpfer[3]; S. Kureti[3]; [1] LANXESS Deutschland GmbH, Krefeld-Uerdingen/D; [2] LANXESS Deutschland GmbH, Leverkusen/D; [3] TU Bergakademie Freiberg, Freiberg/D

A 01.22 **Probing Pore Accessibility of Coked Technical Catalysts by Hard X-ray Nanotomography**
S. Weber[1]; A. Diaz[2]; D. Karpov[2]; M. Kahnt[3]; Y. Romanenko[1]; S. Kotrel[4]; J. Grunwaldt[5]; S. Schunk[1]; T. Sheppard[5]; [1] hte GmbH, Heidelberg/D; [2] Paul Scherrer Institut, Villigen/CH; [3] Lund University, Lund/S; [4] BASF SE, Ludwigshafen am Rhein/D; [5] Karlsruhe Insitute of Technology (KIT), Karlsruhe/D

A 01.23 **Data-driven Catalyst Design: A High-throughput Workflow Applied to CO_2 to Methanol Conversion**
M. Khatamirad[1]; E. Fako[2]; C. Boscagli[3]; M. Mueller[2]; F. Ebert[1]; S. Schunk[3]; F. Rosowski[1]; S. De[2]; [1] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D; [2] BASF SE, Ludwigshafen/D; [3] hte GmbH, Heidelberg/D

A 01.24 **Kinetic Investigation of the Hydrogenation of CO to higher alcohols using Cu-promoted Co-based catalysts**
P. Diehl[1]; P. Telaar[1]; P. Schwiderowski[1]; M. Muhler[1]; [1] Ruhr-University Bochum, Bochum/D

A 01.25 **In situ and ex situ poisoning studies with sulphur-containing molecules using a $Cu/ZnO/Al_2O_3$ methanol synthesis catalyst**
P. Schwiderowski[1]; K. Nikolaidis[1]; P. Telaar[1]; P. Diehl[1]; M. Muhler[1]; [1] Ruhr-University Bochum, Bochum/D

A 01.26 **HTC Derived Metal Containing Carbon Catalysts for Ammonia Reformation**
M. Poschmann[1]; O. Gómez-Cápiro[1]; N. Jakobs[1]; M. Heise-Podleska[1]; M. van den Höövel[1]; H. Ruland[1]; S. Heumann[1]; R. Schlögl[1]; [1] Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

ACID-BASE CATALYSIS

A 02.01 **Alcohol dehydration on Lewis and Brønsted acid sites in apolar phase**
F. Zahn[1]; N. Pfriem[1]; J. Lercher[1]; [1] Technische Universität München TUM, Garching/D

A 02.02 **Synthesis of isophorone – A route to an industrially important solvent and intermediate**
T. Ruther[1]; M. Müller[2]; W. Bonrath[2]; M. Eisenacher[1]; [1] TH Köln – Campus Leverkusen, Leverkusen/D; [2] DSM Nutritional Products, Kaiseraugst/CH

A 02.03 **Acid Catalyzed Transformation of Biorenewable Lactones: Solvent Effects and Rational Design of Solvated Environment**
M. USSAMA[1]; [1] Indian Institute of Technology (IIT) Delhi, Delhi/IND

COLLABORATIVE RESEARCH IN GERMANY

A 03.01 **Template-free γ-Al_2O_3 supports enabling the next generation of Pt-SCALMS PDH catalysts**
A. Folkard[1]; H. Friedrich[1]; M. Haumann[2]; P. Wasserscheid[2]; [1] University of KwaZulu-Natal, Durban/ZA; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

A 03.02 **The Role of Co_2^+ and Co_3^+ in the Selective Catalytic 2-Propanol Oxidation over Cobalt Containing Spinel Oxides**
N. Cosanne[1]; A. Rabe[2]; M. Dreyer[2]; M. Behrens[1]; S. Najafishirtari[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D; [2] University of Duisburg-Essen, Duisburg/D

A 03.03 **The Influence of Vanadium Incorporation into Spinel Cobalt Oxides on the Selective 2-Propanol Oxidation**
H. Scheele[1]; N. Cosanne[1]; S. Najafishirtari[1]; M. Behrens[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D

A 03.04 **The Impact of Manganese Incorporation on the Activity of Cobalt Spinel Catalysts in Oxygen Evolution Reactions**
S. Arnold[1]; A. Rabe[2]; M. Behrens[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D; [2] University of Duisburg-Essen, Essen/D

A 03.05 **Electrically Conductive Filler Materials for the Coating of Metallic Bipolar Plates in PEM Fuel Cells**
J. Meyers[1]; Ö. Agbaba[1]; F. Schüth[1]; [1] Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr/D

CATALYSIS FOR POLYMER SYNTHESIS/RECYCLING

A 04.01 **Polyethylene to light hydrocarbons via hydrogenative fragmentation over zeolite-based catalysts**
L. Chen[1]; [1] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D

A 04.02 **Tandem cracking-alkylation for polyolefin conversion to fuel**
L. Wahl[1]; W. Zhang[1]; L. Hale[2]; R. Khare[1]; O. Gutiérrez[2]; J. Lercher[1]; [1] Technische Universität München TUM, Garching bei München/D; [2] Pacific Northwest National Laboratory, Richland/USA

A 04.03 **Bimetallic magnesium and zinc-N-heterocyclic carben complexes for the synthesis of cyclic and linear polyesters**
D. Wäsche[1]; S. Schulz[1]; [1] University Duisburg-Essen, Essen/D

CATALYST PREPARATION

A 05.01 **Crucial role of silica-alumina binder mixtures for hydrocarbon cracking with ZSM-5 containing catalysts**
L. Haufe[1]; V. Timoshev[1]; M. Seifert[1]; O. Busse[1]; J. Weigand[1]; [1] TU Dresden, Dresden/D

A 05.03 **Ceria supported mono- and bimetallic noble metal nanoparticles with narrow size distribution as model catalysts in emission control reactions**
C. Schmitt[1]; J. Czechowsky[2]; M. Casapu[2]; S. Behrens[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

POSTER PROGRAMME

A 05.04 **Systematic approach for the synthesis of supported Fe and Pt catalysts by strong electrostatic adsorption**
N. Pfister[1]; O. Timpe[1]; S. Jiang[1]; R. Naumann d›Alnoncourt[2]; F. Rosowski[2]; R. Schlögl[1]; A. Trunschke[1]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D

A 05.05 **Powder model catalysts based on Pt clusters, Pt and Pd nanoparticles for emission control catalysis**
N. Da Roit[1]; J. Czechowsky[2]; M. Neumaier[1]; D. Wang[1]; M. Kappes[1]; M. Casapu[2]; S. Behrens[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 05.06 **Influence of preparation parameters on spinel precursors for highly active and stable Ni-based CO_2 methanation catalysts**
D. Weber[1]; T. Franken[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

A 05.07 **Bimetallic catalysts for dehydrogenation of liquid organic hydrogen carriers (LOHCs)**
A. Göztepe[1]; A. Bösmann[1]; P. Wasserscheid[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

A 05.08 **Impinging Jet Microreactor for continuous high-throughput synthesis of Pt and Pt – Ni particles as electrocatalysts**
T. Modl[1]; N. Lynn[1]; S. Schmitz-Stowe[1]; T. Schwarz[1]; K. Stowe[1]; [1] Technische Universität Chemnitz, Chemnitz/D

A 05.09 **Insights on the rising activity and selectivity of manganese modified spinel based CO_2 methanation catalysts**
T. Franken[1]; D. Weber[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

A 05.10 **Ceria Structure-Property Relationships in Platinum-loaded Ceria Catalysts for CO Oxidation**
J. Florenski[1]; N. Schellander[1]; E. Klemm[1]; [1] University of Stuttgart, Stuttgart/D

A 05.11 **Influence of High Fluorination Content on Cu/ZnO Catalysts for Methanol Synthesis from CO_2 and H_2**
H. Schuster[1]; I. Krossing[1]; [1] Albert-Ludwigs Universität Freiburg, Freiburg/D

A 05.12 **Synthesis of Single-phase Cobalt Oxide and Mixed-metal Cobalt Oxide Nanoparticles via a Surfactant-free Approach**
C. Hsu[1]; M. Wolf[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

A 05.13 **Carbon Nitride-modified Support Materials for the Thermocatalytic Conversion of CO_2**
A. Barthelmeß[1]; M. Wolf[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

A 05.14 **Introducing Ce into Co-precipitated NiAlOx Catalysts**
H. Plendl[1]; O. Hinrichsen[1]; [1] Technische Universität München, Garching bei München/D

POSTER PROGRAMME

A 05.15 **A Novel Catalyst Preparation Method for Supported Ni Catalysts via Binder Jetting 3D Printing Using Nickel Ink**
H. Bui[1]; T. Kratky[1]; I. Lee[1]; M. Hiller[1]; S. Wedig[1]; O. Hinrichsen[1]; [1] Technische Universität München, Garching bei München/D

A 05.16 **The formation of active ammonia decomposition catalysts from perovskite precursors**
B. Alkan[1]; [1] IRIS Adlershof der Humboldt-Universität zu Berlin, Adlershof, Berlin/D

A 05.17 **Immobilization of Heteropolyacids on Carbon Supports – Design of Recyclable Solid Acidic Catalysts**
L. Hombach[1]; A. Beine[1]; A. Garzón Manjón[2]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Max Planck Institute for Iron Research, Düsseldorf/D

A 05.18 **Influence of the catalyst precursor for cobalt on activated carbon applied in ammonia decomposition**
F. Winter[1]; C. Watermann[2]; M. Muhler[3]; U. Apfel[4]; B. Zeidler-Fandrich[5]; [1] Fraunhofer-Institut UMSICHT & Ruhr University Bochum, Oberhausen/D; [2] Fraunhofer UMSICHT, Oberhausen/D; [3] Ruhr-University Bochum, Bochum/D; [4] Ruhr-University Bochum & Fraunhofer UMSICHT, Bochum/D; [5] Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT, Oberhausen/D

A 05.19 **Impact of flame spray pyrolysis parameters on the structure and activity of Cu-based CO_2-methanol catalysts**
M. Schulte[1]; V. Sender[1]; L. Baumgarten[1]; E. Saraci[1]; J. Grunwaldt[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 05.20 **Preparation of Cu/Zn Based Catalyst Precursors – How Aging can be Accelerated by Seeding**
D. Guse[1]; L. Warmuth[2]; F. Kreißig[1]; S. Pitter[2]; M. Kind[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [2] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

A 05.21 **Ammonia decomposition over transition-metal/carbon catalyst for on-site generation of hydrogen**
Z. Chen[1]; [1] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D

A 05.22 **Catalytic activation of bulk platinum by surface modification with femtosecond laser pulsles**
N. Herz[1]; T. Solymosi[1]; P. Preuster[1]; P. Wasserscheid[1]; E. Hübner[2]; F. Lederle[2]; M. Li[2]; [1] Helmholtz-Institute Erlangen-Nürnberg (HIERN), Erlangen/D; [2] Fraunhofer Heinrich-Hertz Institute, Goslar/D

A 05.23 **Preparation of Pt-based LOHC dehydrogenation catalysts via solvent deficient precipitation method**
A. de Oliveira[1]; D. Strauch[1]; A. Ellert[2]; P. Schühle[2]; M. Wolf[3]; F. Auer[1]; P. Wasserscheid[1]; [1] Forschungszentrum Jülich (FZJ) GmbH, Erlangen/D; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [3] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

A 05.24 **Copper deposition from different Salt Precursors onto TiO_2 P500 for Methylene Blue degradation.**
S. Huseyinova[1]; [1] Technische Universität Berlin BasCat UniCatBASF JointLab, Berlin/D

A 05.25 **Lanthanum-Iron/Nickel-Perovskites as Precursors for Ammonia Decomposition Catalysts**
T. Graupner[1]; S. Chen[1]; M. Behrens[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D

A 05.26 **Further development of a manufacturing process for structured ceramic catalysts**
S. Wilmes[1]; [1] Unterföhring/D

A 05.27 **Assessment of size-tunable Co-nanoparticles in a bottom-up synthesis for FTS by meta-data and reaction engineering**
J. Friedland[1]; K. Wein[1]; R. Güttel[1]; [1] Ulm University, Ulm/D

A 05.28 **Extrusion of Optimized Catalysts with Smart Extrusion Technology from ECT-KEMA – Perspectives and Potential**
T. Seidel[1]; M. Simon[1]; D. Campione[1]; F. Händle[2]; [1] ECT-Kema GmbH, Schöpstal/D; [2] frank händle transfer, Mühlacker/D

A 05.29 **Creating humidity resistance at room temperature for non-noble oxidation catalysts by coking from VOC decomposition**
N. Unglaube[1]; J. Grothe[1]; S. Kaskel[1]; [1] TU Dresden, Dresden/D

A 05.30 **High surface area nanoporous $La_1Fe_{0.9}Ru_{0.1}O_3$ perovskite-like oxide catalyst. Synthesis, characterization, and Ru-exsolution**
J. Gallego[1]; [1] Justus Liebig University Giessen, Giessen/D

A 05.31 **One-pot synthesis of oxidation catalysts for emission control via solvent deficient precipitation**
A. de Oliveira[1]; J. Czechowsky[2]; F. Maurer[2]; M. Casapu[2]; J. Grunwaldt[2]; M. Wolf[3]; [1] Forschungszentrum Jülich GmbH, IEK-11, Erlangen/D; [2] Karlsruhe Insitute of Technology (KIT), Karlsruhe/D; [3] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

A 05.32 **Commercially Available Nickel ALD Precursor for Precision Coating of Nanostructures**
N. Gupta[1]; C. N. Neumann[2]; [1] Max-Planck-Institut fur Kohlenforschung, Mülheim an der Ruhr/D; [2] Max-Planck-Institut für Kohlenforschung, Mulheim an der Ruhr/D

A 05.33 **Doping of spinel-type nanoparticles as a foundation for a deeper understanding of their catalytic behavior in OER.**
C. Placke-Yan[1]; S. Schulz[1]; [1] University Duisburg-Essen, Essen/D

A 05.34 **Development of HTC-supported Non-Noble Metals Catalysts for Ammonia Reformation**
B. Rebmann[1]; M. Bosilj[1]; R. Szolak[1]; [1] Fraunhofer ISE, Freiburg im Breisgau/D

A 05.35 **General and Controllable Synthesis Strategy of 3D Macroporous Carbon-based Materials for Efficient Oxygen Electrocatalysis**
G. Lu[1]; S. Cychy[1]; Z. Huang[1]; B. Peng[1]; M. Muhler[1]; [1] Ruhr University Bochum, Bochum/D

CONVERSION OF BIO-RESOURCES

A 06.01 **A New Strategy to Upgrade HMF to Bio-based Aromatics**
S. Zheng[1]; B. Wozniak[1]; F. Kallmeier[1]; E. Baráth[1]; S. Tin[1]; J. de Vries[1]; [1] Leibniz Institut für Katalyse e.V., Rostock, Germany, Rostock/D

A 06.02 **CO_2-neutral production of Vanillin from Lignin by homogeneous oxidative depolymerization (POMLig)**
M. Papajewski[1]; S. Wesinger[1]; J. Albert[1]; [1] University of Hamburg, Institute of Technical and Macromolecular Chemistry, Hamburg/D

A 06.03 **Ruthenium Catalysts for the Efficient Conversion of 5 HMF into DFF to Produce Phenolic Resins**
F. Heck[1]; G. Meissner[1]; H. Spod[1]; R. Suess[2]; B. Kamm[2]; [1] Heraeus Deutschland GmbH & Co. KG, Hanau/D; [2] Wood K plus Kompetenzzentrum Holz GmbH, Linz/A

A 06.04 **Combined van Krevelen and Volcano plot analysis to understand hydrodeoxygenation of guaiacol on metal/silica catalysts**
N. Kretzschmar[1]; M. Seifert[1]; O. Busse[1]; J. Weigand[1]; [1] Technische Universität Dresden, Dresden/D

A 06.05 **Flow-through reductive catalytic fractionation of beech wood sawdust**
M. Al-Naji[1]; F. Brandi[2]; B. Pandalone[3]; [1] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D; [2] Max Planck Institute of Colloids and Interfaces, Potsdam/D; [3] Max Planck Institute of Colloids and interfaces, Potsdam/D

A 06.06 **Investigating the most effective MoOx species for deoxydehydration**
J. Sebastian[1]; C. Mebrahtu[1]; R. Palkovits[1]; [1] RWTH Aachen University, Institut für Technische und Makromolekulare Chemie (ITMC), Aachen/D

A 06.07 **Intensified production of 5-hydroxymethylfurfural and furfural from biomass in innovative multiphase systems**
N. Thanheuser[1]; J. Esteban[2]; A. Vorholt[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] The University of Manchester/UK

A 06.08 **Conversion of levulinic acid and its derivatives via reductive pathways in batch reactors**
E. de Josselin de Jong[1]; E. Ras[1]; M. Mourad[1]; [1] Avantium, Amsterdam/NL

A 06.09 **Catalytic Synthesis of Acetoin, a Key Step in Catalytic Upgrading of Bio-ethanol**
M. Belleflamme[1]; A. Vorholt[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

A 06.10 **New bifunctional monomers from methyl vinyl glycolate**
A. Dell´Acqua[1]; S. Tin[1]; C. Schünemann[1]; E. Barath[1]; J. de Vries[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D

A 06.11 **Oxidation of isosorbide and isomannide over AA-TEMPO catalysts immobilised on different SiO_2 supports**
K. Städtke[1]; M. Theisinger[1]; U. Sultan[1]; T. Farmer[2]; A. Inayat[1]; [1] Friedrich-Alexander Universität Erlangen Nürnberg (FAU), Erlangen/D; [2] Green Chemistry Center of Excellence (GCCE), University of York, York/UK

A 06.12 **On the Mechanism of Catalytic Decarboxylation of Carboxylic Acids on Carbon-Supported Palladium Hydride**
F. Deng[1]; E. Ember[1]; Y. Liu[1]; A. Jentys[1]; J. Lercher[1]; [1] Technische Universität München, Garching bei München/D

A 06.13 **Nb_2O_5 promotion effect on activated carbon catalyst for pyrolysis oil hydrodeoxygenation**
M. Campos Fraga[1]; J. Ding[1]; C. Carriel Schmitt[1]; K. Raffelt[1]; N. Dahmen[1]; [1] Karlsruhe Insitute of Technology (KIT), Karlsruhe/D

A 06.14 **Investigating the Hydrodeoxygenation of Dimer Model Compounds for Upgrading Bio-Oil: A Combined Experimental and DFT Study**
Y. WEN[1]; D. Sharapa[1]; K. Raffelt[1]; F. Studt[1]; N. Dahmen[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

DIGITALIZATION OF CATALYSIS-RELATED SCIENCES

A 07.01 **Standardized data post-processing made simple**
P. Kraus[1]; A. Senocrate[2]; F. Bernasconi[2]; N. Vetsch[2]; U. Sauter[2]; C. Battaglia[2]; [1] Technische Universität Berlin, Berlin/D; [2] Empa, Dübendorf/CH

A 07.02 **Piloting Data Science Tools within a Local Data Infrastructure for Heterogeneous Catalysis - NFDI4Cat**
M. Khatamirad[1]; M. Geske[1]; B. Wentzel[2]; Y. Zhang[2]; S. Schimmler[2]; F. Rosowski[3]; [1] BasCat - UniCat BASF Joint Lab, Technische Universität Berlin, Berlin/D; [2] Fraunhofer FOKUS, Berlin/D; [3] BASF SE, Catalysis Research, Ludwigshafen/D

A 07.04 **Towards research data management with an electronic lab notebook in catalysis**
K. Kornetzky[1]; M. Schulte[1]; F. Maurer[1]; N. Jung[1]; R. Chacko[1]; O. Deutschmann[1]; J. Grunwaldt[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 07.05 **Automating the Optimization of Catalytic Reaction Mechanism Parameters using Basin-Hopping**
R. Chacko[1]; K. Keller[1]; S. Tischer[1]; A. Shirsath[1]; P. Lott[1]; O. Deutschmann[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

A 07.06 **Interdisciplinary Research Data Management for Catalysis**
R. Chacko[1]; J. Riedel[1]; H. Gossler[2]; E. Daymo[3]; O. Deutschmann[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [2] omegadot software & consulting GmbH, Limburgerhof/D; [3] Tonkomo LLC, Gilbert, Arizona/USA

A 07.07 **Development of the Architecture for Research Data Infrastructure in Catalysis-Related Sciences**
T. Petrenko[1]; P. Rodrigues[1]; V. Kushnarenko[1]; B. Wentzel[2]; Y. Dikova[1]; N. Huskova[1]; Y. Zhang[2]; M. Talab[1]; S. Schimmler[2]; T. Bönisch[1]; [1] Stuttgart University, Stuttgart/D; [2] Fraunhofer Institute for Open Communication Systems, FOKUS, Berlin/D

A 07.08 **Voc4Cat: A continuous integration processing pipeline for the development and maintenance of catalysis-related vocabularies**
N. Moustakas[1]; J. Strunk[1]; D. Linke[1]; [1] Leibniz-Institut für Katalyse (LIKAT), Rostock/D

A 07.09 **Practical Aspects of the NFDI4Cat Ontology and Metadata Design**
T. Petrenko[1]; N. Huskova[1]; [1] Stuttgart University, Stuttgart/D

A 07.10 **Prediction of catalyst performance: A case study for the privileged "triphos" ligand and its application in the ruthenium-based CO_2 hydrogenation**
O. Osterthun[1]; J. Henkel[1]; P. Resch[1]; J. Klankermayer[1]; [1] RWTH Aachen University, Aachen/D

ELECTROCATALYSIS

A 08.01 **Sustainable Synthesis of Acrylonitrile by Electrolysis**
J. Kümper[1]; J. Meyers[1]; N. Kurig[1]; R. Sebers[1]; R. Palkovits[1]; [1] RWTH Aachen University, Aachen/D

A 08.02 **TEMPO-Modified Polymethacrylates as Mediators in Electrosynthesis - Influence of the Molecular Weight on Redox Properties and Electrocatalytic Activity**
A. Prudlik[1]; N. Mohebbati[1]; R. Francke[1]; [1] Leibniz-Institut für Katalyse e.V., Rostock/D

A 08.03 **Elucidating the influence of intercalated anions in NiFe LDH on the oxygen evolution reaction through a mechanistic study**
M. Berger[1]; I. Popa[1]; L. Negahdar[2]; R. Palkovits[1]; [1] RWTH Aachen University Institut für Technische und Makromolekulare Chemie (ITMC), Aachen/D; [2] University College Dublin, Dublin/IRL

A 08.04 **Manipulating FeNC catalysts with metal nanoparticles: Effect on the activity and stability for CO_2RR.**
N. Segura Salas[1]; N. Heppe[1]; U. Kramm[1]; [1] Technische Universität Darmstadt, Darmstadt/D

A 08.05 **From production directly into application: time- and resource-efficient electrocatalytic hydrogenation of alkynols by silver- and copper-plated electrodes**
J. Wolf[1]; K. Pellumbi[1]; T. Kull[2]; D. Siegmund[1]; U. Apfel[2]; [1] Fraunhofer UMSICHT, Oberhausen/D; [2] Ruhr University Bochum, Bochum/D

A 08.06 **Building a lab-scale alkaline water electrolyzer to achieve application-relevant testing conditions**
M. Müller[1]; S. Tigges[1]; T. Stamm[1]; H. Ruland[1]; K. Tschulik[2]; S. Heumann[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Ruhr-University Bochum, Bochum/D

A 08.07 **Scalable Electrochemical Semi-hydrogenation of Alkynoles by Base Metal Sulfide Catalysts**
K. Pellumbi[1]; L. Wickert[1]; J. Kleinhaus[2]; J. Wolf[1]; K. junge Puring[1]; D. Siegmund[1]; U. Apfel[1]; [1] Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT, Oberhausen/D; [2] Ruhr University Bochum, Bochum/D

A 08.08 **Cu-BX (X: N, CN, P) Composites for the CO_2 Electroreduction: Materials vs. Gas Diffusion Electrode Characteristics**
K. Pellumbi[1]; M. Smialkowski[2]; K. junge Puring[3]; D. Siegmund[1]; U. Apfel[4]; [1] Ruhr-University Bochum & Fraunhofer UMSICHT, Oberhausen/D; [2] Ruhr-University Bochum, Bochum/D; [3] Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT, Oberhausen/D; [4] Ruhr-University Bochum & Fraunhofer UMSICHT, Bochum/D

A 08.09 **Hydrogen evolution on iron porphyrins – Insights on the reaction mechanism from operando nuclear resonance spectroscopy**
N. Heppe[1]; C. Gallenkamp[1]; S. Paul[1]; N. Segura-Salas[1]; V. Potapkin[1]; A. Jafari[2]; O. Leupold[2]; I. Sergueev[2]; V. Krewald[1]; U. Kramm[1]; [1] Technische Universität Darmstadt, Darmstadt/D; [2] Deutsches Elektronen-Synchrotron, Hamburg/D

A 08.10 **Selective Electrooxidation of Anhydrous Methanol to Formaldehyde**
F. Schwarz[1]; A. Mechler[1]; [1] RWTH Aachen University, Aachen/D

A 08.11 **Oxidative behaviour of Mo_2TMB_2 (TM: Fe, Co, Ni) under oxygen evolution reaction (OER) conditions**
F. Aras[1]; U. Burkhardt[1]; M. Schmidt[1]; G. Auffermann[1]; I. Antonyshyn[1]; Y. Grin[1]; [1] Max Planck Institut für Chemische Physik fester Stoffe, Dresden/D

A 08.12 **Nb-Ni Binary Compounds in Oxygen Evolution Reaction**
B. Mete[1]; S. Altendorf[1]; U. Burkhardt[1]; I. Antonyshyn[2]; Y. Grin[1]; [1] Max Planck Institut für Chemische Physik fester Stoffe, Dresden/D; [2] Max Planck Institute Chemical Physics of Solids/Dresden, Fritz-Haber-Institut der Max-Planck-Gesellschaft/Berlin , Dresden/D

A 08.13 **Operando 57Fe Mössbauer Spectroscopy of Fe-N-C Catalysts during Oxygen Reduction Reaction**
L. Ni[1]; [1] TU Darmstadt, Darmstadt/D

A 08.14 **Electrodeposition of non-precious metal catalysts for the anion exchange membrane water electrolysis**
J. Hildebrand[1]; M. Manolova[1]; S. Sörgel[1]; H. Kaßner[1]; [1] fem | Forschungsinstitut Edelmetalle + Metallchemie, Schwäbisch Gmünd/D

A 08.15 **Why is it possible to electrooxidize 5-hydroxymethylfurfural to furandicarboxylic acid in spite of HMF instability under alkaline conditions?**
M. Krebs[1]; A. Bodach[1]; C. Wang[2]; F. Schüth[1]; [1] Max-Planck-Institut für Kohlenforschung, Mülheim/D; [2] Beijing University of Technology, Beijing/CN

EMISSION REDUCTION

A 09.01 **Structural and acidic promotion of Pt/ZrO_2 catalysts by MoO_x for the low-temperature NO_x reduction with H_2**
D. Schröder[1]; S. Kureti[1]; [1] TU Bergakademie Freiberg, Freiberg/D

A 09.02 **CH_4 oxidation on Fe based catalysts**
K. Weidauer[1]; S. Kureti[1]; [1] TU Bergakademie Freiberg, Freiberg/D

A 09.03 **Visualising sulphur poisoning in structured catalysts with X-ray nanotomography**
S. Sharma[1]; T. Delrieux[1]; D. Karpov[2]; J. Grunwaldt[1]; T. Sheppard[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [2] European Synchrotron Radiation Facility, Grenoble/F

A 09.04 **The CO_2 Challenge in Industrial Selective Oxidation Processes**
K. Amakawa[1]; [1] BASF SE, Ludwigshafen am Rhein/D

A 09.05 **Understanding the impact of the preparation method on the performance of Pt-Pd/γ-Al_2O_3 catalysts for emission control**
J. Czechowsky[1]; P. Dolcet[1]; C. Maliakkal[2]; S. Gross[3]; S. Behrens[2]; C. Kübel[2]; J. Grunwaldt[1]; M. Casapu[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [2] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [3] Università degli Studi di Padova/I

A 09.06 **Effect of CO and H_2O on the storage-release cycle of NO in Pd/CHA passive NO_x adsorbers**
M. Kaushik[1]; T. S. Khan[2]; M. A. Haider[1]; D. Bhatia[1]; [1] Indian Institute of Technology, Delhi/IND; [2] CSIR-Indian Institute of Petroleum, Dehradun/IND

HYDROGEN GENERATION/SYNTHESIS GAS

A 10.01 **Influence of Structure and Modification of Core and Shell Size of ZrO_2-TiO_2 Composites on the Photocatalytic Activity in Hydrogen Evolution from Aqueous Media**
R. Kurniawan[1]; M. Goepel[1]; R. Gläser[1]; [1] Universität Leipzig, Leipzig/D

A 10.02 **Development of structured Fe-based catalysts for Fischer-Tropsch synthesis of higher alcohols under industrially relevant conditions**
M. Medicus[1]; J. Mettke[1]; J. Abel[1]; E. Reichelt[1]; M. Jahn[1]; [1] Fraunhofer IKTS, Dresden/D

A 10.03 **Investigation of the deactivation mechanism of iron-based catalysts for use in low-temperature Fischer-Tropsch-Synthesis**
S. Bredow[1]; E. Reichelt[1]; M. Jahn[1]; [1] Fraunhofer IKTS, Dresden/D

A 10.04 **Steady-State and Transient Kinetic Investigations of Ammonia Decomposition over Fe-, Ni- and Ru-based Catalysts**
M. Purcel[1]; A. Müller[2]; M. Muhler[1]; [1] Ruhr Universität Bochum / Max Planck Institut für chemische Energiekonversion, Bochum/D; [2] Ruhr Universität Bochum, Bochum/D

A 10.05 **Alcohol-Assisted Hydrogenation of Carbon Monoxide to Methanol Using Molecular Manganese Catalysts**
S. Stahl[1]; A. Kaithal[1]; A. Vorholt[1]; C. Werlé[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

A 10.06 **Ammonia Decomposition using Supported Catalytically Active Liquid Metal Solutions (SCALMS)**
P. Rothgängel[1]; N. Taccardi[2]; A. Søgaard[2]; S. Khan Antara[2]; A. Folkard[3]; M. Haumann[2]; P. Wasserscheid[1]; [1] Forschungszentrum Jülich (FZJ) GmbH, Erlangen/D; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [3] University of KwaZulu-Natal, Durban/ZA

A 10.07 **Synthesis, characterization and catalytic properties of $ZnFe_{2-x}Rh_xO_4$-derived catalysts in the hydroformylation of 1-hexene**
D. Delgado[1]; G. Koch[1]; S. Jiang[1]; J. Kröhnert[1]; X. Tran[1]; T. Lunkenbein[1]; C. Galdeano Ruano[2]; J. Gaona-Miguélez[2]; P. Oña-Burgos[2]; A. Trunschke[1]; [1] Fritz Haber Institut der Max Planck Gesellschaft, Berlin/D; [2] Instituto de Tecnología Química, UPV-CSIC, Valencia/E

A 10.08 **Optimization of the operation conditions of the "one pot" reaction of CO_2 and H_2 into lower olefins**
D. Laudenschleger[1]; C. Marshall[2]; A. Trunschke[2]; H. Ruland[1]; [1] Max-Planck-Institute für chemische Energiekonversion, Mülheim an der Ruhr/D; [2] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D

A 10.09 **CO_2 methanation on Pd-modified Fe_2O_3 catalysts**
A. Groß[1]; S. Kureti[1]; [1] TU Bergakademie Freiberg, Freiberg/D

A 10.10 **Standardization of Reaction Conditions for the Aqueous Phase Methanol Reformation**
H. Kempf[1]; H. Junge[1]; M. Beller[1]; [1] Leibniz-Institut für Katalyse e.V., Rostock/D

A 10.11 **Formic acid dehydrogenation catalyzed by Molybdenum-Sulfur Clusters**
C. Stein[1]; M. Gutiérrez Blanco[2]; E. Guillamón[2]; I. Sorribes[2]; H. Junge[1]; R. Llusar[2]; M. Beller[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] Universitat Jaume I, Castellón/E

A 10.12 **CO_2 valorization via the reverse Water Gas Shift reaction over iron-nickel nanoalloy-based catalysts**
S. Raseale[1]; K. de Kock[1]; M. Claeys[1]; N. Fischer[1]; [1] University of Cape Town, Rondebosch, Cape Town/ZA

A 10.13 **Polyoxometalate boosting the light-harvesting ability of graphitic carbon nitride for photocatalytic water splitting: in the energy crisis context**
S. Djoko Tameu[1]; [1] Technische Universität Berlin BasCat UniCatBASF JointLab, Berlin/D

IN SITU CHARACTERISATION/NEW METHOD

B 11.01 **Effects of Hydrothermal Ageing on the Dynamic Nature of Active Sites in Cu-exchanged Small Pore Zeolites**
R. Khare[1]; M. Wenig[1]; A. Jentys[1]; J. Lercher[1]; [1] TU München, Garching/D

B 11.02 **Wilkinson-type catalysts in ionic liquids for hydrogenation of small alkenes: understanding and improving catalyst stability**
S. Simon[1]; E. Kratzer[2]; S. Maisel[1]; D. Blaumeiser[1]; S. Khan Antara[1]; L. Ewald[1]; D. Dotzel[2]; M. Haumann[1]; A. Görling[1]; W. Korth[2]; A. Jess[2]; T. Retzer[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [2] University of Bayreuth, Bayreuth/D

B 11.03 **Supraparticles for naked-eye H_2 indication and monitoring: improving performance by variation of the catalyst nanoparticles**
K. Zhang[1]; S. Schötz[1]; J. Reichstein[1]; P. Groppe[1]; N. Stockinger[1]; S. Wintzheimer[1]; K. Mandel[1]; J. Libuda[1]; T. Retzer[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

B 11.04 **Unraveling active species on gold- and copper-ceria catalysts using IR-modulation excitation spectroscopy**
J. Weyel[1]; M. Ziemba[1]; C. Hess[1]; [1] TU Darmstadt, Darmstadt/D

B 11.05 **Exploring Carbon Deposition on Methane Dry Reforming by Laser-Induced Breakdown Spectroscopy and Species Concentration Profiles**
D. Espinoza[1]; H. Appala[1]; O. Korup[2]; R. Horn[2]; [1] Technische Universität Hamburg, Hamburg/D; [2] Technische Universität Hamburg/Reacnostics GmbH, Hamburg/D

B 11.06 **Operando DRIFTS Studies on Promoted Fe/$YZrO_x$ Catalysts for CO_2 Fischer-Tropsch Synthesis**
E. Fedorova[1]; J. Weiß[1]; L. Kraußer[1]; C. Kubis[1]; E. Kondratenko[1]; A. Brückner[1]; [1] Leibniz Institut für Katalyse e.V., Rostock/D

B 11.08 **Characterization of spent copper oxide and spinel catalysts used in butanal hydrogenation**
M. Hiller[1]; I. Jüngling[1]; K. Köhler[1]; [1] Technische Universität München TUM, Garching bei München/D

B 11.09 **Spatially resolved iso-potential DRIFTS measurements to explore the reaction mechanism of CO_2 methanation on Ni**
S. Sichert[1]; S. Stahl[2]; O. Korup[3]; R. Horn[3]; [1] Hamburg University of Technology, Hamburg/D; [2] Reacnostics GmbH, Hamburg/D; [3] Hamburg University of Technology / Reacnostics GmbH, Hamburg/D

B 11.10 **Isopotential Spectroscopy – A New Concept for Operando Studies of Catalysts in Catalytic Reactors**
B. Wollak[1]; K. Bharatula[1]; S. Stahl[2]; S. Sichert[1]; O. Korup[1]; R. Horn[1]; [1] Hamburg University of Technology, Hamburg/D; [2] Reacnostics GmbH, Hamburg/D

B 11.11 **XRDynamic 500 and XRK 900 Reactor Chamber: In-situ XRD studies of catalysts under reaction conditions**
B. Puhr[1]; A. Jones[1]; M. Kremer[1]; T. Müller[1]; B. Schrode[1]; P. Vir[1]; [1] Anton Paar GmbH, Graz/A

B 11.12 **Understanding of multiphase catalysts by time-resolved in situ catalyst characterization combined with temporal analysis of products for oxidative coupling of methane**
A. Zanina[1]; V. Kondratenko[1]; H. Lund[1]; E. Kondratenko[1]; [1] Leibniz-Institut für Katalyse e. V., Rostock/D

B 11.13 **In-operando XRD measurements on fixed bed catalysts**
B. Puhr[1]; M. Kremer[1]; A. Jones[1]; T. Müller[1]; B. Schrode[1]; P. Vir[1]; [1] Anton Paar GmbH, Graz/A

B 11.14 **Investigation on kinetic aspects of the Rh/BiPhePhos catalyst system for the hydroformylation of alkenes**
B. Leidecker[1]; R. Franke[2]; A. Börner[1]; C. Kubis[1]; [1] Leibniz Institut für Katalyse e.V. (LIKAT), Rostock/D; [2] Evonik Operations GmbH, Marl/D

B 11.15 **Friction Force Microscopy as a tool to investigate (electro)catalytic processes at surfaces**
M. Maksumov[1]; A. Kaus[2]; Z. Teng[3]; K. Kleiner[3]; F. Gunkel[2]; F. Hausen[1]; [1] Forschungszentrum Jülich GmbH IEK-9, Jülich/D; [2] Forschungszentrum Jülich GmbH, PGI-7, Jülich/D; [3] University of Münster, MEET, Münster/D

B 11.16 **X-ray Photoelectron Spectroscopy Studies of Pd and PdAu Thin Film Catalysts**
E. Öztuna[1]; M. Stredansky[1]; D. Cruz[1]; Z. Li[1]; M. Dimitrakopoulou[1]; C. Rohner[1]; A. Steigert[2]; M. Muske[2]; A. Hammud[1]; J. Frisch[2]; T. Kokumai[2]; S. Raoux[2]; M. Bär[2]; A. Knop-Gericke[1]; D. Amkreutz[2]; K. Skorupska[1]; R. Schlatmann[2]; B. Roldán Cuenya[1]; R. Schlögl[1]; [1] Fritz Haber Institute of the Max Planck Society, Berlin/D; [2] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/D

B 11.17 **The Sonogashira coupling on a Pd Ball – Mechanistic Insights into a Versatile Protocol**
W. Pickhardt[1]; L. Borchardt[1]; S. Grätz[1]; [1] Ruhr-University Bochum, Bochum/D

B 11.18 **Promotion of MoOxCyHz Phase Formation by Nickel in Molybdenum Catalysts**
S. Haida[1]; S. Löbner[1]; C. Kubis[1]; H. Lund[1]; A. Abdel-Mageed[1]; S. Wohlrab[1]; A. Brückner[1]; [1] Leibniz-Institute for Catalysis (LIKAT), Rostock/D

B 11.19 **Analysis of Ni@C methanation catalysts using a methodical combination of hard X-rays**
S. Strübbe[1]; N. Prinz[2]; L. Rohrbach[3]; M. Zobel[2]; W. Kleist[3]; M. Bauer[1]; [1] Paderborn University, Paderborn/D; [2] RWTH Aachen University, Aachen/D; [3] TU Kaiserslautern, Kaiserslautern/D

B 11.20 **Operando X-Ray Absorption Spectroscopic Investigations on Ni and Cu Catalysts for CO_2-Hydrogenation**
L. Baumgarten[1]; J. Grunwaldt[1]; E. Saraçi[1]; [1] Karlsruher Institut für Technologie, Karlsruhe/D

MODEL CATALYSTS/SURFACE SCIENCE

B 12.01 **Layered double hydroxide (LDH)-derived multinary magnesioferrites as alternative precursors for ammonia synthesis catalysts**
J. Folke[1]; D. Rein[2]; K. Friedel Ortega[3]; M. Behrens[3]; R. Schlögl[1]; H. Ruland[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] University Duisburg-Essen, Essen/D; [3] Christian-Albrechts-Universität zu Kiel, Kiel/D

B 12.02 **Synthesis of graphene on Rh (111) as a substrate for on-surface assembly of Pt-ligands**
M. Shaker[1]; N. Waleska[2]; S. Jaekel[2]; E. Freiberger[2]; V. Schwaab[2]; F. Hemauer[2]; R. Adhikari[2]; C. Papp[2]; H. Steinrück[2]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen /D; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

B 12.03 **Nanoparticle-derived model catalysts for fundamental catalytic studies in syngas chemistry**
B. Wang[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

B 12.04 **A molecular view on solid catalysts with ionic liquid layers (SCILLs)**
R. Eschenbacher[1]; C. Schuschke[1]; T. Xu[1]; D. Blaumeiser[1]; S. Schötz[1]; T. Retzer[1]; J. Libuda[1]; [1] FAU Erlangen-Nürnberg, Erlangen/D

B 12.05 **Reactivity and Passivation of Fe Nanoclusters on h-BN/Rh(111)**
N. Waleska-Wellnhofer[1]; F. Düll[1]; P. Bachmann[1]; F. Hemauer[1]; J. Steinhauer[1]; C. Papp[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

B 12.06 **Theoretical Investigation of PdO_x and PtO_x Single Atom Catalysts supported on Ceria (100), (110) and (111)**
S. Bernart[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

B 12.07 **Theoretical insights into activity-selectivity relations of Ru and FeRu-based multifunctional catalysts**
N. Levin[1]; A. Bordet[2]; W. Leitner[3]; [1] Max Planck Institute for Chemical Energy Conversion, Muelheim an der Ruhr/D; [2] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [3] Max Planck Institute for Chemical Energy Conversion, RWTH Aachen University, Mülheim an der Ruhr/D

B 12.08 **Anharmonic Correction to the Adsorption Free Energy by Machine Learned Force Field-based Thermodynamic Integration**
T. Huynh[1]; D. Sharapa[1]; T. Bučko[2]; F. Studt[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Comenius University in Bratislava; Slovak Academy of Sciences, Bratislava/SK

B 12.09 **Theoretical studies investigating the mechanism of methanol formation over a Cu/ZnO based catalyst**
D. Jurado A.[1]; M. Higham[2]; C. Catlow[3]; I. Krossing[4]; [1] Albert-Ludwigs-University Freiburg, Freiburg im Bresigau/D; [2] Research Complex at Harwell, Harwell Oxford/UK; [3] University College London, London/UK; [4] Albert-Ludwigs-University Freiburg, Freiburg im Breisgau/D

B 12.10 **CO_2 Hydrogenation to Methanol over ZnCu(211) vs ZnCu(100)**
J. Jelic[1]; [1] Karlsruher Institut für Technologie (KIT), Eggenstein-Leopoldshafen/D

B 12.11 **DFT investigation of the dynamics of Cu/ZnO, Cu/GaxOy, Ni/ZnO and Ni/GaxOy Catalyst under operating conditions**
C. Coppex[1]; J. Jelić[2]; F. Studt[3]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Karlsruher Institut für Technologie (KIT), Karlsruhe/D; [3] Karlsruhe Institute of Technology (KIT) / Institute for Chemical Technology and Polymer Chemistry, Karlsruhe/D

B 12.12 **Properties and surface-segregation of PdPt alloy particles as a function of support and gas phase composition**
J. Chen[1]; D. Sharapa[1]; P. Plessow[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

B 12.13 **Understanding the Metal-Support Interaction Between Cu and Reducible Metal Oxides During CO_2 Hydrogenation through the Use of Well Defined Surface Models**
M. Benz[1]; D. Estes[1]; [1] University of Stuttgart, Stuttgart/D

B 12.14 **MeOH-mediated Hydrogen Transfer Mechanism at Zeolitic Surface Lewis Acid Sites**
A. Enß[1]; P. Plessow[1]; F. Studt[1]; [1] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

B 12.15 **Analytical Model of CVD Growth of Graphene on Cu(111) Surface**
D. Sharapa[1]; F. Studt[1]; K. Fink[1]; [1] Karlsruher Institut für Technologie (KIT), Eggenstein-Leopoldshafen/D

B 12.16 **Theoretical Insight Into Water Oxidation on the (001)-WO_3 Surface in Liquid Water: A Metadynamics Study**
R. Ketkaew[1]; S. Luber[1]; [1] University of Zurich, Zurich/CH

B 12.17 **Epitaxial thin film nickel oxide catalysts doped with iron for the oxygen evolution reaction**
A. Etxebarria[1]; U. Hejral[1]; M. Lopez Luna[1]; E. M. Davis[1]; A. Herzog[1]; F. Haase[1]; A. Jamshaid[1]; D. Kordus[1]; A. Bergmann[1]; H. Kuhlenbeck[1]; B. Roldan Cuenya[1]; [1] Fritz-Haber-Institute of the Max-Planck-Society, Berlin/D

MOLECULAR CATALYSIS/BIOCATALYSIS

B 13.01 **Recycling of a Molecular Catalyst in Ethylene Carbonate by a Crystallization of the Catalyst Phase in the Multiphase Hydroformylation of 1-Octene**
J. Vossen[1]; N. Hülsken[2]; A. Vorholt[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] RWTH Aachen University, Aachen/D

B 13.02 **HPA-5 - a unique polyoxometalate for acid and redox catalysis: synthesis, characterization, and modern applications in green chemical processes**
J. Raabe[1]; M. Poller[2]; D. Voß[1]; J. Albert[1]; [1] Universität Hamburg (UHH), Hamburg/D; [2] Universität Hamburg, Institut für Technische und Makromolekulare Chemie, Hamburg/D

B 13.03 **Hydroformylation of Conjugated 1,3 Dienes: Accelerating Effect of Tertiary Amines**
K. Köhnke[1]; T. Rösler[1]; T. Faßbach[1]; M. Therhorst[2]; T. Gaide[2]; R. Björnsson[1]; W. Leitner[1]; T. Seidensticker[2]; A. Vorholt[1]; [1] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D; [2] Technische Universität Dortmund, Dortmund/D

B 13.04 **Investigating the Kinetics of the Carbon Dioxide Hydrogenation to Formic Acid using a Design of Experiment Approach**
K. Ehmann[1]; K. Dinsing[1]; C. Ribeiro Maier[1]; A. Vorholt[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

B 13.05 **How Silica-Alumina Surfaces Affect Supported Complexes**
E. Kaya[1]; M. Schnierle[1]; D. Dittmann[1]; M. Ringenberg[1]; M. Dyballa[1]; [1] Universität Stuttgart, Stuttgart/D

B 13.06 **Synthesis of Galacto-oligosaccharides with simultaneous glucose removal by coupling enzyme systems - a feasibility study**
I. Pottratz[1]; C. Hamel[2]; [1] Hochschule Anhalt, Köthen/D; [2] Otto von Guericke Universität Magdeburg, Magdeburg/D

B 13.07 **The path to one pot synthesis of complex esters with an iridium/palladium catalyst**
C. Urban[1]; K. Kretschmar[2]; R. Schomäcker[1]; T. Braun[2]; [1] TU Berlin, Berlin/D; [2] IRIS Adlershof der Humboldt-Universität zu Berlin, Berlin/D

B 13.08 **One path towards sustainable processes: A Tandem Catalytic Approach combines Transition-metal Catalysis and Biocatalysis**
K. Naße[1]; H. Bork[2]; W. Leitner[1]; H. Gröger[2]; A. Vorholt[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Bielefeld University, Bielefeld/D

B 13.09 **Precatalyst Association of Palladium Hydrides for Enyne Cycloisomerization**
E. Wimmer[1]; D. Estes[1]; [1] University of Stuttgart, Stuttgart/D

B 13.10 **Development and directed evolution of boronic acid designer enzymes**
L. Longwitz[1]; [1] Univerisity of Groningen, Groningen/NL

POROUS MATERIALS/ZEOLITES/MOFS

B 14.01 **Production of Propylene from aqueous Bioethanol using hierachical H-ZSM-5**
B. Schaal[1]; D. Kaiser[1]; M. Bertau[1]; [1] TU Bergakademie Freiberg, Freiberg/D

B 14.02 **Characterization of Hierarchically Structured Zeolite Catalysts by Gas Sorption**
E. Turrini[1]; K. Cychosz Struckhoff[2]; C. Fettkenhauer[3]; [1] Anton Paar GmbH, Graz/A; [2] Anton Paar Quantatec, Boynton Beach/USA; [3] Anton Paar Germany GmbH, Ostfildern/D

B 14.03 **Machine learning algorithms as an assistant in determination of the zeolites structure from vibrational spectra**
A. Skorynina[1]; B. Protsenko[1]; O. Usoltsev[1]; A. Bugaev[1]; S. Guda[1]; A. Soldatov[1]; [1] Southern Federal University, Rostov-on-Don/RUS

B 14.04 **Application of Amine-functionalized Polymers in Sustainable Catalysis**
K. Birkelbach[1]; A. Vorholt[2]; T. Rösler[2]; R. Palkovits[1]; [1] RWTH Aachen University, Aachen/D; [2] Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

B 14.05 **The role of decarboxylation reactions during the MTO initiation process – a theoretical investigation**
P. Huber[1]; P. Plessow[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

B 14.06 **Theoretical investigation of the catalysis of n-butane isomerization in CHA and AFI zeolites**
L. Spiske[1]; P. Plessow[1]; K. Kazmierczak[2]; B. Vandegehuchte[2]; F. Studt[1]; [1] Karlsruher Institut für Technologie (KIT), Eggenstein-Leopoldshafen/D; [2] TotalEnergies OneTech Belgium, Seneffe/B

PHOTOCHEMISTRY

B 15.01 **Photocatalytic nitrate reduction under sunlight over TiO_2 layers on glass rings generated by dip-coating**
L. Becker[1]; M. Guci[1]; M. Schwidder[1]; [1] Otto von Guericke Universität Magdeburg/D

B 15.02 **Photocatalytic formaldehyde synthesis from methanol under continuous operation in a laboratory scale plant**
F. Stubenrauch[1]; M. Schörner[1]; A. Bösmann[2]; P. Wasserscheid[1]; [1] Forschungszentrum Jülich GmbH, Erlangen/D; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

B 15.03 **Photocatalytic Conversion of CO_2 using Water and CH_4 in the Presence of Nobel Metal-modified Photocatalysts**
M. Tasbihi[1]; [1] Technische Universität Berlin, Berlin/D

B 15.04 **Trisodium citrate-mediated and stirring-assisted structural evolution of $ZnIn_2S_4$ nanosheets with enhanced photocatalytic hydrogen performance**
S. Ding[1]; [1] Leibniz Institut für Katalyse e.V., Rostock, Germany, Rostock/D

B 15.05 **Photocatalytic Degradation of Diclofenac by oD/2D Nitrogen-doped Carbon Quantum Dot-graphitic Carbon Nitride (CNQD)**
H. Awang[1]; [1] Leibniz-Institut für Katalyse e.V., Rostock/D

B 15.06 **CatMemReac – CO_2-reduction in the oxidation of micropollutants – energy-intensive vs. novel solar-based processes**
B. Wriedt[1]; C. Chaumette[1]; S. Langkau[2]; J. Thomann[2]; F. Tettenborn[2]; V. Blass[3]; H. Mamane[3]; [1] Fraunhofer IGB, Stuttgart/D; [2] Fraunhofer ISI, Karlsruhe/D; [3] Tel Aviv University, Tel Aviv/IL

B 15.07 **Limitations of the Tauc Method in Determining the Optical Bandgap in Metal Oxide Catalysts**
J. Klein[1]; L. Kampermann[1]; B. Mockenhaupt[2]; M. Behrens[3]; A. Ludwig[4]; J. Strunk[5]; G. Bacher[1]; [1] University of Duisburg-Essen, Duisburg/D; [2] Delft University of Technology, Delft/NL; [3] Christian-Albrechts-Universität zu Kiel, Kiel/D; [4] Ruhr-University Bochum, Bochum/D; [5] Leibniz Institute for Catalysis (LIKAT), Rostock /D

REACTION ENGINEERING

B 16.01 **Dry Reforming of Methane on bimetallic Ni-Co catalysts produced via spray-drying**
G. Küchen[1]; V. Olszok[1]; B. Kreitz[2]; T. Turek[1]; A. Weber[1]; G. Wehinger[1]; [1] Clausthal University of Technology, Clausthal-Zellerfeld/D; [2] Brown University, Providence/USA

B 16.02 **Ethylene hydrogenation using thin films of ionic liquid – controlling the location of catalysis**
S. Khan Antara[1]; S. Schötz[1]; T. Retzer[1]; J. Libuda[1]; M. Haumann[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen/D

B 16.03 **Reactivation strategies of nucleation-inhibited catalyst beds for continuously operated gas-release reactions**
F. Uhrig[1]; T. Solymosi[1]; P. Preuster[1]; A. Bösmann[2]; P. Wasserscheid[1]; [1] Forschungszentrum Jülich GmbH, Erlangen/D; [2] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D

B 16.04 **Hydroformylation – The crucial initial step in the Hydroaminomethylation**
S. Kirschtowski[1]; W. Kortuz[2]; P. Kumar[1]; C. Hamel[1]; [1] Otto von Guericke University, Magdeburg/D; [2] Max Planck Institute für Dynamic of Complex Technical Systems, Magdeburg/D

B 16.05 **CFD Modeling of Impinging Jet Microreactor Parameters for Continuous High-Throughput Synthesis of Nanoparticles**
N. Lynn[1]; T. Modl[1]; S. Schmitz-Stöwe[1]; T. Schwarz[1]; K. Stöwe[1]; [1] Technische Universität Chemnitz, Chemnitz/D

B 16.06 **Influence of active particle size and support acidity of bi-functional catalysts on the product distribution of Fischer-Tropsch synthesis**
K. Wein[1]; G. Baade[1]; R. Güttel[1]; [1] University of Ulm, Ulm/D

B 16.07 **Tandem Catalysis in the Synthesis Route of Dimethyl carbonate from CO_2 via Methanol**
P. Isbrücker[1]; [1] Technische Universität Berlin, Berlin/D

B 16.08 **Approaching the Dehydrogenation-Hydroformylation of Propane to Butyraldehyde by Heterogeneous Tandem Catalysis**
M. Rudolph[1]; T. Obermeier[1]; E. Wessel[1]; M. Görgens[1]; R. Schomäcker[1]; [1] Technische Universität Berlin, Berlin/D

B 16.09 **Continuous gas-phase hydroformylation of but-1-ene using supported liquid phase catalyst in a membrane reactor - a case of process intensification and simulation**
A. Al-Shaibani[1]; M. Schörner[1]; T. Brinkmann[2]; F. Weigelt[2]; L. Arsenjuk[3]; C. Nentwich[3]; I. Panjikkaran[3]; R. Franke[4]; M. Haumann[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [2] Helmholtz-Zentrum Hereon GmbH, Geesthacht/D; [3] Evonik Operations GmbH, Marl/D; [4] Evonik Operations GmbH / Ruhr-Universität Bochum, Marl / Bochum/D

B 16.10 **Suzuki Coupling on a Pd Surface - Mechanistic Elucidation of a Versatile Protocol**
M. Wohlgemuth[1]; L. Borchardt[1]; W. Pickhardt[1]; [1] Ruhr-University Bochum, Bochum/D

B 16.11 **Tailored Mass Spectrometry Solutions for Gas Analysis in Catalytic Setups**
S. Neumann[1]; N. Boldt[1]; [1] InProcess Instruments GmbH, Bremen/D

B 16.12 **Spatially-resolved gas-phase measurements on Fischer-Tropsch synthesis in a fixed-bed profile reactor**
J. Mettke[1]; F. Wolke[1]; S. Hilbig[1]; E. Reichelt[1]; M. Jahn[1]; [1] Fraunhofer IKTS, Dresden/D

SELECTIVE HYDROGENATION/DEHYDROGENATION

B 17.01 **Novel iron-based catalysts for the partial hydrogenation of unsaturated aldehydes – The replacement for precious metals**
T. Bouveyron[1]; Y. Hayase[2]; T. Miyake[2]; M. Eisenacher[1]; [1] TH Köln - Cologne University of Applied Sciences, Leverkusen/D; [2] Kansai University, Suita/J

B 17.02 **Ruthenium Nanoparticles Immobilized on a CO_2 Responsive Support as Adaptive Catalysts for the Selective Hydrogenation of Bicyclic Heteroaromatic Compounds**
Y. Zhang[1]; S. Sayed[2]; L. Kang[1]; A. Bordet[1]; W. Leitner[1]; [1] Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr/D; [2] RWTH Aachen University, Aachen/D

B 17.03 **Synthesis, characterization and application of metal phosphide nanoparticles**
H. Ghazi Zahedi[1]; A. Sodreau[1]; A. Bordet[1]; W. Leitner[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D

B 17.04 **Development of a novel Ni-In_2O_3/ZrO_2 catalyst for methanol synthesis via CO_2 hydrogenation**
P. Kampe[1]; [1] University of Hamburg, Hamburg/D

B 17.05 **Finely tuned catalyst phase composition through facile preparation method for efficient CO_2 hydrogenation over Fe-based catalysts**
L. Kraußer[1]; H. Lund[1]; E. Kondratenko[1]; [1] Leibniz-Institut für Katalyse e.V. (LIKAT), Rostock/D

B 17.06 **Promotional nature of Sn on Pt/CeO_2 for the oxidative dehydrogenation of propane with carbon dioxide**
G. Yang[1]; X. Ren[2]; V. Kondratenko[1]; H. Zhang[2]; E. Kondratenko[1]; Z. Liu[2]; [1] Leibniz-Institut für Katalyse e.V., Rostock/D; [2] Key Laboratory of Syngas Conversion of Shaanxi Province, School of Chemistry & Chemical Engineering, Shaanxi Normal University, Xi'an/CN

B 17.07 **Loading and unloading of the liquid organic hydrogen carrier (LOHC) benzyltoluene using Pt supported on titania catalysts**
B. Bong[1]; C. Mebrahtu[1]; R. Palkovits[1]; [1] RWTH Aachen University Institut für Technische und Makromolekulare Chemie (ITMC), Aachen/D

B 17.08 **Chemo selective synthesis of cyclohexane derivatives via the hydrogenation of aromatic ketones using unligated RhCl3 precursor.**
A. NASRULLAH[1]; S. Chakrabortty[1]; P. Kamer[1]; S. Tin[1]; E. Baráth[1]; J. de Vries[1]; [1] Leibniz Institut für Katalyse e.V., Rostock/D

B 17.09 **Influence of selectively impregnated promoter species on nickel catalysts in the reverse water-gas-shift reaction**
P. Hauberg[1]; A. Wolf[1]; M. Behrens[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D

B 17.10 **Highly Dispersed and Coke-Resistant Co_2^+ Sites for Catalytic Propane Dehydrogenation**
F. Ebert[1]; P. Ingale[1]; G. Lee[1]; S. Vogl[2]; C. Schlesiger[2]; S. Praetz[2]; M. Geske[1]; R. Naumann d›Alnoncourt[1]; E. Gioria[1]; A. Thomas[2]; F. Rosowski[3]; [1] BasCat - UniCat BASF JointLab, Technische Universität Berlin, Berlin/D; [2] Technische Universität Berlin, Berlin/D; [3] BASF SE, Ludwigshafen/D

B 17.11 **Innovative Catalytic Systems for the selective Dehydrogenation of 2,6-Dimethylpiperidine to 2,6-Lutidine and its Reverse Hydrogenation**
M. Bosilj[1]; A. Mansouri[1]; M. Knäbbeler-Buß[1]; R. Szolak[1]; [1] Fraunhofer Institute for Solar Energy Systems, Freiburg/D

B 17.12 **Effect of platinum precursor and support on the dehydrogenation of perhydro benzyltoluene with platinum-rhenium catalysts**
E. Herzinger[1]; D. Strauch[2]; P. Wasserscheid[2]; M. Wolf[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] Forschungszentrum Jülich, Erlangen/D

B 17.13 **Cobalt catalysed homologation of methanol to C_2-oxygenates: A better understanding of the reaction mechanism.**
T. Zevaco[1]; K. Sheikh[1]; J. Jelic[1]; F. Studt[1]; M. Bender[2]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [2] BASF SE, Ludwigshafen am Rhein/D

B 17.14 **ZrO_2-based catalysts for non-oxidative propane dehydrogenation: Tuning the oxygen mobility through promoting with Bi**
T. Otroshchenko[1]; U. Rodemerck[1]; D. Linke[1]; E. Kondratenko[1]; [1] Leibniz-Institut für Katalyse e.V., Rostock/D

B 17.15 **Structural Dynamics of Iron Molybdate Catalysts for Oxidative Dehydrogenation studied by In-situ and Operando Spectroscopy**
J. Welzenbach[1]; L. Schumacher[1]; C. Hess[1]; [1] TU Darmstadt, Darmstadt/D

B 17.16 **Supported Iron Nanoparticles as sustainable Catalysts for the selective Acetylene Hydrogenation under industrial Front-End Conditions**
H. Lamers[1]; M. Rose[1]; M. Lucas[1]; [1] TU Darmstadt, Darmstadt/D

B 17.17 **Hydrogenation of CO_2 to methanol at low temperatures with Mo_2C-based catalysts**
D. Makhmutov[1]; S. Wohlrab[1]; U. Armbruster[1]; [1] Leibniz-Institut für Katalyse e. V., Rostock/D

B 17.18 **Kinetic Investigation of the Influence of Water on Ruthenium as a Hydrogenation Catalyst using in-situ ATR Spectroscopy**
T. Schäfer[1]; M. Rose[1]; M. Lucas[1]; [1] TU Darmstadt, Darmstadt/D

B 17.19 **Copper-zinc based catalysts for the dehydrogenation of dicyclohexylmethanol**
L. Maurer[1]; L. Warmuth[2]; D. Guse[3]; M. Kind[3]; S. Pitter[2]; M. Wolf[2]; F. Auer[1]; P. Wasserscheid[1]; [1] Forschungszentrum Jülich GmbH, Erlangen/D; [2] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; [3] Karlsruhe Institute of Technology (KIT), Karlsruhe/D

B 17.20 **Efficient hydrogenation of N-heterocycles catalyzed by NNP-Manganese(I) pincer complexes at ambient temperature**
J. Fessler[1]; V. Papa[1]; F. Zaccaria[2]; J. Hervochon[1]; P. Dam[1]; C. Kubis[1]; A. Spannenberg[1]; Z. Wei[1]; H. Jiao[1]; C. Zuccaccia[2]; A. Macchioni[2]; K. Junge[1]; M. Beller[1]; [1] Leibniz Institute for Catalysis (LIKAT), Rostock/D; [2] Università degli Studi di Perugia, Perugia/I

B 17.21 **MOF-derived bimetallic FeCo@C catalysts for CO_2-based Fischer-Tropsch synthesis**
T. Herrendorf[1]; C. Wilhelm[1]; W. Kleist[1]; [1] RPTU Kaiserslautern-Landau, Kaiserslautern/D

B 17.22 **Studies on the role of spinel phases in MOF-derived Ni/Al_2O_3 and $NiFe/Al_2O_3$ catalysts on the catalytic activity in CO_2 methanation**
R. Bachmann[1]; C. Wilhelm[1]; W. Kleist[1]; [1] RPTU Kaiserslautern-Landau, Kaiserslautern/D

B 17.23 **On the reactivity of metastable molybdenum carbide clusters in methane dehydroaromatization**
I. Ahangar[1]; [1] Indian Institute of Technology (IIT) Delhi/IND

B 17.24 **CO_2 methanation on Ni catalyst: The role of loading and particle size**
J. Wang[1]; [1] Christian-Albrechts-Universität zu Kiel, Kiel/D

B 17.25 **Guaiacol hydrodeoxygenation over Ni-Fe supported on Nb_2O_5 and SiO_2 catalysts**
N. da Costa Telis[1]; [1] Federal University of Uberlandia, Uberlandia/BR

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B 17.26 **Catalytic Study of Bimetallic PdAu 2D Thin Film Catalysts**
Z. Li[1]; E. Öztuna[2]; C. Rohner[1]; A. Steigert[3]; M. Muske[3]; M. Stredansky[1]; M. Arztmann[3]; S. Wrabetz[1]; J. Kröhnert[1]; M. Dimitrakopoulou[1]; L. Thum[1]; W. Frandsen[1]; A. Hammud[1]; F. Girgsdies[1]; D. Delgado Munoz[1]; J. Frisch[3]; T. M. Kokumai[3]; M. Bär[4]; S. Raoux[5]; T. Schmidt[1]; M. Prieto[1]; A. Bergmann[1]; H. Kuhlenbeck[1]; O. Vinogradova[1]; V. J. Bukas[1]; T. Lunkenbein[1]; A. Trunschke[1]; A. Knop-Gericke[6]; R. Schlatmann[3]; K. Reuter[1]; B. Roldán Cuenya[1]; R. Schlögl[1]; D. Amkreutz[3]; K. Skorupska[1]; [1] Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin/D; [2] Fritz-Haber-Institut der Max-Planck-Gesellschaft; Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/D; [3] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin/D; [4] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH; Friedrich-Alexander-Universität Erlangen-Nürnberg; Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy (HI ERN), Berlin/D; [5] Helmholtz-Zentrum Berlin für Materialien und Energie GmbH; Humboldt University of Berlin, Berlin/D; [6] Max Planck Institute for Chemical Energy Conversion, Mülheim/D

B 17.27 **Impact of Air Exposure on the Hydrogenation Performance of "1 nm" Rh Nanoparticles**
S. Kacem[1]; A. Bordet[1]; W. Leitner[2]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Max Planck Institute for Chemical Energy Conversion, RWTH Aachen University, Mülheim an der Ruhr/D

B 17.28 **Insight into ester hydrogenation catalysis using multinuclear high field FlowNMR**
O. Harper[1]; D. Grainger[2]; C. Lyall[1]; J. Lowe[1]; U. Hintermair[1]; [1] University of Bath, Bath/UK; [2] Johnson Matthey, Cambridge/UK

SELECTIVE OXIDATION/REDUCTION

B 18.01 **A novel green route for the fragrance n-Decanal**
T. Bouveyron[1]; M. Eisenacher[1]; [1] TH Köln - Cologne University of Applied Sciences, Leverkusen/D

B 18.02 **Manganese N,N,N-Pincer Complex-catalyzed Epoxidation of Unactivated Aliphatic Olefins**
D. Verspeek[1]; S. Ahrens[1]; A. Spannenberg[1]; X. Wen[2]; Y. Yang[2]; Y. Li[2]; K. Junge[1]; M. Beller[1]; [1] Leibniz-Institute für Katalyse e.V., Rostock/D; [2] State Key Laboratory of Coal Conversion, Taiyuan/CN

B 18.03 **Catalytic Oxidative Deoxygenation of Fuels Catalyzed by Vanadium Substituted Heteropolyacids and Molecular Oxygen**
S. Eller[1]; M. Huber[1]; J. Tochtermann[2]; W. Korth[2]; A. Jess[2]; J. Albert[1]; [1] University of Hamburg, Institute of Technical and Macromolecular Chemistry, Hamburg/D; [2] University of Bayreuth, Bayreuth/D

B 18.04 **On the Etching-induced Influence of CeO_2–Incorporated Mesoporous H/ZSM-5 Hybrid Systems in Dynamic MTH**
L. Udofia[1]; T. Friederici[1]; P. Veit[1]; S. Petzold[1]; G. Schmidt[1]; F. Scheffler[1]; M. Schwidder[1]; [1] Otto-von-Guericke-Universität, Magdeburg/D

B 18.05 **Unraveling the Active Vanadium Sites and Adsorbate Dynamics in VO_x/CeO_2 Oxidation Catalysts Using Transient IR Spectroscopy**
L. Schumacher[1]; J. Weyel[1]; C. Hess[1]; [1] Technische Universität Darmstadt/D

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B 18.06 **Polyoxometalate based catalysts for the oxidative hydrolysis of cellulose to glycolic acid**
A. Beine[1]; Z. Li[2]; X. Yi[3]; R. Palkovits[4]; C. Liu[5]; X. Wang[2]; [1] Max-Planck-Institut für Chemische Energiekonversion (MPI-CEC), Mülheim an der Ruhr/D; [2] Northeast Normal University, Changchun/CN; [3] Changchun Institute of Applied Chemistry, Changchun/CN; [4] RWTH Aachen University, Aachen/D; [5] Beihua University, Jilin City/CN

B 18.07 **Bimetallic Co/Fe catalysts based on metal-organic framework CPO-27 for the selective oxidation of benzyl alcohol**
B. Heider[1]; M. Teubnerova[1]; C. Wilhelm[1]; W. Kleist[1]; [1] RPTU Kaiserslautern-Landau, Kaiserslautern/D

B 18.08 **Rate enhancing effect of carbon support properties on Pt-catalyzed base-free HMF oxidation**
D. Neukum[1]; E. Saraci[1]; B. Krause[1]; A. Sinigalia[1]; A. Lakshmi Nilayam[1]; J. Grunwaldt[1]; [1] Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D

B 18.09 **Selective oxidation of n-butane to maleic anhydride over titanium phosphate catalysts**
N. Stegmann[1]; [1] Max-Planck-Institut für Kohlenforschung , Essen/D

MISCELLANEOUS

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I. Kappel[1]; M. Vennewald[2]; N. Sackers[2]; R. Palkovits[2]; C. Weidenthaler[1]; [1] Max-Planck Institut für Kohlenforschung, Mülheim an der Ruhr/D; [2] RWTH Aachen University - Institut für Technische und Makromolekulare Chemie (ITMC), Aachen/D

B 20.02 **Multiscale Modelling of Chemical Reactions in Supported Ionic Liquid Phase**
C. Wick[1]; D. Smith[2]; A. Smith[1]; [1] Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen/D; [2] Ruđer Bošković Institute, Zagreb/HR

B 20.03 **Advances in Transmission Electron Microscopy Characterization by Customized Sample Preparation**
J. Menten[1]; D. Ramermann[1]; H. Ghazi Zahedi[1]; A. Bordet[1]; R. Schlögl[2]; W. Hetaba[1]; [1] Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr/D; [2] Max Planck Institute for Chemical Energy Conversion, Fritz Haber Institute of the Max Planck Society, Mülheim an der Ruhr, Berlin/D

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A. Schoch[1]; M. Bauer[1]; [1] Paderborn University, Paderborn/D

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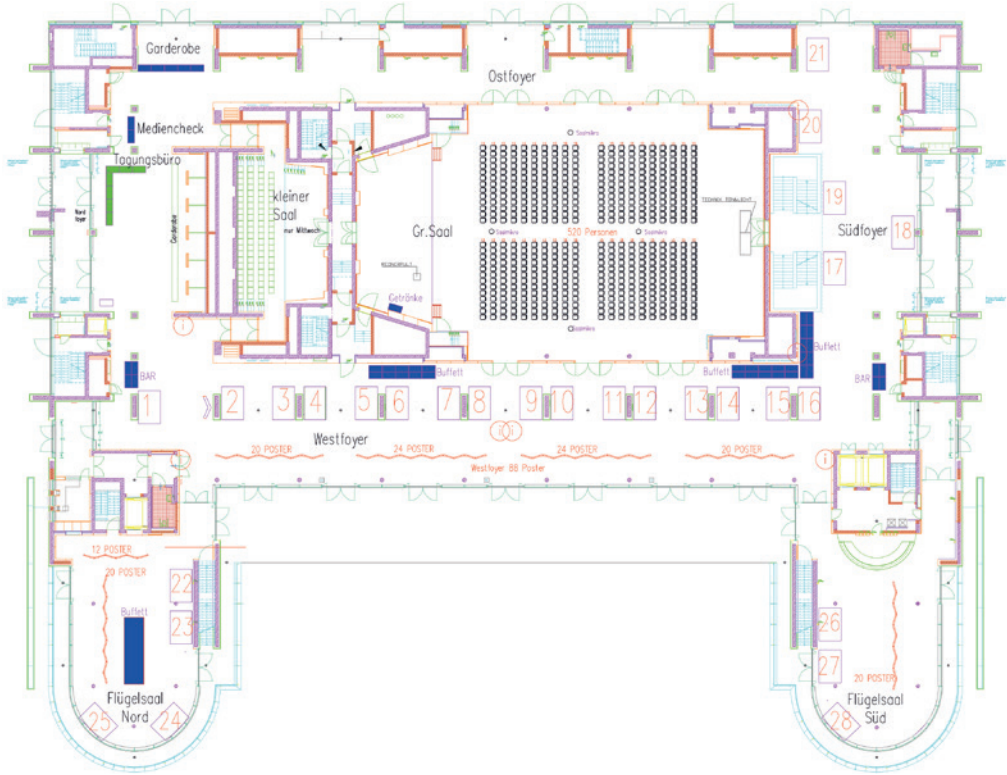

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