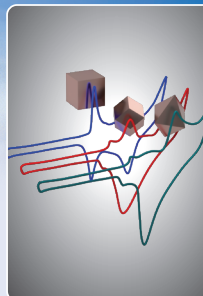
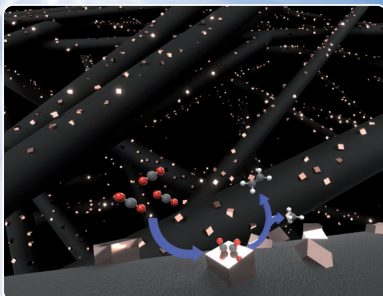




GESELLSCHAFT DEUTSCHER CHEMIKER

ELECTROCHEMISTRY 2022

At the Interface between
Chemistry and Physics



FREIE UNIVERSITÄT BERLIN
TUE 27 – FRI 30 SEPTEMBER 2022

Freie Universität  Berlin



Conference jointly organized by

GDCh-Fachgruppe Elektrochemie



GDCh-Fachgruppe Analytische Chemie

Arbeitskreis Elektrochemische Analysenmethoden
(ELACH, GDCh)



Deutsche Bunsen-Gesellschaft für physikalische
Chemie e.V. (DBG)



Gesellschaft für Chemische Technik
und Biotechnologie e.V. (DEHEMA)



Arbeitsgemeinschaft elektrochemischer
Forschungsinstitutionen e.V. (AGEF)



Gesellschaft für Korrosionsschutz e.V. (GfKORR)



Deutsche Gesellschaft für Galvano- und
Oberflächentechnik e.V. (DGO)

www.gdch.de/electrochemistry2022

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Wednesday, September 28, 2022**08.45 a.m. – 10.30 a.m.**

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Fundamental and theoretical electrochemistry I + II	(Hörsaal B)	9
Interfacial Electrochemistry I + II	(Hörsaal C)	10

01.30 p.m. – 03.30 p.m.

Young Electrochemists' Pitches	(Hörsaal D)	11
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Batteries – Energy Storage III	(Audimax)	13
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04.00 p.m. – 06.15 p.m.

Photoelectrochemistry	(Hörsaal B)	15
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Thursday, September 29, 2022**09.00 a.m. – 10.30 a.m.**

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10.55 a.m. – 03.30 p.m.

Electroanalysis and sensors I + II	(Hörsaal A)	18
Corrosion science/Electrocatalysis – Energy conversion IV	(Hörsaal B)	19
In-situ and operando methods I + II	(Hörsaal C)	20
CO ₂ reduction reaction II + III	(Hörsaal D)	21

04.00 p.m. – 05.40 p.m.

Electroanalysis and sensors III	(Hörsaal A)	22
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In-situ and operando methods III / Batteries – Energy storage IV	(Hörsaal C)	24
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Friday, September 30, 2022**09.00 a.m. – 10.30 a.m.**

Plenary Lecture / Award Ceremony	(Audimax)	26
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10.55 a.m. – 03.30 p.m.

Solid state electrochemistry / Batteries – Energy storage V	(Hörsaal A)	27
Engineering / Electrocatalysis – Energy conversion VI	(Hörsaal B)	28
Electrodeposition and nanostructured materials / Interfacial Electrochemistry II / Award Lectures	(Hörsaal C)	29
Electrosynthesis I + II	(Hörsaal D)	30

SCIENTIFIC COMMITTEE

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Sebastian Ott	TU Berlin
Martin Penno	Fritz Haber Institute of the MPG Berlin
Beatriz Roldán Cuenya	Fritz Haber Institute of the MPG Berlin

Dear colleagues,

Electrochemistry is a successful series of conferences, held every other year. Starting in Gießen (2008), followed by Bochum (2010), Munich (2012), Mainz (2014), Goslar (2016) and Ulm (2018), scientists working in the various areas of electrochemistry joined for discussing cutting-edge trends and applications.

The conference is jointly organized by GDCh Division Elektrochemie, GDCh Arbeitskreis Elektrochemische Analysenmethoden, DBG, DECHEMA, AGEF, GfKORR and DGO.

After a corona gap, Electrochemistry will be continued in Berlin 2022 in person. Outstanding electrochemists from Germany and from abroad will highlight research results and current trends. Parallel sessions will cover nearly all topics of electrochemistry from fundamental science to technical applications.

Electrochemistry – At the Interface between Chemistry and Physics. In this spirit, the organizing committee and societies invite electrochemists, scientists from other disciplines, who are interested in electrochemistry, and students to meet in Berlin. Colleagues from industry and academia, from Germany and abroad are cordially invited to participate in the conference and to enrich its program by their scientific contribution.

Berlin is not only the capital of Germany and one of the most popular cities for tourists worldwide, but its unique atmosphere gives great opportunity for innovations and thinking outside the box. This will provide a fruitful forum for scientific exchange in electrochemistry.

Prof. Dr. Peter Strasser (Chair)
Prof. Dr. Holger Dau
Prof. Dr. Beatriz Roldán Cuenya

Tuesday, September 27, 2022

06.00 p.m. **Welcome Reception**
Harnack-Haus
Ihnestraße 16-20
14195 Berlin

Wednesday, September 28, 2022

08.00 a.m. **Registration**

Audimax

08.45 a.m. **WELCOME**

Session Chair: P. Strasser

09.00 a.m. **PLENARY LECTURE**
Electrochemical activation of molecular nitrogen to ammonia
I. Chorkendorff, Lyngby/DK

Session Chair: H. Dau

09.45 a.m. **PLENARY LECTURE**
Bioelectrocatalysis for Electrosynthesis
S. Minteer, Salt Lake City/US

10.30 a.m. COFFEE BREAK & EXHIBITION

Wednesday, September 28, 2022

Audimax

Batteries – Energy storage I

Session Chair: B. Gollas

10.55 a.m. **KEYNOTE LECTURE**
Fundamentals and Applications of Sodium-ion Batteries
P. Adelhelm, Berlin/DE

11.30 a.m. **Visualizing the structure evolution of CuS-based lithium all solid-state batteries by 3D tomography**
Z. G. Zhang, Berlin/DE, K. A. Mazzio, K. Dong, I. Manke, P. Adelhelm, Berlin/DE

11.50 a.m. **Electrochemical Charge Storage Mechanisms in Confined Electrolytes**
S. Fleischmann, Ulm/DE

12.10 p.m. LUNCH BREAK AND EXHIBITION

Batteries – Energy storage II

Session Chair: P. Adelhelm

01.30 p.m. **Secondary FeF₂-Li Batteries in Ionic Liquid Electrolytes**
L. F. Olbrich, Oxford/GB, A. W. Xiao, M. Pasta, Oxford/GB

01.50 p.m. **Interfacial chemistry and electrolyte approaches for next generation batteries**
J. Popovic-Neuber, Stuttgart/DE

02.10 p.m. **Novel Developments in Battery DEMS**
Z. Jusys, Ulm/DE, R. J. Behm, Ulm/DE

02.30 p.m. **Halogen conversion-intercalation cathode for zinc-ion battery**
A. E. Aynalem, Manchester/GB, L. Le Fevre, R. Dryfe, Manchester/GB

02.50 p.m. **Elucidating the Effect of Al₂O₃ Coating on the Cathode-Electrolyte Interphase Stability of P2-Na_{2/3}Ni_{1/3}Mn_{2/3}O₂ as Cathode Material for Sodium-ion Batteries**
D. Roscher, Ulm/DE, A. Mullaliu, Leuven/BE, M. Hekmatfar, M. Zarrabeitia, M. Polanik, J. Hirlinger-Alexander, Ulm/DE, I. Hasa, Warwick/GB, S. Passerini, Ulm/DE

03.10 p.m. **Development of a High-Throughput Method to Search for New Active Materials for Redox Flow Batteries**
J. Noack, Pfinztal/DE, N. Roznyatovskaya, D. Gerlach, Pfinztal/DE, J. Schumacher, J. Wlodarczyk, G. Mourouga, R. Schaerer, Winterthur/CH, P. de Silva, R. Fornari, Kongens Lyngby/DK, M. Skyllas-Kazacos, C. Menictas, Sydney/AU, A. Wolf, H. Nirschl Karlsruhe/DE, J. Yu, E. Baudrin, A. Franco, Amiens/FR, J. Hamaekers, A. Maaß, Sankt Augustin/DE

03.30 p.m. COFFEE BREAK AND EXHIBITION

continued on page 13

Wednesday, September 28, 2022

Hörsaal A

Electrocatalysis – Energy conversion I

Session Chair: M. Risch

- 10.55 a.m. **KEYNOTE LECTURE**
Evaluation of Electrocatalyst Activity, Stability and Selectivity during dynamic operation – Online Coupling of Analytical Techniques to Electrochemical Flow Cells
 K. Mayrhofer, Erlangen/DE, S. Cherevko, I. Katsounaros, B. Berkes, P. Nikolaenko, Erlangen/DE
- 11.30 a.m. **Active Sites Engineering of Single-Atom Fe-N-C Electrocatalysts for the Oxygen Reduction Reaction**
 G. Chen, Dresden/DE, X. Feng, Dresden/DE
- 11.50 a.m. **Structural Transformations in NiFe LDH Electrocatalysts Resolved by Operando X-ray Scattering**
 F. Dionigi, Berlin/DE, T. Merzdorf, M. Klingenhof, P. Strasser, Berlin/DE
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Electrocatalysis – Energy conversion II

Session Chair: F. Dionigi

- 01.30 p.m. **Combining operando small- and wide-angle X-ray scattering to study the depth-dependent degradation of a Pt/C fuel cell catalyst**
 R. K. Pittkowsky, Copenhagen/DK, J. Schroeder, Bern/CH, I. Martens, R. Chattot, J. Drnec, Grenoble/FR, J. Quinson, J. J. K. Kirkensgaard, Copenhagen/DK, M. Arenz, Bern/CH
- 01.50 p.m. **Lattice Strain Distortion and Dynamics in Noble Metal Nanocatalysts**
 R. Chattot, Montpellier/FR, I. Martens, J. Drnec, Grenoble/FR
- 02.10 p.m. **Reconstruction of (Pre)catalysts during the Oxygen Evolution Reaction: The Role of the Precursor and the Transformation Conditions**
 J. N. Hausmann, Berlin/DE, S. Mebs, L. Konstantin, I. Zebger, H. Dau, M. Driess, P. W. Menezes, Berlin/DE
- 02.30 p.m. **CuNi nanoalloys applied in the Oxygen Evolution Reaction: a study of electronic and geometric effects**
 E. Gioria, Berlin/DE, S. Li, R. Naumann d'Alnoncourt, F. Rosowski, A. Thomas, Berlin/DE
- 02.50 p.m. **The dynamic nature of cobalt and manganese electrocatalysts for the oxygen evolution reaction**
 M. Risch, Berlin/DE, J. Villalobos, Berlin/DE
- 03.10 p.m. **Imaging of the Catalyst Layer Structure of Fuel Cells by Atomic Force Microscopy**
 J. Lorenz, Oldenburg/DE, K. Rücker, C. Harms, G. Wittstock, Oldenburg/DE
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Wednesday, September 28, 2022

Hörsaal B

Fundamental and theoretical electrochemistry I

Session Chair: S. Siahrostami

- 10.55 a.m. **KEYNOTE LECTURE**
Beyond C₂ in CO₂ electroreduction
 N. Lopez, Tarragona/ES
- 11.30 a.m. **Electrochemistry Standing Out - A Theoretical Evaluation of Stepped and Kinked Surface Sites**
 S. Beinlich, Berlin/DE, N. Hörmann, K. Reuter, Berlin/DE
- 11.50 a.m. **Accelerating the Exploration of High Entropy Alloys through Multi-Dimensional Modeling**
 V. A. Mints, Bern/CH, J. K. Pedersen, J. Rossmeisl, Copenhagen/DK, M. Arenz, Bern/CH
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Fundamental and theoretical electrochemistry II

Session Chair: J. Rossmeisl

- 01.30 p.m. **Selectivity toward acetate in electrochemical CO(2) reduction on Cu from multiscale modeling and experiment**
 H. H. Heenen, Berlin/DE, H. Shin, Delaware/US, G. Kastkunger, Lyngby/DK, S. Overa, Delaware/US, J. A. Gauthier, Stanford/US, F. Jiao, Delaware/US, K. Chan, Lyngby/DK
- 01.50 p.m. **Data-driven methodology to study the oxygen electrocatalysis**
 S. Razaqa, Essen/DE, K. S. Exner, Essen/DE
- 02.10 p.m. **Simulating Cyclic Voltammograms from first principles**
 N. Bergmann, Berlin/DE, N. G. Hörmann, K. Reuter, Berlin/DE
- 02.30 p.m. **Quantum-mechanical characterization of sulfur/carbon co-polymer cathodes for Li-S batteries**
 P. Partovi-Azar, Halle (Saale)/DE, R. Kiani, D. Sebastiani, Halle (Saale)/DE
- 02.50 p.m. **Impedance Diagnostics of Electrode Degradation in Solid Oxide Cells using Structure-based Modeling**
 M. Knappe, Jülich/DE, F. Schmidt, T. Kadyk, M. Eikerling, Jülich/DE
- 03.10 p.m. **Ion mobility in complex electrode structure: A theoretical perspective on the chevrel phase and NASICON**
 K. Helmbrecht, Ulm/DE, H. Euchner, Tübingen/DE, A. Groß, Ulm/DE
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Wednesday, September 28, 2022

Hörsaal C

Interfacial Electrochemistry I

Session Chair: R. Compton

- 10.55 a.m. **KEYNOTE LECTURE**
The Role of Adsorbed OH on Platinum Electrodes in the Electrocatalysis of Fuel Cell Reactions
E. Herrero, Spain/ES
- 11.30 a.m. **The interfacial properties of Ag(111) and Au(111) electrodes in aqueous and aprotic electrolytes: double-layer capacitance and thermodynamic modeling**
A. S. Shatla, Bonn/DE, M. Landstorfer, Berlin/DE, H. Baltruschat, Bonn/DE
- 11.50 a.m. **The Electrochemistry of Sodiumdodecylsulfonate on Au(111) in sulfuric acid –Adsorbate structure, voltammetry and friction**
H. Baltruschat, Bonn/DE, A. Koellisch-Mirbach, I. Park,, S. Iqbal, Bonn/DE
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Interfacial Electrochemistry II

Session Chair: H. Baltruschat

- 01.30 p.m. **The cationic enhancement effect on the two-electron oxygen reduction reaction towards hydrogen peroxide in acidic conditions at carbon-based cathodes**
J. Hübner, Berlin/DE, F. Pietschmann, G. Ruland, B. Paul, P. Strasser, Berlin/DE
- 01.50 p.m. **All-Optical Electrochemistry with the Photonic Voltmeter: From Interfacial Structure to Earth-Abundant Solar Photoanodes**
F. Geiger, Evanston/US, C. E. Morrison, E. H. Morrison, Evanston/US
- 02.10 p.m. **Photoelectron spectroscopy on semiconductor electrodes using an integrated electrochemical cell for air free emersion and transfer to vacuum at the endstation SOLIAS at BESSY**
T. Mayer, Darmstadt/DE, W. Jaegermann, J.-P. Hofmann, Darmstadt/DE
- 02.30 p.m. **ITO nanoparticulate film as a scaffold for reactions at liquid|liquid interface**
K. Dusiño, Warsaw/PL, A. Siwiec, M. Warczak, W. Nogala, M. Opałto, Warsaw/PL
- 02.50 p.m. **Investigating the Interface between Ceramic Particles and Polymer Matrix in Hybrid Electrolytes by Electrochemical Strain Microscopy**
P. Veelken, Jülich/DE, M. Wirtz, R. Schierholz, H. Tempel, H. Kungl, R.-A. Eichel, F. Hausen, Jülich/DE
- 03.10 p.m. **Molecular dynamics simulations of the adsorption of different alkali metals on muscovite mica surfaces**
A. T. Celebi, Vienna/AT, M. Valtiner, Vienna/AT
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Wednesday, September 28, 2022

Hörsaal D

Young Electrochemists' Pitches

Session Chair: S. Beil/S. Fleischmann

- 01.30 p.m. **Investigations on Reversible Calcium Plating and Stripping**
E. Jacob, Freiburg/DE, I. Krossing, Freiburg/DE
- 01.36 p.m. **Cost-efficient synthesis of transition metal chalcogenide doped Li₂S@C-cathode materials via carbothermal reduction**
P. Sous, Duisburg/DE, S. D. Hirt, B. Oberschachtsiek, Duisburg/DE
- 01.42 p.m. **Investigation and Development of Tailor-Made Core-Shell Hard Carbon Materials to be used as Negative Electrodes in Sodium Ion Batteries**
P. Appel, Berlin/DE, T. P. Fellingner, Berlin/DE
- 01.48 p.m. **A new strategy to unravel the sodium storage mechanism in hard carbon anodes**
S. Wu, Berlin/DE, T. Fellingner, Berlin/DE
- 01.54 p.m. **Simultaneous determination of different neonicotinoids using amperometric detection/mass spectrometry in capillary electrophoresis**
M. Koall, Regensburg/DE, D. Böhm, F.-M. Matysik, Regensburg/DE
- 02.10 p.m. **Synthesis of Atomically Dispersed Electrocatalyst by Imprinting with Different Template Ions throughout Carbonization**
S. Dietzmann, Berlin/DE, A. Mehmood, Berlin/DE
- 02.16 p.m. **Development of electrocatalysts for the electrochemical water splitting**
M. Berger, Aachen/DE, R. Palkovits, Aachen/DE
- 02.22 p.m. **Novel Catalysts Synthesized by Particle-ALD for Enhancing the Performance and Durability of Proton Exchange Membrane Fuel Cells**
F. Pescher, Freiburg/DE, M. von Holst, S. Vierrath, M. Breitwieser, Freiburg/DE
- 02.28 p.m. **Precious-metal free electrocatalysts for a combined bio-electrochemical production of use chemicals from CO₂**
A. Rieck, Berlin/DE, T. P. Fellingner, Berlin/DE
- 02.34 p.m. **Understanding the Influence of Ionomers on Electrocatalyst Materials for the Oxygen Evolution and Reduction Reaction in Alkaline Media**
K. Rüdiger, Oldenburg/DE, J. Lorenz, C. Harms, M. Wark, Oldenburg/DE

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Wednesday, September 28, 2022

Hörsaal D

Young Electrochemists' Pitches

Session Chair: J. Kintrup

- 02.50 p.m. **Rational Design of Gas Diffusion Electrodes for CO₂ Electrolysis – Young Electrochemists' Pitches**
Q. Chen, Stuttgart/DE, D. Kopljar, A. Kube, S. Geiger, N. Wagner, K. A. Friedrich, Stuttgart/DE
- 02.56 p.m. **Development of multilayer electrodes for electrochemical conversion of CO₂ to CO**
C. Martens, Jülich/DE, B. Schmid, H. Tempel, H. Kungl, R.-A. Eichel, Jülich/DE
- 03.02 p.m. **Impact of the Porous Transport Layer (PTL) on the Performance of PEM Water Electrolysis**
M. Friedrichs-Schucht, Braunschweig/DE, M. Oezaslan, F. Hasché, Braunschweig/DE
- 03.08 p.m. **Bubble dynamics on laser structured porous nickel electrodes**
H. Rox, Dresden/DE, R. Baumann, A. Bashkatov, X. Yang, F. Ränke, A. F. Lasagni, G. Mutschke, K. Eckert, Dresden/DE
- 03.14 p.m. **Basics of Electrochemical Imine Reduction**
J. Kümper, Aachen/DE, R. Palkovits, Aachen/DE
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

Wednesday, September 28, 2022

Audimax

Batteries – Energy storage III

Session Chair: Z. Jusys

- 04.00 p.m. **Flow Optimized Structures for Vanadium Redox Flow Batteries**
M. Schilling, Ulm/DE, F. Hermanutz, Denkendorf/DE, L. Lan, Chongqing/CN, C. Liu, S. Liu, Wuhan/CN, J. Li, Chongqing/CN, P.-C. Sui, Wuhan/CN, R. Zeis, Ulm/DE
- 04.20 p.m. **Corrosion of Aluminium Anodes in Chloroaluminate Electrolytes for Secondary Batteries**
B. Gollas, Graz/AT, G. Kothleitner, D. Moser, S. Steiner, P. Materna, A. Stark, J. Lammer, Graz/AT, A. Csik, Debrecen/HU, J. M. Abdou, R. Dorner, M. Sterrer, W. Goessler, Graz/AT
- 04.40 p.m. **Electrochemical Al³⁺ insertion into cation-deficient titanium oxides**
M. Rittel, Berlin/DE, T. Koketsu, P. Strasser, Berlin/DE, J. Ma, K. Reeves, S.Kang, D. Dambournet, Paris/FR, C. Legein, M.Body, Le Mans/FR, F. Fayon, Orleans/FR, O. Borkiewicz, Illinois/US
- 05.00 p.m. **A new differential electrochemical mass spectrometry (DEMS) setup and its application in sodium ion batteries**
J. Geisler, Berlin/DE, L. Pfeiffer, P. Axmann, Ulm/DE, P. Adelhelm, Berlin/DE
- 05.20 p.m. **Insights into the sodiation mechanism of hard carbon-like materials from electrochemical impedance spectroscopy**
K. Schütjajew, Jena/DE, T. Tichter, Berlin/DE, J. Schneider, Berlin/DE, M. Antonietti, Postdam/DE, C. Roth, Bayreuth/DE, M. Oschatz, Jena/DE
- 05.40 p.m. **Understanding the Phase Transition Involving Cationic/Anionic Redox Activities in Sodium Layered Sulfide Cathodes**
Y. Sun, Berlin/DE, P. Adelhelm, Berlin/DE
- 06.30 p.m. **POSTER SESSION**

Foyer

Wednesday, September 28, 2022

Hörsaal A

Electrocatalysis – Energy conversion III

Session Chair: K. Mayrhofer

- 04.00 p.m. **Criterion for Finding the Optimal Electrocatalyst at any Overpotential**
Y. Zhang, Jülich/DE, J. Huang, M. Eikerling, Jülich/DE
- 04.20 p.m. **Surface and near surface species active in the electrocatalytic oxidation of water revealed by operando surface and bulk X ray spectroscopies**
J. J. Velasco Vélez, Berlin/DE, E. Carbonio, Mülheim (Ruhr)/DE, C.-H. Chuang, New Taipei City/TW, R. Mom, L. Falling, Berlin/DE, R. Arrigo, Manchester/GB, T. Jones, D. Bernsmeier, R. Krähnert, A. Knop-Gerickle, R. Schlögl, Berlin/DE
- 04.40 p.m. **Diagnosis of the Proton Exchange Membrane Water Electrolyzer Performance by Employing a Nonlinear Frequency Response Method**
T. Miličić, Magdeburg/DE, L. A. Živković, T. Vidaković-Koch, Magdeburg/DE
- 05.00 p.m. **Fundamental Studies of Electrocatalysis for Advanced Fuel Cells and Electrolysers**
W. F. Lin, Loughborough/GB, X. Lin, Cambridge/GB, T. Sheng, Wuhu/CN, W. Cai, Shanghai/CN, S. G. Sun, Xiamen/CN
- 05.20 p.m. **Bioinspired atomically dispersed M-N-C catalysts via active-site imprinting into nitrogen doped carbons**
T.-P. Fellinger, Berlin/DE
- 05.40 p.m. **Operando ⁵⁷Fe Mössbauer Spectroscopy of FeNC Catalysts during Oxygen Reduction Reaction**
L. Ni, Darmstadt/DE, C. Gallenkamp, M. Kübler, S. Paul, P. Theis, Darmstadt/DE, S. Chabbra, A. Schnegg, E. Bill, Mülheim (Ruhr)/DE, V. Krewald, U. I. Kramm, Darmstadt/DE
- 06.30 p.m. **POSTER SESSION**

Foyer

Wednesday, September 28, 2022

Hörsaal B

Photoelectrochemistry

Session Chair: I. Chorkendorf

- 04.00 p.m. **KEYNOTE LECTURE**
Functional Transition Metal Oxides and Nitrides for Photoelectrochemical Energy Conversion
I. D. Sharp, Munich/DE
- Session Chair: I. Sharp
- 04.35 p.m. **Electrochemical CO₂ reduction on Ag_xCu_{100-x} supported p-Silicon photocathodes synthesized by one-step electroless deposition**
E. Torralba, Thiais/FR, H. Chaliyawala, L. Soilithi, D. Muller-Bouvet, Thiais/FR, F. Marty, A. Rezgui, T. Bourouina, Noisy-le-Grand/FR, S. Le Gall, Giff-sur-Yvette/FR, S. Bastide, Thiais/FR
- 04.55 p.m. **Paired photoelectrochemical conversion of glycerol and CO₂ at industrially relevant current densities**
Á. Balog, Szeged/HU, E. Kecsenovity, C. Janáky, Szeged/HU
- 05.15 p.m. **From photoactivation to electrodeposition: Comparing the oxidative assembly process of the water-oxidizing Mn-complex in Photosystem II with electrodeposited inorganic metal oxides**
N. Oliver, Berlin/DE
- 05.35 p.m. **Photoelectrochemically rechargeable all-soluble iron redox-flow battery for the direct conversion and storage of solar energy**
T. Tichter, Copenhagen/DK, P. C. K. Vesborg, Copenhagen, Kgs. Lyngby/DK
- 05.55 p.m. **In-situ photovoltage analysis in buried photocathodes using Photoemission spectroscopy**
D. Moritz, Darmstadt/DE, B. Kaiser, J.P. Hofmann, W. Jaegermann, Darmstadt/DE
- 06.30 p.m. **POSTER SESSION**

Foyer

Wednesday, September 28, 2022

Hörsaal C

Bioelectrochemistry

Session Chair: S. Minteer

- 04.00 p.m. **KEYNOTE LECTURE**
DNA Electrochemistry and Bioelectronic Applications: State of the Art
E. Ferapontova, Aarhus/DK
- 04.35 p.m. **Towards the development of an electrochemical equilibrium glucose biosensor**
A. Lielpetere, Bochum/DE, S. Shachneva, A. Muhs, S. Chandra, Bochum/DE, R. Ludwig, Vienna/AT, W. Schuhmann, Bochum/DE
- 04.55 p.m. **Spectroelectrochemical Studies of Oxygen-Tolerant [NiFe] Hydrogenase Immobilized on Transparent Conducting Oxides for Hydrogen Oxidation**
V. Davis, Freiburg/DE, S. Frielingsdorf, O. Lenz, I. Zebger, Berlin/DE, A. Fischer, Freiburg im Breisgau/DE
Session Chair: E. Ferapontova
- 05.15 p.m. **Protein-mediated and Mediator-free Approaches for Photobiocathodes Combining Photosystem I and 3D Nanoparticulate Indium Tin Oxide**
S. Morlock, Wildau/DE, K. Stieger, Wildau/DE, S. Subramanian, A. Zouni, Berlin/DE, F. Lisdat, Wildau/DE
- 05.35 p.m. **Q-lipid containing membranes show high in-plane conductivity using a membrane-on-a-chip setup**
M. Valtiner, Vienna/AT, U. Ramach, Vienna/AT, J. Andersson, Vienna/AT, R. Schöffbeck, Vienna/AT
- 05.55 p.m. **Obtain "ready-to-use" electrochemical biosensors with on-chip cryo-preservation of cells and magnetic cell carriers**
D. Özsoylu, Jülich/DE, R. Welden, Jülich/DE, P. H. Wagner, Leuven/BE, M. M. Demir, Izmir/TR, M. J. Schöning, T. Wagner, Jülich/DE
- 06.30 p.m. **POSTER SESSION**

Foyer

Thursday, September 29, 2022

Audimax

Session Chair: P. Strasser

- 09.00 a.m. **PLENARY LECTURE**
Application and challenges of CO₂ reducing gas diffusion electrodes in renewable value chains
G. Schmid, Erlangen/DE
- Session Chair: B. Roldán Cuenya*
- 09.45 a.m. **PLENARY LECTURE**
Single Entity Spectro-Electrofluorimetry
R. G. Compton, Oxford/GB, M. Yang, C. Batchelor-Mcauley, Oxford/GB
- 10.30 a.m. COFFEE BREAK AND EXHIBITION

Thursday, September 29, 2022

Hörsaal A

Electroanalysis and sensors I

Session Chair: E. Witkowska Nery

- 10.55 a.m. **KEYNOTE LECTURE**
State-of-the-Art of Real Time Electrochemistry – Electro spray Ionization Mass Spectrometry
 F.-M. Matysik, Regensburg/DE
- 11.30 a.m. **Opto-electrochemical Dissolution Reveals Biogenic CaCO₃ Sequestered by Marine Phytoplankton**
 M. Yang, Oxford/GB, C. Batchelor-McAuley, S. Barton, R. E. M. Rickaby, H. Bouman, R. G. Compton, Oxford/GB
- 11.50 a.m. **Electrochemical Impedance Behaviour of a New Type of Inkjet Printed Ion Sensor**
 E. Korek, Munich/DE, J. Frey, R. Brederlow, Munich/DE
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Electroanalysis and sensors II

Session Chair: M. Matysik

- 01.30 p.m. **Nano electrical Mapping of Carbon Nanofibers by Means of PeakForce Tunneling Atomic Force Microscopy**
 J. Borowec, Jülich/DE, V. Selmert, K. Fries, H. Tempel, H. Kungl, R.-A. Eichel, F. Hausen, Jülich/DE
- 01.50 p.m. **Investigation of boron-doped diamond samples with the feedback mode of scanning electrochemical microscopy**
 J. Eidenschink, Regensburg/DE, M. Zelenský, K. Schwarzová-Pecková, A. Taylor, Prague/CZ, F.-M. Matysik, Regensburg/DE
- 02.10 p.m. **Formate Oxidase Reactivity Driving the 3,5,3',5'-Tetramethylbenzidine (TMB) Colour Reaction with a Palladium Catalyst Embedded in an Intrinsically Microporous Polyamine (PIM-EA-TB)**
 L. Wang, Bath/GB, P. J. Fletcher, F. Marken, Bath/GB, M. Carta, Swansea/GB, R. Malpass-Evans, N. B. McKeown, Edinburgh/GB, A. R. Martinez, Cardiff/GB
- 02.30 p.m. **A novel Dual Detection Concept for Capillary Electrophoresis featuring Amperometric Detection and Mass Spectrometry**
 D. Böhm, Regensburg/DE, F.-M. Matysik, Regensburg/DE
- 02.50 p.m. **A Novel Electrochemical DNA Sensor Based on Fluorescence Modulated via Potential Controlled Energy Transfer to a Redox Probe**
 A. Grzędowski, Vancouver/CA, T. Ma, D. Bizzotto, Vancouver/CA
- 03.10 p.m. **Polymer Indicator Displacement Assay in Glucose Sensing**
 S. M. Wikeley, Bath/GB, T. D. James, S. D. Bull, P. J. Fletcher, F. Marken, Bath/GB, P. Lozano-Sanchez, M. Caffio, Stirling/GB
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Thursday, September 29, 2022

Hörsaal B

Corrosion science

Session Chair: L. Kalchgruber

- 10.55 a.m. **KEYNOTE LECTURE**
In situ analysis of corrosion processes by means of coupled electrochemical techniques
 O. Ozcan, Berlin/DE
- Session Chair: O. Ozcan
- 11.30 a.m. **The Mechanism of Passivation Breakdown of High and Medium Entropy Alloys in Aqueous NaCl Electrolytes at Different pH**
 A. Wetzel, Berlin/DE, D. Morell, J. Witt, O. Ozcan, Berlin/DE
- 11.50 a.m. **Characterizing corrosion and passivation processes on steel samples**
 L. Kalchgruber, Vienna/AT, M. Hahn, M. Valtiner, Wien/AT
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Electrocatalysis – Energy conversion IV

Session Chair: M. Busch

- 01.30 p.m. **Electrochemical platinum recovery from new & aged fuel cell electrodes**
 J.-F. Drillet, Frankfurt (Main)/DE, R. Gandharva, C. Schreiber, M. Sakthivel, W. Peters, Frankfurt (Main)/DE
- 01.50 p.m. **Polymers of Intrinsic Microporosity in Electrocatalysis**
 F. Marken, Bath/GB, L. N. Wang, Y. Zhao, Z. K. Li, Bath/GB, M. Carta, Swansea/GB, N. B. McKeown, Edinburgh/GB
- 02.10 p.m. **Fine-Structure Analysis of highly active PtCo_x Electrocatalyst for Oxygen Reduction Reaction (ORR) probed by High Resolution STEM-EELS**
 M. Janssen, Braunschweig/DE, D. Park, J. Klein, M. Oezaslan, Braunschweig/DE
- 02.30 p.m. **Electrochemical Activation of a Cobalt MOF Nanosheets for Superior Electrocatalytic Water Oxidation in Neutral Media**
 P. Ona-Burgos, Valencia/ES
- 02.50 p.m. **Modelling and Simulations of a Low-temperature Direct Ammonia Fuel Cell in Varying Operating Conditions**
 E. Kemppainen, Berlin/DE, R. Schlatmann, S. Calnan, Berlin/DE
- 03.10 p.m. **Electrochemical analysis on transition metal nitride catalysts for nitrogen reduction reaction**
 H. D. Flosadóttir, Reykjavík/IS, E. Skúlason, F. Hanifpour, Reykjavík/IS
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Thursday, September 29, 2022

Hörsaal C

In-situ and operando methods I

Session Chair: B. Roldán Cuenya

- 10.55 a.m. **KEYNOTE LECTURE**
What we can learn in electrochemistry from operando photoemission
 R. Schloegl, Berlin/DE
- 11.30 a.m. **Continuous monitoring of transition metal oxidation states in NMC and NCA cathodes by operando SQUID magnetometry**
 S. Topolovec, Graz/AT, M. Simhofer, G. Klinser, H. Kren, S. Koller, H. Krenn, R. Würschum, Graz/AT
- 11.50 a.m. **Measuring local pH gradients at Cu electrodes during CO₂ electroreduction by in operando ¹³C magnetic resonance imaging**
 M. Schatz, Jülich/DE, S. Jovanovic, R.-A. Eichel, J. Granwehr, Jülich/DE
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

In-situ and operando methods II

Session Chair: R. Schlögl

- 01.30 p.m. **Tracking the Dynamics of Active States in Copper-based Catalysts for Electrochemical CO₂ Reduction Using Operando QXAFS**
 J. Timoshenko, Berlin/DE, A. Bergmann, C. Rettenmaier, M. Rüscher, H. S. Jeon, A. Herzog, B. Roldán Cuenya, Berlin/DE
- 01.50 p.m. **Building Fundamental Understanding of CO₂ Electroreduction Catalysts by In Situ Correlative Atomic Force Microscopy**
 C. S. Kley, Berlin/DE
- 02.10 p.m. **Spins at Work: Probing Charging and Discharging of Organic Radical Batteries by Electron Paramagnetic Resonance Spectroscopy**
 J. Behrends, Berlin/DE, I. Kulikov, N. A. Panjwani, Berlin/DE, A. A. Vereshchagin, St. Petersburg/RU, D. Spallek, Berlin/DE, D. A. Lukianov, E. A. Alekseeva, O. V. Levin, St. Petersburg/RU
- 02.30 p.m. **NIS and operando NFS investigations of ⁵⁷Fe-porphyrin based hydrogen evolution reaction model catalysts**
 N. Heppe, Darmstadt/DE, C. Gallenkamp, S. Paul, N. Segura, Darmstadt/DE, I. Sergeev, Hamburg/DE, V. Potapkin, V. Krewald, U. Kramm, Darmstadt/DE
- 02.50 p.m. **Analyzing Electrochemical Conversion Reactions by Raman-coupled Scanning Electrochemical Microscopy**
 M. Steimecke, Halle (Saale)/DE, M. Bron, Halle (Saale)/DE
- 03.10 p.m. **Achieving sub-millisecond time resolved characterization of electrochemical intermediates: Electrochemically-Induced Raman spectroscopy**
 L. D'Amario, Berlin/DE
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Thursday, September 29, 2022

Hörsaal D

CO₂ reduction reaction II

Session Chair: C. Andronesco

- 10.55 a.m. **KEYNOTE LECTURE**
Considering electrochemical double-layer effects on electrocatalytic activation barriers and ion adsorption with density functional theory
 M. Janik, University Park/US
- 11.30 a.m. **The electronic structure of copper at the electrified solid-liquid interface during the CO₂RR revealed by operando photo-electron spectroscopy**
 J. J. Velasco Vélez, Berlin/DE, R. V. Mom, L. Sandoval, L. Falling, Berlin/DE, C.-H. Chuang, Mülheim (Ruhr)/DE, D. Gao, Berlin/DE, R. Arrigo, New Taipei City/TW, B. Roldán Cuenya, T. Lunkenbein, A. Knop-Gericke, R. Schlögl, Berlin/DE
- 11.50 a.m. **The influence of copper particle size on the electrochemical reduction of CO to products with C-C bonds**
 F. A. Rollier, Eindhoven/NL, M. Costa Figueiredo, E. J. M. Hensen, Eindhoven/NL
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

CO₂ reduction reaction III

Session Chair: V. Velez

- 01.30 p.m. **Development of paired electrochemical paired CO and Cl₂ production**
 R. Latsuzbaia, Delft/NL
- 01.50 p.m. **Local Structure of Ru-Me-O Oxides and its Effect on the Activity and Selectivity in Anodic Gas Evolving Reactions**
 P. Kritl, Prague/CZ
- 02.10 p.m. **Role of Ionic Liquid Electrolytes as a Promoter for CO₂ Electrocatalysis**
 B. Ratschmeier, Münster/DE, B. Braunschweig, Münster/DE
- 02.30 p.m. **The influence of support material on the structural evolution of copper during the electrochemical CO₂ reduction**
 E. Koh, Darmstadt/DE, S. Geiger, Stuttgart/DE, A. Hopf, F. Schüth, Mülheim (Ruhr)/DE, T. Imhof, G. Meyer, Darmstadt/DE, P. Paciok, Jülich/DE, B. Etzold, M. Rose, M. Ledendecker, Darmstadt/DE
- 02.50 p.m. **Investigations on the effects of liquid product accumulation in the electrolyte on CO₂ electrolysis with CuO-based electrodes**
 B. Sahin, Munich/DE, S. K. Raymond, E. Simon, O. Hinrichsen, Munich/DE
- 03.10 p.m. **Steering the structure and selectivity of electrocatalysts by potential pulses**
 C. Rettenmaier, Berlin/DE, J. Tian, O. Magnussen, Kiel/DE, B. Roldán Cuenya, J. Timoshenko, A. Bergmann, A. Herzog, R. M. Arán-Ais, H. S. Jeon, F. T. Haase, U. Hejral, P. Grosse, S. Kühl, E. M. Davis, Berlin/DE
- 03.30 p.m. COFFEE BREAK AND EXHIBITION

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Thursday, September 29, 2022

Hörsaal A

Electroanalysis and sensors III

Session Chair: J. Borowec

- 04.00 p.m. **FRET based nucleic acid biosensor using DNA SAMs under electrochemical control**
A. Grzedowski, Vancouver/CA, D. Bizzotto, Vancouver/CA
- 04.20 p.m. **Paper-based electrode array for the analysis of neurotransmitter mixtures**
E. Witkowska Nery, Warsaw/PL, E. Jarosińska, K. Kappalakandy Valapil, W. Mazurkiewicz, Warsaw/PL
- 04.40 p.m. **Electrochemical biosensors for the early diagnosis of small cell lung cancer**
E. Sehit, Berlin/DE, M. Pirzada, Z. Altintas, Berlin/DE
- 05.00 p.m. **Voltammetric MIP sensors based on graphene quantum dots and gold nanoparticles for the diagnosis of acute myocardial infraction**
G. Hasabnis, Berlin/DE
- 05.20 p.m. **Study of the electrochemical behavior of l-tyrosine and its determination**
S. Bagherimetkazini, Regensburg/DE, F.-M. Matysik, Regensburg/DE
- 07.00 p.m. **CONFERENCE DINNER**
Eventlocation Wasserwerk

Thursday, September 29, 2022

Hörsaal B

Electrocatalysis – Energy conversion V

Session Chair: F. Marken

- 04.00 p.m. **Screening of transition metal nitrides as electrocatalysts for nitrogen reduction using operando ammonia quantification on gas diffusion electrodes**
A. B. Gunnarsdóttir, Reykjavík/IS, F. Hanifpour, A. Luther, A. Sveinbjörnsson, E. Skúlason, H.D. Flosadóttir, Reykjavík/IS
- 04.20 p.m. **Titanium Hydride Formation as a Way to Increase Efficiency of PEM Water Electrolysis**
T. Bystron, Prague/CZ, T. Bautkinova, Prague/CZ, N. Utsch, M. Shviro, Jülich/DE, K. Bouzek, Prague/CZ
- 04.40 p.m. **Product Selectivity in Reduction Reactions versus Hydrogen**
A. Bagger, Copenhagen/DK, H. Wan, Copenhagen/DK, X. Wang, Berlin/DE, M. Filippi, Berlin/DE, I. Stephens, London/GB, P. Strasser, Berlin/DE, J. Rossmeisl, Copenhagen/DK
- 05.00 p.m. **Assessing Fuel Cell Catalyst Layer Activity and Stability Using Gas Diffusion Electrodes**
K. Ehelebe, Erlangen/DE, S. Cherevko, Erlangen/DE
- 05.20 p.m. **Unveiling active sites and reaction mechanisms of Cu₂O nanocubes for ammonia synthesis from electrocatalytic nitrate and nitrite reduction**
L. Bai, Berlin/DE, F. Franco, J. Timoshenko, H. Jeon, A. Yoon, M. Rüscher, S. Kühl, S. W. Chee, A. Bergmann, B. Roldán Cuenya, Berlin/DE
- 07.00 p.m. **CONFERENCE DINNER**
Eventlocation Wasserwerk

Thursday, September 29, 2022

Hörsaal C

In-situ and operando methods III

Session Chair: H. Dau

- 04.00 p.m. **Combined EPR/UV-vis-NIR spectroelectrochemistry as a powerful tool for studying the optical and magnetic properties of doped organic semiconductors**
E. Dmitrieva, Dresden/DE, M. Rosenkranz, Dresden/DE, Y. Alesanco, A. Viñuales, Donostia-San Sebastián/ES
- 04.20 p.m. **Operando studies of anti-perovskite materials with bifunctional redox chemistry in Li-ion batteries**
M. Gorbunov, Dresden/DE, D. Mikhailova, Dresden/DE
- 04.40 p.m. **Operando infrared spectroscopy of $Ti_3C_2T_x$ MXene-confined water-in-salt electrolyte**
M. Lounasvuori, Berlin/DE, T. Mathis, Y. Gogotsi, Philadelphia/US, T. Petit, Berlin/DE
- 05.00 p.m. **Time- and Spatially Resolved Quantification of Transition Metal Dissolution in NCA/Graphite Cells via Operando X-Ray Absorption Spectroscopy**
L. Reinschlüssel, Garching/DE, G. Ceren Tok, A. Berger, H. A. Gasteiger, Garching/DE

Batteries – Energy storage IV

Session Chair: H. Dau

- 05.20 p.m. **In situ stress measurements and ex situ high resolution microscopy of interphases of battery anodes**
S. Mück, Karlsruhe/DE, D. Kramer, R. Mönig, Karlsruhe/DE
- 07.00 p.m. **CONFERENCE DINNER**
Eventlocation Wasserwerk

Thursday, September 29, 2022

Hörsaal D

CO₂ reduction reaction IV

Session Chair: J. Ager

- 04.00 p.m. **Operando Investigation of Bimetallic Cu-based Nanocubes during Static and Pulsed CO₂ Electroreduction toward Liquid Products**
A. Herzog, Berlin/DE, H. S. Jeon, J. Timoshenko, C. Rettenmaier, M. Rüscher, M. Lopez Luna, S. Kühl, F. T. Haase, U. Hejral, A. Bergmann, B. Roldán Cuenya, Berlin/DE
- 04.20 p.m. **Combined modelling and experimental evaluation of advanced catholyte compartment designs for improved CO₂ reduction towards hydrocarbons in flow cell electrolyzers**
M. Filippi, Berlin/DE, T. Möller, P. Strasser, Berlin/DE
- 04.40 p.m. **A Deep Dive into the Stability of Sn-based Electrocatalysts for the Electrochemical CO₂ Reduction Towards Formic Acid**
K. Van Daele, Wilrijk/BE, N. Daems, Wilrijk/BE, D. Pant, Mol/BE, T. Breugelmans, Wilrijk/BE
- 05.00 p.m. **Single-Site Ni-N-C Catalyst for Electrochemical CO₂ Reduction: Fundamental Kinetic and Structural Parameters of the Active Sites**
W. Ju, Berlin/DE, V. Sudarshan, Lyngby/DK, S. Brückner, Berlin/DE
- 05.20 p.m. **Ag electrode for CO₂ conversion with very high CO selectivity and mass activity**
N. B. D. Monti, Turin/IT, M. Fontana, A. Sacco, A. Chiodoni, A. Lamberti, C. F. Pirri, J. Zeng, Turin/IT
- 07.00 p.m. **CONFERENCE DINNER**
Eventlocation Wasserwerk

Friday, September 30, 2022

Audimax

Session Chair: B. Roldán Cuenya

- 09.00 a.m. **PLENARY LECTURE**
Predicting Electrocatalysis at the Atomic Scale
 J. Rossmeisl, Copenhagen/DK
- 09.45 a.m. **AWARD CEREMONY**
Young Electrochemists' Pitches Awards provided by Springer Nature
Wiley Poster Awards
Metrohm Electrochemistry Poster Awards
Young Scientist Award of the GDCh Division of Electrochemistry
Joachim Walter Schultze Prize for young electrochemists 2020 & 2022 provided by AGEF
- 10.30 a.m. COFFEE BREAK AND EXHIBITION

Friday, September 30, 2022

Hörsaal A

Solid state electrochemistry*Session Chair: A. Opitz*

- 10.55 a.m. **KEYNOTE LECTURE**
Characterization of Solid Electrolytes and All-Solid-State Batteries under Pressure Control
 B. Roling, Marburg/DE, N. Kaiser, M. Kroll, M. Cronau, V. Miß, C. König, A. Ramanayagam, Marburg/DE
Session Chair: B. Roling
- 11.30 a.m. **Na-β"-alumina – exploring the next steps for the most applied solid electrolyte**
 C. Dirksen, Hermsdorf/DE, M. Schulz, M. Fertig, K. Skadell, M. Stelter, Hermsdorf/DE
- 11.50 a.m. **Catalyst Particles Caught Between two Stools: Reversible Activity Switching by Applying Electrochemical Polarization**
 A. K. Opitz, Vienna/AT, H. Summerer, A. Nening, C. Rameshan, Vienna/AT
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Batteries – Energy storage V*Session Chair: P. Adelhelm*

- 01.30 p.m. **The energetics of ion and electron transfer across ε-MnO₂ electrode interfaces in aqueous solution**
 K. Malaie, Greifswald/DE, F. Scholz, U. Schröder, H. Wulff, H. Kahlert, Greifswald/DE
- 01.50 p.m. **Understanding ion mobility mechanism using descriptors and scaling relations in solid crystals**
 M. Sotoudeh, Ulm/DE, A. Groß, Ulm/DE
- 02.10 p.m. **Platinum–Palladium Bulk Alloy Single Crystals: Preparation, Characterization and Electrocatalysis Towards Formic Acid Oxidation Reaction**
 R. M. Arán-Ais, Alicante/ES, G. Melle, J. M. Feliu, E. Herrero, Alicante/ES, F. Scholten, B. Roldán-Cuenya, Berlin/DE
- 02.30 p.m. **Outstanding ionic conductivity induced by non-classical defects**
 M. R. Ghazanfari, Berlin/DE, G. Thiele, Berlin/DE
- 02.50 p.m. **Exploring Li⁺ and Na⁺ ion insertion into H₂V₃O₈ by in-operando XRD**
 S. Pokrant, Salzburg/AT, P. Darge, J. Schoiber, D. Söllinger, Salzburg/AT
- 03.10 p.m. **A low-cost Al-graphite battery with urea and acetamide-based electrolytes**
 F. Jach, Erlangen/DE, M. Wassner, Erlangen/DE, E. Brendler, M. Bamberg, S. Khodabakhshjavanani, G. Frisch, Freiberg/DE, U. Wunderwald, Erlangen/DE
- 03.30 p.m. FAREWELL COFFEE BREAK

Friday, September 30, 2022

Hörsaal B

Engineering

Session Chair: G. Schmid

- 10.55 a.m. **KEYNOTE LECTURE**
Mechanistic insights into electrochemical CO₂ reduction via high-resolution operando mass spectrometry
 J. W. Ager, Berkeley/US, H. Ren, Oxford/GB, M. Kovalev, Singapore/SG, A. A. Lapkin, Cambridge/GB
- 11.30 a.m. **Ionic Diode Desalination: Combining Cationic Nafion™ and Anionic Sustainion™ Rectifiers**
 Z. Li, Bath/GB, T. Pang, J. Shen, F. Marken, Bath/GB
- 11.50 a.m. **Scaling-up electrochemical production of bio-based maleic acid**
 R. Latsuzbaia, Delft/NL
- 12.10 p.m. LUNCH BREAK AND EXHIBITION
- Electrocatalysis – Energy conversion VI**
- Session Chair: A. Bagger
- 01.30 p.m. **Molybdenum Sulfide as Non-noble Water Electrolysis Catalysts: the Crucial Impact of Phase in Activity-Stability Relationships**
 D. Escalera-López, Erlangen/DE, C. Iffelsberger, Brno/CZ, P. Holzapfel, M. Bühler, C. van Pham, S. Thiele, M. Pumera, S. Cherevko, Erlangen/DE
- 01.50 p.m. **Exploring the Mechanism of HOCl Decomposition to Chlorate and Oxygen in the Industrial Electrosynthesis of Chlorate**
 M. Busch, Ulm/DE, N. Simic, Bohus/SE, E. Ahlberg, Gothenburg/SE
- 02.10 p.m. **Intermetallic Compounds as Water Splitting (Pre)catalysts**
 P. W. Menezes, Berlin/DE, J. N. Haussmann, H. Dau, M. Driess, Berlin/DE
- 02.30 p.m. **Stability of electrocatalysts on the nanoscale**
 M. Ledendecker, Darmstadt/DE
- 02.50 p.m. **Activation of Ni-based Electrodes for Oxygen Evolution in Alkaline Water Electrolysis**
 A. K. Mechler, Aachen/DE, S. Bhandari, C. Gohlke, Aachen/DE
- 03.10 p.m. **High-performing and durable catalyst coated diaphragms for alkaline water electrolyzers**
 F. P. Lohmann-Richters, Jülich/DE, K. Cinar, M. Shviro, G. P. Keeley, M. Müller, M. Carmo, D. Stolten, Jülich/DE
- 03.30 p.m. FAREWELL COFFEE BREAK

Friday, September 30, 2022

Hörsaal C

Electrodeposition and nanostructured materials

Session Chair: L. Mears

- 10.55 a.m. **KEYNOTE LECTURE**
Operando SXR/XAS Studies of CoO_x Epitaxial Thin Films Catalysts
 P. Allongue, Palaiseau/FR, M. Bouvier, I. Pacheco, Palaiseau/FR, T. Wiegmann, C. Qiu, F. Reikowski, J. Stettner, O. M. Magnussen, Kiel/DE, F. Maroun, Palaiseau/FR
- Session Chair: P. Allongue
- 11.30 a.m. **Nitrogen-rich Carbon Materials from Molecular Precursors and their Structure-Property Relationships in Electrochemical Nitrogen Reduction and Sodium Ion Battery Anodes**
 M. Oschatz, Jena/DE, K. Schutjajew, W. Zhang, Jena/DE, M. Antonietti, Potsdam/DE
- 11.50 a.m. **Electrodeposition of lithium metal – Influence of electrolyte additive vinylene carbonate on growth morphology**
 B. Wolff, Jülich/DE, P. Jakes, F. Hausen, Jülich/DE
- 12.10 p.m. **GENERAL MEETING of the GDCh Division of Electrochemistry**
- 12.40 p.m. LUNCH BREAK AND EXHIBITION
- Electrodeposition and nanostructured materials**
- Session Chair: P. Allongue
- 01.30 p.m. **Imaging and In Situ Force Probing of Electrodeposited Zinc Moderated by Polycationic Polymers**
 L. L. E. Mears, Vienna/AT, G. F. Tiétcha, Herdecke/DE, P. Bilotto, Vienna/AT, M. Roth, I. Klüppel, Herdecke/DE, M. Valtiner, Vienna/AT
- Interfacial Electrochemistry II**
- Session Chair: H. Baltruschat
- 01.50 p.m. **Motion reversals of rising electrogenerated hydrogen bubbles**
 A. Babich, Dresden/DE, A. Bashkatov, X. Yang, S. Hossain, G. Mutschke, K. Eckert, Dresden/DE
- Award Lectures**
- 02.10 p.m. **Award Lecture Young Scientist Award of the GDCh Division of Electrochemistry**
- 02.30 p.m. **Award Lecture J. W. Schultze Prize 2022**
- 03.00 p.m. **Award Lecture J. W. Schultze Prize 2020**
- 03.30 p.m. FAREWELL COFFEE BREAK

Friday, September 30, 2022

Hörsaal D

Electrosynthesis I

Session Chair: S. Waldvogel

- 10.55 a.m. **KEYNOTE LECTURE**
The Synergistic Interplay between Catalysis and Electrosynthesis
 R. Francke, Rostock/DE, A. Prudlik, N. Mohebbati, P. Enders, Rostock/DE, P. Woite, M. Roemelt, Berlin/DE, I. Sokolovs, E. Suna, Riga/LV
- 11.30 a.m. **Direct Electrosynthesis of 2-butanone from Fermentation Supernatant**
 T. Harhues, Aachen/DE, C. Plath, R. Keller, M. Wessling, Aachen/DE
- 11.50 a.m. **Converting Organic Molecules from Nature to Valuable Products**
 S. B. Beil, Groningen/NL
- 12.10 p.m. LUNCH BREAK AND EXHIBITION

Electrosynthesis II

Session Chair: S. Waldvogel

- 01.30 p.m. **Electrochemical hydrogenation of carbohydrates: cathodic reduction of cellobiose to cellobitol**
 M. Chávez Morejón, Leipzig/DE, N. Kurig, Y. Tschauder, R. Palkovits, Aachen/DE, F. Harnisch, Leipzig/DE
- 01.50 p.m. **Simple and Scalable Anodic Synthesis of N,N'-Disubstituted Indazolin-3-ones**
 J. C. Bieniek, Mainz/DE, S. R. Waldvogel, Mainz/DE
- 02.10 p.m. **Electrochemically Generated Periodates as a Versatile Platform Oxidizer**
 S. Waldvogel, Mainz/DE
- 02.30 p.m. **Transition metal-based electrocatalysts for epoxidation of cyclooctene**
 A. Koul, Bochum/DE, W. Schuhmann, Bochum/DE
- 02.50 p.m. **Advances in Electrochemical Synthesis of λ^3 - and λ^5 -iodanes**
 T. Bystron, Prague/CZ, B. Devadas, M. Jirasko, B. Devadas, M. Krupicka, J. Kvicala, Prague/CZ
- 03.30 p.m. FAREWELL COFFEE BREAK

Batteries – Energy storage

- A02 **Influence of Molecule Polarity and Charge on Molecule Transport through the Solid Electrolyte Interphase in Lithium-Ion Batteries**
 I. Pantenburg, Marburg/DE, F. T. Krauss, Marburg/DE, B. Roling, Marburg/DE
- A03 **Influence of Deep Eutectic Solvents' Molar Ratio on Performance for TEMPO-based Polymer Electrodes**
 M. Uhl, Ulm/DE, T. Geng, Ulm/DE, P. Schuster, Ulm/DE, M. Kruck, Ulm/DE, A. Fuoss, Ulm/DE, B. Schick, Ulm/DE, A. Kühne, Ulm/DE, T. Jacob, Ulm/DE
- A04 **Synthesis of Highly Water-Soluble Viologens and their Application in Aqueous Organic Flow Batteries**
 C. Caianiello, Clausthal-Zellerfeld/DE, L. F. Arenas, Goslar/DE, T. Turek, Clausthal-Zellerfeld/DE, R. Wilhelm, Clausthal-Zellerfeld/DE
- A05 **Correlating Intrinsic Electrochemical Properties of Solid Electrolyte Interphase with DC and EIS Scanning Electrochemical Cell Microscopy**
 C. S. Santos, Bochum/DE, E. Ventosa, Burgos/ES, W. Schuhmann, Bochum/DE
- A06 **Multi-element alloys as anodes for sodium-ion batteries**
 Y. Kravets, Berlin/DE, P. Adelhelm, Berlin/DE
- A07 **Sodium-Beta Alumina Solid Electrolyte for Application in Middle- to Low-Temperature Sodium-based Cell Systems**
 M. P. Fertig, Hermsdorf/DE, M. Schulz, Hermsdorf/DE, C. Dirksen, Hermsdorf/DE, M. Stelter, Hermsdorf/DE
- A09 **Is the Lithium Transference Number of Concentrated Liquid Electrolytes measurable using SEI-free $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Electrodes?**
 A. Jaegermann, Marburg/DE, B. Roling, Marburg/DE
- A10 **Novel Polymer Gel Binder for Lithium-Ion Batteries**
 L. Ding, Dresden/DE, A. Omar, Dresden/DE, M. Hantusch, Dresden/DE, D. Mikhailova, Dresden/DE
- A11 **The Growth Mechanism of Lithium Dendrites and its Coupling to Mechanical Stress**
 J. Becherer, Karlsruhe/DE, D. Kramer, Karlsruhe/DE, R. Mönig, Karlsruhe/DE
- A12 **Activation Temperature and its Impact on Carbon Felt Electrodes for Vanadium Redox Flow Batteries**
 K. Köble, Ulm/DE, M. Jaugstetter, Bochum/DE, M. Braig, Ulm/DE, M. Schilling, Ulm/DE, K. Tschulik, Bochum/DE, R. Zeis, Ulm/DE
- A13 **Innovative zinc materials for energy storage systems**
 C. Müller, Duisburg/DE
- A14 **Protective methods for metallic Sodium anode in Sodium Batteries**
 A. Thomas, Dresden/DE, B. Pöhle, Dresden/DE, D. Mikhailova, Dresden/DE

- A15 **A Molecular Precursor Approach Triggering The Growth of Nano-Chevre-Phase Mo_6S_8 for Advanced Aqueous Energy Storage Systems**
A. Elgendy, Manchester/GB, Robert Dryfe, Manchester/GB, D. J. Lewis, Manchester/GB, A. A. Papaderakis, Manchester/GB
- A16 **Electrochemical Characterization of Hybrid Solid Electrolyte-Liquid Electrolytes for Solid State Batteries**
H. M. Woolley, Münster/DE, N. M. Vargas-Barbosa, Münster/DE
- A17 **Understanding the Sodium Storage Mechanism in Ultrasmall CoS Nanoparticles Embedded in Heteroatom Doped Carbon Composite**
C. Liu, Dresden/DE, Q. Lu, Dresden/DE, A. Omar, Dresden/DE, D. Mikhailova, Dresden/DE
- A18 **High N-doped carbon derived from $\text{g-C}_3\text{N}_4$ for Li^+ storage**
Y. Tang, Bayreuth/DE, J. Chen, Tianjin/CN, C. Roth, Bayreuth/DE
- A19 **Investigating the effect of Fe migration on oxygen redox in P_2/O_3 biphasic cathode materials**
Y. Li, Berlin/DE, Y. Sun, Berlin/DE, P. Adelhelm, Berlin/DE, K. A. Mazzio, Berlin/DE
- A20 **Micro- and Nano-scale Silicon in Si/C-Anode Materials for Lithium-ion Batteries**
T. Held, Bayreuth/DE, S. Müllner, Bayreuth/DE, C. Roth, Bayreuth/DE
- A21 **Tracking the Effect of Sodium Insertion and Extraction in SnS-graphite Composites as Anode Materials for Sodium-ion Batteries**
H. Wang, Berlin/DE, S. Yanan, Berlin/DE, K. Mazzio, Berlin/DE, P. Adelhelm, Berlin/DE
- A22 **Semi-Organic Flow Batteries Based on Readily Available Materials**
L. F. Arenas, Goslar/DE, T. Turek, Clausthal-Zellerfeld/DE
- A23 **Investigations of the Polysulfide Conversion Mechanism via Gaussian Approximation Potentials**
X. Han, Berlin/DE, C. G. Staacke, Berlin/DE, H. H. Heenen, Berlin/DE, X. Xu, Beijing/CN, K. Reuter, Berlin/DE
- A24 **Thermal Modeling of a Lithium-Ion Battery Module for Energy-Storage Applications**
C. B. Shin, Suwon/KR, D. Lee, Suwon/KR, S. Kang, Suwon/KR
- A25 **Studying the electrolyte wetting of batteries using EIS**
S. Grundmeier, Braunschweig/DE, N. Schlüter, Braunschweig/DE
- A26 **Novel Ni and Fe containing layered oxides as a cathode material for Li-ion batteries**
P. Sutar, Münster/DE, B. Ying, Münster/DE, K. Kleiner, Münster/DE

- A27 **Stability Issues Related to Use of $\text{NaTi}_2(\text{PO}_4)_3$ as Anode in Aqueous Na-ion batteries**
J. Juodkazyte, Vilnius/LT, G. Gece, Vilnius/LT, M. Petruleviciene, Vilnius/LT, J. Pilipavicius, Vilnius/LT, D. Tediashvili, Vilnius/LT, L. Stasiunas, Vilnius/LT, L. Vilciauskas, Vilnius/LT
- A28 **Reliability of $\text{Na}_3\text{V}_2(\text{PO}_4)_3$ as anode and cathode material for sodium-ion batteries**
T. Akcay, Karlsruhe/DE, D. Kramer, Karlsruhe/DE, R. Mönig, Karlsruhe/DE
- A29 **Investigating the Growth Mechanism of the Solid Electrolyte Interphase on Glassy Carbon Model Electrodes by EIS, CV and ToF-SIMS**
L. Pescara, Marburg/DE, C. König, Marburg/DE
- A31 **Local Electrochemical Properties of the Solid Electrolyte Interphase on Graphite-based Anodes**
S. N. Jiyane, Bochum/DE
- A32 **Investigations on lithium-sulfur battery full cells – Influence of additives on cycling stability and high-rate capability of Li_2S -cathodes**
S. D. Hirt, Duisburg/DE, P. Sous, Duisburg/DE, B. Oberschachtsiek, Duisburg/DE
- A33 **Towards electronically conducting binders for inorganic solid state battery cathode composites**
E. Nazmutdinova, Münster /DE
- A34 **The Effect of Mechanical Cycling on Particle Arrangement and Conductivity of Composite Electrodes**
T. Brendel, Karlsruhe/DE, M. Janzen, Karlsruhe/DE, M. Müller, Karlsruhe/DE, W. Bauer, Karlsruhe/DE, D. Kramer, Karlsruhe/DE, R. Mönig, Karlsruhe/DE
- A36 **On-line monitoring of Aluminum current collector dissolution in Lithium-Ion battery electrolytes**
C. Behling, Erlangen/DE, K. J. J. Mayrhofer, Erlangen/DE
- A37 **Poly(ionic liquid) Nanovesicle-templated Carbon Nanocapsules Functionalized with Uniform Iron Nitride Nanoparticles as Catalytic Sulfur Host for Li-S Batteries**
D. Xie, Berlin/DE, Y. Xu, Berlin/DE, Y. Wang, Berlin/DE, X. Pang, Berlin/DE, E. Härk, Berlin/DE, Z. Kochovski, Berlin/DE, A. Eljarrat, Berlin/DE, C. T. Koch, Berlin/DE, J. Yuan, Stockholm/DE, Y. Lu, Berlin/DE
- A38 **Efficient and homogenous precipitation and dissolution of lithium sulfides within a 3D electrospun catalytic framework in lithium-sulfur batteries**
P. Feng, Berlin/DE, Y. Lu, Berlin/DE

- A39 **Combined first principles-statistical mechanics approach to sulfur structure in organic cathode hosts for polymer based lithium-sulfur (Li-S) batteries**
 Y. Schütze, Berlin/DE, R. de Oliveira Silva, Berlin/DE, J. Rappich, Berlin/DE, Y. Lu, Berlin/DE, V. G. Ruiz, Berlin/DE, A. Bande, Berlin/DE, J. Dzubiella, Freiburg/DE
- A43 **Investigation of Sodium Titanium Phosphate Anode Degradation Mechanism in Na-ion Aqueous Sodium Batteries at Various Cycling Conditions**
 J. Pilipavicius, Vilnius/LT, N. Traskina, Vilnius/LT, D. Tediashvili, Vilnius/LT, L. Vilciauskas, Vilnius/LT
- A45 **Test of $AlCl_3/Et_3NHCl$ as an alternative low-cost electrolyte in Al-ion battery**
 J.-F. Drillet, Frankfurt (Main)/DE, C. Mukundan, Frankfurt a. M./DE, M. Eckert, Frankfurt a. M./DE, W. Peters, Frankfurt a. M./DE
- A46 **Influence of Fe doping on the bifunctional activity of $LaCoO_3$ for zinc-air batteries**
 H. K. Siddiqui, Darmstadt/DE, A. I. Waidha, Stuttgart/DE, S. Kanbach, Darmstadt/DE, M. Kübler, Darmstadt/DE, J. P. P. Palakkal, Darmstadt/DE, S. Haller, Darmstadt/DE, O. Clemens, Stuttgart/DE, L. Alff, Darmstadt/DE, U. I. Kramm, Darmstadt/DE
- A47 **Aqueous zinc-ions battery for stationary energy storage systems**
 W. Peters, Frankfurt (Main)/DE, J. Anthony, Frankfurt/DE, J.-F. Drillet, Frankfurt/DE
- A48 **Evaluation of magnesium-based primary battery with polycaprolactone encapsulation for powering transient electronics**
 J. del Rosario, Quezon City/PH, J. Abarro, Quezon City/PH, J. Ocon, Quezon City/PH
- A49 **Molecular sieving of hydrophobic and hydrophilic ionic liquids for magnesium containing electrolytes**
 O. Elkhafif, Ulm/DE, M. Cebelin, Ulm/DE, A. Farkas, Ulm/DE, T. Jacob, Ulm/DE
- A50 **Comparison of the Temperature-Dependent Impedance and Rate Performance of Silicon and Graphite Anodes**
 C. Berg, Garching/DE, R. Morasch, Garching/DE, M. Graf, Garching/DE, H. A. Gasteiger, Garching/DE
- A51 **Mechanistic comprehension of SEI formation on lithium metal using "ab initio" KMC simulations**
 J. Wagner, Karlsruhe/DE, D. Kuai, College Station/US, U. Krewer, Karlsruhe/DE
- A53 **Platinum Alloys as a Way to Reduce Precious Metals Loading in the PEM Fuel Cells Catalytic Layers**
 K. Bouzek, Prague/PL, M. Paidar, Prague/PL, J. Malis, Prague/PL

Bioelectrochemistry

- B01 **Investigation of photoelectrochemically induced pH changes inside microfluidic channels using a light-addressable potentiometric sensor**
 D. Özsoylu, Jülich/DE, R. Welden, Jülich/DE, P. H. Wagner, Leuven/BE
- B02 **Sensorial detection of the monoamine oxidase B (Mao B) activity**
 S. Morlock, Wildau/DE, S. Höfs, Wildau/DE, G. Göbel, Wildau/DE, A. Talke, Berlin/DE, F. Lisdat, Wildau/DE
- B03 **Shades of Prussian Blue: Photonic Curing as a synthesis method of stable analogues**
 K. Kappalakandy Valapil, Warsaw/PL, E. Witkowska Nery, Warsaw/PL, W. Oliveira da Silva, Sion/CH, H. H. Girault, Sion/CH
- B04 **Electrochemical manipulation of catechol reaction mechanisms**
 J. Appenroth, Vienna/AT, A. T. Celebi, Vienna/AT, M. Valtiner, Vienna/AT, L. L. E. Mears, Vienna/AT
- B05 **Electrochemistry of Alzheimer's disease. Redox differences between Cu(II) complexes N-terminated β -amyloids and their pyroglutamate counterparts**
 M. Jönsson-Niedziółka, Warsaw/PL, N. Baran, Warsaw/PL, M.Z. Wiloch, Warsaw/PL
- B06 **Steps Forward in the Application of 3,3',5,5'-Tetramethylbenzidine (TMB) in Amperometric Assays**
 S. Höfs, Berlin/DE, D. Hülage, Berlin/DE, F. Bennet, Berlin/DE, P. Carl, Berlin/DE, S. Flemig, Berlin/DE, T. Schmid, Berlin/DE, J. A. Schenk, Potsdam/DE, V.-D. Hodoroba, Berlin/DE, R. J. Schneider, Berlin/DE
- B07 **Bioelectrochemical CO_2 conversion using carbon monoxide dehydrogenase on gas-diffusion electrodes**
 J. M. Becker, Bochum/DE, A. Lielpetere, Bochum/DE, J. Birrell, Mühlheim/DE, J. Junqueira, Bochum/DE, F. Conzuelo, Lisbon/PT, W. Schuhmann, Bochum/DE
- B08 **Solid and inexpensive: Geopolymer Electrodes for Cost-Effective Microbial Fuel Cell Applications**
 J. Schuster, Frankfurt (Main)/DE, N. Ukrainczyk, Darmstadt/DE, M. Stöckl, Frankfurt (Main)/DE

CO_2 reduction reaction

- C01 **Kinetic Limitation of Electrocatalytic CO_2 Reduction in Aprotic Electrolytes**
 N. Oppel, Karlsruhe/DE, P. Röse, Karlsruhe/DE, U. Krewer, Karlsruhe/DE
- C02 **Photoelectrochemical CO_2 reduction using nanostructured metal oxide/catalyst hybrid layers assembled at photoelectrodes**
 J. Guerrero, Paris/FR, N. Schneider, Palaiseau/FR, D. Lincot, Palaiseau/FR, N. Naghavi, Palaiseau/FR, M. Robert, Paris/FR

- C03 **Asymmetric N-Cu-S-Cu-S Sites Favor C-C Coupling for Selective CO₂ Electroreduction to C₂ Products**
L. Liang, Berlin/DE, P. Strasser, Berlin/DE
- C04 **Interfacial Engineering on Organometallic Complex-Copper Particle Tandem Catalysts for Electrochemical CO₂ Reduction**
H. Q. Liang, Rostock/DE, M. Beller, Rostock/DE, R. Francke, Rostock/DE
- C05 **Tailoring Copper Nano-morphologies and Carbon/Polymer Gas Diffusion Layers for Efficient and Prolonged Electrochemical CO₂ Reduction to Ethylene**
M. Nieuwoudt, Southampton/GB, S. Ehles, Southampton/GB, S. Mavrikis, Southampton/GB, L. Wang, Southampton/GB, C. Ponce de León, Southampton/GB
- C06 **Tuning the Selectivity for the CO₂ reduction towards CO through specific synthesis of silver catalysts with different morphologies**
B. Hecker, Jülich/DE, E. Robens, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R.-A. Eichel, Jülich/DE
- C07 **Effects of cation Crossover through Anion Exchange Membranes on the Operation of Zero-gap CO₂ electrolyzers**
G. El-Nagar, Berlin/DE, F. Haun, Berlin/DE, S. Gupta, Berlin/DE, S. Stojkovicj, Berlin/DE, M. Mayer, Berlin/DE
- C08 **Molecular-enhanced CO₂ Electroreduction on Copper**
Y. Peng, Berlin/DE, C. Zhan, Berlin/DE, M. Munz, Berlin/DE, H. S. Jeon, Berlin/DE, C. Kley, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- C09 **New Bimetallic Catalyst for the Electrochemical Reduction of Carbon Dioxide**
E. Robens, Jülich/DE, B. Hecker, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R.-A. Eichel, Jülich/DE
- C10 **Operando Investigations of the Cu Solid-Liquid Interface under Stationary and Pulsed CO₂RR Conditions**
A. Bergmann, Berlin/DE, A. Herzog, Berlin/DE, T. E. Jones, Berlin/DE, C. Rettenmaier, Berlin/DE, H. S. Jeon, Berlin/DE, F. T. Haase, Berlin/DE, J. Tian, Kiel/DE, C. Qiu, Kiel/DE, R. AmirbeigiArab, Kiel/DE, O. Magnussen, Kiel/DE, B. Roldán Cuenya, Berlin/DE
- C11 **The deposition of silver nanoparticles in N-doped ordered mesoporous carbons for CO₂ electroreduction to CO**
J. Van den Hoek, Wilrijk/BE, N. Daems, Wilrijk/BE, S. Hoekx, Wilrijk/BE, S. Arnouts, Wilrijk/BE, P. Levecque, Wilrijk/BE, T. Breugelmans, Wilrijk/BE
- C12 **In₂O₃ Nanoparticles for Electrocatalytic CO₂ Reduction to Formate: Impact of catalyst phase and GDE configuration**
T. Wissink, Eindhoven/NL, M. Costa Figueiredo, Eindhoven/NL, E. J. M. Hensen, Eindhoven/NL

- C13 **CO₂ reduction at gas diffusion electrodes coupled with microbial conversion**
I. Dinges, Frankfurt (Main)/DE, D. Holtmann, Gießen/DE, M. Stöckl, Frankfurt (Main)/DE
- C14 **The effect of hydrophobic ionic liquids in CO₂ electroreduction on copper**
W. A. Parada Villarreal, Erlangen/DE, K. Mayrhofer, Erlangen/DE
- C15 **Selectivity Control during the Electrocatalytic Reduction of CO₂ by Tuning the Mesoscopic Structure on UHV-Prepared Cu(111) Single Crystals**
K. C. Nguyen, Berlin/DE, J. P. Bruce, Berlin/DE, A. Yoon, Berlin/DE, J. J. Navarro, Berlin/DE, F. Scholten, Berlin/DE, M. Heyde, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- C16 **Generation of ligand stabilized core-shell high entropy alloy nanoparticles by laser ablation in liquids for CO₂ reduction**
J. Witt, Berlin/DE, J. Sankühler, Berlin/DE, H. Pérez Blanes, Berlin/DE, S. Pentzien, Berlin/DE, A. Conradi, Berlin/DE, C. Prinz, Berlin/DE, O. Ozcan, Berlin/DE
- C18 **Impact of flowfields and spacer on CO₂ to CO electrolyzer with gas diffusion electrode towards a stackable cell design**
M. Quentmeier, Jülich/DE, B. Schmid, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R. Eichel, Jülich/DE
- C19 **Operando investigation of the active sites of metal-nitrogen doped catalysts in CO₂ reduction**
D. Hursán, Berlin/DE, J. Timoshenko, Berlin/DE, H.S. Jeon, Berlin/DE, E. Ortega, Berlin/DE, M. Rüscher, Berlin/DE, A. Herzog, Berlin/DE, C. Rettenmaier, Berlin/DE, F.T. Haase, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- C20 **Copper carbonate hydroxide as precursor of interfacial CO in CO₂ electroreduction**
S. Jiang, Berlin/DE, L. D'Amario, Uppsala/SE, H. Dau, Berlin/DE
- C21 **Development of multilayer electrodes for electrochemical conversion of CO₂ to CO**
C. Martens, Jülich/DE, B. Schmid, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R.-A. Eichel, Jülich/DE
- C22 **Oxide formation in copper foams for electrochemical CO₂ reduction tracked by correlating operando Raman and operando X-ray absorption spectroscopy**
F. Yang, Berlin/DE, S. Jiang, Berlin/DE, S. Mebs, Berlin/DE, T. Kottakkat, Bayreuth/DE, C. Roth, bayreuth/DE, H. Dau, Berlin/DE
- C23 **Functionalization of Solid Surface: From Magnetic to Electrode Materials**
T. Yamamoto, Yokohama/JP, Y. Einaga, Yokohama/JP

- C24 **An experimental investigation of Bi-based MOFs as a performance booster of SnO₂ electrocatalyst for CO₂ reduction**
 O. Cheong, Jülich/DE, P. M. Kowalski, Jülich/DE, A. Hakim, Vancouver/CA, A. Villalbi, Vancouver/CA, P. Hosseini-Benhangi, Vancouver/CA, M. Eikerling, Jülich/DE, E. Gyenge, Vancouver/CA
- C25 **Porous Carbon Supported Ni and Co Single Atom Catalysts for Electrochemical Reduction of Carbon Dioxide**
 Mehmood, Berlin/DE, T.-P. Fellingner, Berlin/DE
- C26 **The role of the anion exchange membrane for CO₂ electroreduction in direct formic acid electrolysis**
 B. Rutjens, Jülich/DE, K. von Foerster, Jülich/DE, H. Weinrich, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R.-A. Eichel, Jülich/DE
- C27 **Electrochemical reduction of CO₂ and CO to multi-carbon products**
 U. Petek, Reading/GB, H. Macpherson, Reading/GB, T. Hodges, Reading/GB, C. Corbos, Reading/GB
- C28 **In situ X-ray absorption spectroelectrochemistry for the study of CO₂ reducing iron porphyrins**
 D. Mendoza-Franzese, Gif-sur-Yvette/FR, E. Anxolabéhère-Mallart, Paris/FR, M. Robert, Paris/FR, B. Lassalle-Kaiser, Gif-sur-Yvette/FR
- C29 **Investigations of the potential dependent behavior of the CO₂RR and the electrochemical stability of sub 10 nm Gold nanoparticles supported on carbon**
 E. Dieterich, Halle (Saale)/DE, S.-J. Kinkelin, Halle (Saale)/DE, M. Steimecke, Halle (Saale)/DE, M. Bron, Halle (Saale)/DE
- C30 **Electrochemical reduction of carbon dioxide on a planar silver electrode**
 M. Sivasankaran, Magdeburg/DE, A. Sorrentino, Magdeburg/DE, T. Vidaković-Koch, Magdeburg/DE
- C31 **Tuning the selectivity of GaN nanowire photocathodes for CO₂ reduction by modifying the morphology and co-catalysis**
 M. Barzgar vishlaghi, Berlin/DE, J. Kang, Berlin/DE, M. T. Mayer, Berlin/DE, P. Bogdanoff, Berlin/DE, L. Geelhaar, Berlin/DE, O. Brandt, Berlin/DE

Corrosion science

- D01 **Characterisation of Electrochemical Passivity from Simple Binary Alloys to High Entropy Alloys**
 D. Dworschak, Erlangen/DE, K.-K. Tseng, Hsinchu/TW, J.-W. Yeh, Hsinchu/TW, H.-W. Cheng, Vienna/AT, M. Valtiner, Vienna/AT
- D02 **COMSOL simulations to develop a new electrochemical flow cell**
 L. Kalchgruber, Vienna/AT, J. Pavelec, Wien/AT, M. Valtiner, Wien/AT

- D03 **Zr-based conversion coatings on primary and recycled aluminium alloys: similarities and differences**
 E. Mysliu, Trondheim/NO, O. Lunder, Trondheim/NO, A. Erbe, Trondheim/NO
- D04 **Investigation of Ion Transport in Polymers with Molecular Dynamics Simulations**
 P. Rosenauer, Graz/AT, S. Larisegger, Vienna/AT, M. Nelhiebel, Villach/AT, S. Radl, Graz/AT
- D05 **Corrosion Behaviour of Microalloyed Fe-Mn-Al-Cr-C Twinning-Induced Plasticity (TWIP) Steels**
 T. O. Olugbade, Berlin/DE, C. Das, Berlin/DE, A. Wetzel, Berlin/DE, J. Witt, Berlin/DE, O. Ozcan, Berlin/DE

Electroanalysis and sensors

- E02 **Electrochemical sensor for simultaneous determination of dopamine and uric acid based on CeNPs@f-MWCNTs nanocomposite modified pencil graphite electrode**
 Y. Temerk, Assiut/EG, H. Ibrahim, Assiut/EG
- E03 **Square Wave Electrogravimetry Quantifies the Adsorption of Redox-Active Molecules with a Precision of Less than <1% of a Monolayer**
 C. Leppin, Clausthal-Zellerfeld/DE, A. Langhoff, Clausthal/DE, D. Johannsmann, Clausthal/DE
- E04 **Fast QCM Combined with Voltage Modulation at the Front Electrode Improves the Depth of Information in Electrochemical Applications**
 C. Leppin, Clausthal-Zellerfeld/DE, A. Langhoff, Clausthal/DE, D. Johannsmann, Clausthal/DE
- E05 **High affinity nanocomposite materials for ultrasensitive electrochemical detection of glucose**
 E. Sehit, Berlin/DE, J. Drzazgowska, Berlin/DE, D. Buchenau, Berlin/DE, Z. Altintas, Berlin/DE
- E06 **BDD modified screen-printed electrodes for detection of neurotransmitters with excellent antifouling properties**
 M. Jönsson-Niedziółka, Warsaw/PL, S. Boonkaew, Warsaw/PL, A. Dettlaff, Gdansk/PL, R. Bogdanowicz, Gdansk/PL
- E08 **Comparison of carbon nanomaterials for neurotransmitters detection**
 W. Mazurkiewicz, Warsaw/PL, A. Małolepszy, Warsaw/PL, E. Witkowska Nery, Warsaw/PL
- E11 **Development of a perspective amperometric biosensing platform in flow injection analysis**
 S. Tvorynska, Prague/CZ, J. Barek, Prague/CZ, B. Josypčuk, Prague/CZ

- E12 **Accelerating field-effect transistor based (bio)sensor research with a miniaturized bipotentiostat**
M. S. Filipiak, Warsaw/PL, M. Wróblewska, Warsaw/PL, M. Suranglikar, Aachen/DE, L. Stratmann, Houten/NL, B. Heery, Houten/NL
- E13 **Hybrid nanoparticles for exploitation of surface plasmon effects in photoelectrochemical sensing**
F. Lisdat, Wildau/DE, S. Zhao, Hamburg/DE, M. Riedel, Wildau/DE, S. Morlock, Wildau/DE, Z. Yue, Nankai/CN, W. Parak, Hamburg/DE

Electrocatalysis – Energy conversion

- F01 **Highly Dispersed Pt Species Consisting of Pt Single-atoms, Clusters and Nanoparticles on Mesoporous N-doped Carbon Nanospheres for Improved Hydrogen Evolution Reaction**
Z. Zeng, Freiburg/DE, S. Kuespert, Freiburg/DE, N. Ortlieb, Freiburg/DE, H. Hussein, Coventry/GB, M. Knäbbeler-Buß, Freiburg/DE, N. Hug, Freiburg/DE, J. Melke, Freiburg/DE, A. Fischer, Freiburg/DE
- F02 **Investigation of the Carbon Corrosion Behavior of Carbon Support Materials for PGM-Based Catalysts in PEM Fuel Cells**
T. Merzdorf, Berlin/DE, E. Hornberger, Berlin/DE, L. Riebel, Berlin/DE, P. Strasser, Berlin/DE
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- F06 **Electro-oxidation of Solketal and Glycerol over Cu-based Electrocatalyst**
B. Kumari, Duisburg/DE, M. Braun, Duisburg/DE, J. Zhang, Bochum/DE, G. Behrendt, Essen/DE, S. Cychy, Bochum/DE, M. Muhler, Bochum/DE, M. Behrens, Kiel/DE, W. Schuhmann, Bochum/DE, C. Andronesco, Duisburg/DE
- F07 **High fidelity statistically relevant electrochemical datasets from scanning electrochemical cell microscopy enable unconventional methods for understanding and screening of electrocatalyst materials for energy conversion**
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- F08 **Influence of carbon support modification on non-noble MNC catalyst for oxygen reduction reaction**
M. Primbs, Berlin/DE, Y. Sun, Berlin/DE, A. Roy, Montpellier/FR, M. Dalkilic, Berlin/DE, P. Schroeer, Berlin/DE, D. Bernsmeier, Berlin/DE, J. Huebner, Berlin/DE, F. Jaouen, Montpellier/DE, P. Strasser, Berlin/DE

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S. El-refaei, Mülheim (Ruhr)/DE, J. Masa, Mülheim (Ruhr)/DE
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L. Schley, Braunschweig/DE, D. Lyu, Braunschweig/DE, J. Quinson, Copenhagen/DK, S. Okeil, Braunschweig/DE, G. Garnweitner, Braunschweig/DE, F. Hasché, Braunschweig/DE, M. Oezaslan, Braunschweig/DE
- F14 **Solid-state NMR insights into alcohol adsorption by metal-organic frameworks: Adsorption state, selectivity, and adsorption-induced phase transitions**
L. Shupletsov, Dresden/DE, A. Khan, Dresden/DE, S. Amanzadeh Salout, Dresden/DE, I. Senkovska, Dresden/DE, S. Kaskel, Dresden/DE, E. Brunner, Dresden/DE
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Fundamental and theoretical electrochemistry

- J01 **Electrochemical Nitric Oxide Reduction Reaction on Metal Surfaces**
H. Wan, Berlin/DE, A. Bagger, Copenhagen/DK, J. Rossmeisl, Copenhagen/DK

- J02 **Consistent Gibbs Transfer Energies of Single Ions: The Transfer of Ag⁺ between Water, Acetonitrile, Propylene Carbonate and Dimethylformamide**
V. Radtke, Feiburg/DE, D. Priester, Freiburg/DE, N. Gebel, Freiburg/DE, M. Bäuerle, Freiburg/DE, R. Stroh, Freiburg/DE, I. Krossing, Freiburg/DE
- J03 **Revisited OH Adsorption on Pt(111) in Static Water Environment**
A. Dávila, Berlin/DE, N. Hörmann, Berlin/DE, T. Eggert, Berlin/DE, K. Reuter, Berlin/DE
- J04 **Understanding the Interfacial Capacitance of 2D materials in Implicit Water Environment**
H. Oschinski, Berlin/DE, N. G. Hörmann, Berlin/DE, K. Reuter, Berlin/DE
- J05 **Enter the void: cavity formation at metal-water interfaces**
T. Eggert, Berlin/DE, N. Hörmann, Berlin/DE, K. Reuter, Berlin/DE
- J06 **Modelling of Carbon-Supported Platinum Nanoparticles Using a Density-Potential Functional Theory**
Y. Zhang, Jülich/DE, J. Huang, Jülich/DE, M. Eikerling, Jülich/DE
- J07 **Introducing a Setup for the Experimental Determination of Gibbs Transfer Energies of Protons**
N. Gebel, Freiburg/DE, V. Radtke, Freiburg/DE, I. Krossing, Freiburg/DE
- J08 **Local Order in AgAuCuPdPt High-Entropy Alloy Surfaces**
H. Kristoffersen, Copenhagen/DK, J. Rossmeisl, Copenhagen/DK
- J09 **Improved DRT determination through a modified sparse spike deconvolution**
T. Bergmann, Braunschweig/DE, N. Schlüter, Braunschweig/DE
- J10 **Analysis of Ion Correlations in Solvate ionic Liquids and in Li Salt / Sulfolane Mixtures**
J. Kettner, Marburg/DE, B. Roling, Marburg/DE

In-situ and operando methods

- K01 **Interactions between furfural and metal surfaces investigated by in situ electrochemical Raman spectroscopy**
T. Lenk, Braunschweig/DE, U. Schröder, Greifswald/DE
- K02 **Monitoring the Gas Evolution of Automotive Lithium-Ion Battery Cells during Operation by Using Online Electrochemical Mass Spectrometry**
J. Scharf, Munich/DE, E. Berg, Uppsala/SE, F.-M. Matysik, Regensburg/DE
- K03 **Exploration of the electrochemical interface structure of InP(100) with reflection anisotropy spectroscopy**
M. Guidat, Tübingen/DE, M. Löw, Ulm/DE, J. Kim, Tübingen/DE, M. M. May, Tübingen/DE

- K04 **In Situ Conductive Atomic Force Microscopy for Correlative Imaging of Catalysts for CO₂ Electroreduction**
M. Munz, Berlin/DE, M. Brulé, Berlin /DE, J. Poon, Berlin/DE, W. Frandsen, Berlin/DE, B. Roldán Cuenya, Berlin/DE, C. S. Kley, Berlin/DE
- K05 **In-situ measurement of Electrochemically Induced Hydrogen Permeation through metallic membranes in contact with Lubricating Oil**
J. Reinbold, Vienna/AT, T. Boiadjeva-Scherzer, Vienna/AT, G. Faflek, Vienna/AT, H. Stache, Munich/DE, B. Vengudusamy, Munich/DE, G. Bodesheim, Munich/DE
- K06 **Upscalability of Electrochemical Flow Cells suitable for Downstream Analysis**
C. Gohlke, Aachen/DE, C. Marcks, Aachen/DE, A. K. Mechler, Aachen/DE
- K07 **Visualizing the spatial heterogeneity of electron transfer on a metal electrocatalyst**
W. Nie, Dalian/CN, F. Fan, Dalian/CN, C. Li, Dalian/CN
- K08 **Electrochemical Investigation and Modeling of Ion- and Water Transport Through Polymer Membranes**
L. Varain, Vienna/AT, G. Faflek, Vienna/AT, M. Nelhiebel, Villach/AT, S. Larisegger, Villach/AT
- K09 **In-situ Mass Spectrometry of LIB thin-film Model Cathode Dissolution in water-enriched Electrolyte**
J. Lüchtfeld, Erlangen/DE, H. Hemmelmann, Gießen/DE, S. Wachs, Stuttgart/DE, K. J. Mayrhofer, Erlangen/DE, M. T. Elm, Gießen/DE, B. B. Berkes, Ludwigshafen/DE
- K10 **Breathing electrodes – operando dilatometry as method to investigate the expansion of carbon electrodes in sodium-ion batteries**
I. Escher, Berlin/DE, G. A. Ferrero, Berlin/DE, M. Goktas, Berlin/DE, Y. Kravets, Berlin/DE, P. Adelhelm, Berlin/DE
- K11 **Study of the Gold Dissolution Mechanism in Presence of Ozone and Chlorides by on-line electrochemical ICP-MS**
K. Stojanovski, Erlangen/DE, V. Briega Martos, Erlangen/DE, M. Smiljani, Ljubljana/SI, N. Hodnik, Ljubljana/SI, S. Cherevko, Erlangen/DE
- K12 **Tracking heterogeneous structural motifs and the redox behaviour of copper-zinc nanocatalysts for the electrocatalytic CO₂ reduction using operando time resolved spectroscopy and machine learning**
M. Rüscher, Berlin/DE, A. Herzog, Berlin/DE, J. Timoshenko, Berlin/DE, H. Jeon, Berlin/DE, W. Frandsen, Berlin/DE, S. Köhl, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- K13 **In-situ Raman investigations of Ni-based OER electrocatalysts**
I. Efthimiopoulos, Düsseldorf/DE, M. Rabe, Düsseldorf/DE

- K14 **In Situ laboratory-XAFS at the Technische Universität Berlin**
S. Praetz, Berlin/DE, C. Schlesiger, Berlin/DE, B. Bischoff, Berlin/DE, M. Bekheet, Berlin/DE, A. Gili, Berlin/DE, R. Schomäcker, Berlin/DE, A. Gurlo, Berlin/DE, W. Malzer, Berlin/DE, B. Kanngießer, Berlin/DE
- K15 **Mechanistic study via operando diffraction and spectroscopy on novel organic inorganic hybrid material through cation intercalation in layered van der Waals NiPS₃**
S. Pazez, Dresden/DE, A. Efimenko, Berlin/DE, M. Roslova, Dresden/DE, M. Gorbunov, Dresden/DE, D. Mikhailova, Dresden/DE, A. Omar, Dresden/DE
- K16 **XAFS with a highly efficient, laboratory-based spectrometer**
C. Schlesiger, Berlin/DE, S. Praetz, Berlin/DE, W. Malzer, Berlin/DE, B. Kanngießer, Berlin/DE
- K17 **Operando Quick-X-ray Absorption Spectroscopy (Quick-XAS) Investigation on Cu/Cu-oxide foams during CO₂RR**
S. Blaseio, Braunschweig/DE, A. Dutta, Bern/CH, M. Rahaman, Cambridge/GB, K. Kiran, Bern/CH, A. Dworzak, Braunschweig/DE, B. Mahrt, Braunschweig/DE, P. Broekmann, Bern/CH, M. Oezaslan, Braunschweig/DE
- K18 **Epitaxial thin film nickel oxide catalysts for the oxygen evolution reaction**
A. Etxebarria, Berlin/DE
- K19 **Tracking the Incorporation of Fe Impurities into NiO Electrocatalysts during Reaction using Electrochemical Cell Transmission Electron Microscopy and Operando Spectroscopy**
Y. Fengli, Berlin/DE
- K20 **Spectroelectrochemical Investigations of Biogenic Substrates**
N. Kurig, Aachen/DE, R. Palkovits, Aachen/DE
- K21 **Tracking the evolution of Ni-based single atom catalysts for the CO₂ electroreduction reaction: an operando XAS study**
A. Martini, Berlin/DE, J. Timoshenko, Berlin/DE, D. Hursan, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- K22 **High energy surface x-ray diffraction study of transition metal based model electrodes for the Oxygen Evolution Reaction**
U. Hejral, Berlin/DE, J. Timoshenko, Berlin/DE, B. Roldán Cuenya, Berlin/DE, A. Etxebarria, Berlin/DE, E. M. Davis, Berlin/DE, A. Bergmann, Berlin/DE, A. Herzog, Berlin/DE, C. Rettenmaier, Berlin/DE, F. Haase, Berlin/DE, A. Jamshaid, Berlin/DE, L. Bai, Berlin/DE, E. Liberra, Berlin/DE, H. Kühlenbeck, Berlin/DE
- K23 **Comparative studies of the facet and composition dependence of the oxygen evolution reaction on Co_xFe_{3-x}O₄ thin films**
E. M. Davis, Berlin/DE, A. Bergman, Berlin/DE, H. Kühlenbeck, Berlin/DE, B. Roldán Cuenya, Berlin/DE
- K24 **Dynamic transformation of cubic copper catalysts during CO₂ electroreduction and its impact on catalytic selectivity**
P. Grosse, Berlin/DE

- K25 **Unveiling C-C coupling on Cu surface during CO₂RR by operando Raman spectroscopy**
C. Zhan, Berlin/DE
- K26 **Spectroscopic in situ-investigation of the degradation mechanisms at carbon electrodes for the positive half-cell reaction in all-vanadium redox flow batteries**
S.-J. Kinkelin, Halle (Saale)/DE, M. Steimecke, Halle (Saale)/DE, E. Dieterich, Halle (Saale)/DE, M. Bron, Halle (Saale)/DE
- K27 **Bridging the Gap between Aqueous Electrolytes and Deep Eutectic Solvents: Atomistic Insights at the Metal/Electrolyte Interface using in-situ STM**
Y. Mattausch, Ulm/DE, T. Jacob, Ulm/DE, L. Kibler, Ulm/DE, A. Abdelrahman, Ulm/DE
- K28 **Identifying ageing processes by operando electrochemical dilatometry and operando mass spectrometry**
J. Petit, Pfinztal/DE, P. Marquezini, Pfinztal/DE, T. Gerber, Pfinztal/DE, M. Joos, Pfinztal/DE, M. Hagen, Pfinztal/DE, J. Tübke, Pfinztal/DE
- K29 **Potential dependant electronic and structural changes of Pt and Co atoms inside PtCo nanoparticles using operando X-Ray Absorption Spectroscopy (XAS)**
J. Klein, Braunschweig/DE, M. Janssen, Braunschweig/DE, A. Dworzak, Braunschweig/DE, S. Blaseio, Braunschweig/DE, M. Oezaslan, Braunschweig/DE

Interfacial electrochemistry

- L01 **Electrosynthesis of surfactant-free CNT@PEDOT nanocomposite thin films at a polarized liquid/liquid interface for supercapacitor applications**
A.F. Quintero-Jaime, Limerick/IE, N. Rojas-Sanabria, Limerick/IE, A. Holzinger, Limerick/IE, D. A. Gamero-Quijano, Alicante/ES, M. D. Scanlon, Limerick/IE
- L03 **Exploring the Structure-Sensitivity in Additively Iron-Based Bulk Metallic Glass Composite/electrolyte interphases for the Oxygen Evolution Reaction**
R. Martinez Hincapie, Mülheim an der Ruhr/DE, J. Wegner, Duisburg-Essen/DE, S. Kleszczynski, Duisburg-Essen/DE, V. Čolić, Mülheim an der Ruhr/DE
- L04 **The Modified Liquid-Liquid Interface: The Effect of an Interfacial layer of MoS₂ on Ion Transfer**
H. Al Nasser, Manchester/GB, R. Dryfe, Manchester/GB, M. Bissett, Manchester/GB
- L05 **Atomic-scale friction study: Underpotential deposition (UPD) of silver on I-modified Au(111) in aqueous and aprotic electrolytes**
H. Baltruschat, Bonn/DE, I. Park, Bonn/DE

- L07 **Development of a miniaturized electrochemical cell for liquid/liquid measurements**
M. Durka, Warsaw/PL, E. Witkowska Nery, Warsaw/PL
- L08 **Nanoscale inspection of alkaline droplet surface interaction using a pH independent redox mediator**
S. Varhade, Bochum/DE
- L09 **Ion transfer across true oil (rapeseed, sunflower, linen) aqueous electrolyte interface electrogenerated by redox reaction. Oxygen reduction reaction.**
A. Siwiec, Warsaw/PL, K. Dusito, Warsaw/PL, M. Warczak, Warsaw/PL, M. Opałto, Warsaw/PL
- L10 **Interfacial electropolymerization at soft polarized interfaces using Fenton chemistry**
B. M. B. Felisilda, Warsaw/PL, D. A. Gamero-Quijano, Alicante/ES, M. Scanlon, Limerick/IE, M. Jönsson-Niedziółka, Warsaw/PL
- L11 **Electronic structure and surface stability of complex spinel alkaline OER catalysts**
C. M. Tian, Darmstadt/DE, C. Maheu, Darmstadt/DE, F. E. Oropeza, Madrid/ES, X. C. Huang, Xiamen/CN, R. Schmidt-Grund, Ilmenau/DE, M. Marton, Darmstadt/DE, W. Donner, Darmstadt/DE, H. L. Zhang, Xiamen/CN, J. P. Hofmann, Darmstadt/DE
- L12 **Understanding the thermal decomposition mechanism of the solid electrolyte interphase in Lithium-ion batteries**
I. Heitmann, Berlin/DE, T. P. Fellinger, Berlin/DE, M. Börner, Münster/DE
- L13 **On the Growth Regimes of Hydrogen Bubbles at Microelectrodes**
A. Bashkatov, Dresden/DE, S. S. Hossain, Dresden/DE, A. Babich, Dresden/DE, H. Rox, Dresden/DE, X. Yang, Dresden/DE, G. Mutschke, Dresden/DE, K. Eckert, Dresden/DE
- L14 **Molecular-level Insights into CO₂ Electroreduction Mechanisms on Gold Surfaces**
Y. Zhou, Berlin/DE, B. Roldán Cuenya, Berlin/DE, S. C. Kley, Berlin/DE
- L15 **Investigation of Au(100) and Au(110) surfaces in HCl and H₂SO₄ by electrochemical reflection anisotropy spectroscopy**
M. Löw, Ulm/DE, M. Guidat, Tübingen/DE, F. Keller, Ulm/DE, J. Leist, Ulm/DE, J. Kim, Tübingen/DE, M. M. May, Tübingen/DE
- L16 **Self-organized structures of PTCA on the Au (111) electrode surface**
K. Gratzfeld, Bonn/DE, A. J. Kny, Bonn/DE, T. Kosmala, Wroclaw/PL, R. Wasielewski, Wroclaw/PL, M. Nowicki, Wroclaw/PL, K. Wandelt, Bonn/DE, M. Sokolowski, Bonn/DE
- L17 **Electrochemistry at graphene-nanoparticle-graphene sandwich electrodes**
K. Balasubramanian, Berlin/DE, T. Grosser, Berlin/DE, M. Wehrhold, Berlin/DE, A. Yadav, Berlin/DE, T. Neubert, Berlin/DE

Photoelectrochemistry

- M01 **Combinatorial Screening of Cu-W Oxide-Based Photoanodes for Photoelectrochemical Water Splitting**
S. Baues, Oldenburg/DE, H. Vocke, Oldenburg/DE, L. Harms, Oldenburg/DE, K. K. Rücker, Oldenburg/DE, M. Wark, Oldenburg/DE, G. Wittstock, Oldenburg/DE
- M02 **Determining the sensitivity of fluorogenic reporting reactions towards sub-detection limit electrochemistry**
S. Linfield, Warsaw/PL, S. Gawinkowski, Warsaw/PL, W. Nogala, Warsaw/PL
- M03 **Investigation of photoelectrochemical production of reactive chlorine species on BiVO₄ photoanode**
M. Petruleviciene, Vilnius/LT, I. Savickaja, Vilnius/LT, J. Juodkazyte, Vilnius/LT
- M04 **Towards Photoelectrochemical Disinfection of Water: Generation of Strong Oxidants Using WO₃ Photoanode**
J. Juodkazyte, Vilnius/LT, M. Petruleviciene, Vilnius/LT, I. Savickaja, Vilnius/LT, M. Parvin, Vilnius/LT
- M05 **Oxidation behavior of silicon carbide in different hydroxide-based electrolytes**
K. Mairhofer, Vienna/AT, F. Fröch, Vienna/AT, F. Santos, Villach/AT, S. Larisegger, Vienna/AT, G. Fafilek, Vienna/AT
- M06 **Investigation of BiVO₄ and α -Fe₂O₃ Photoanodes for Light-enhanced Oxygen Evolution in Power-to-X Technologies**
K. V. Henke, Jülich/DE, H. Weinrich, Jülich/DE, H. Tempel, Jülich/DE, H. Kungl, Jülich/DE, R.-A. Eichel, Jülich/DE
- M07 **Surface Processes During Hydrogen Peroxide Generation And Release With Graphitic Carbon Nitride(g-C₃N₄)**
A. Karunakaran, Bath/GB, C. R. Bowen, Bath/GB, F. Marken, Bath/GB, M. Carta, Swansea/GB, N. B. McKeown, Edinburgh/GB
- M08 **Influence of doping and surface carbon on interfacial resistance and photoelectrochemical performance of BiVO₄**
X. Wu, Darmstadt/DE, J. P. Hofmann, Darmstadt/DE

Solide state electrochemistry

- N01 **Closed porosity causing extreme oxygen pressures in solid oxide electrolysis anodes**
M. Krammer, Vienna/AT, A. Schmid, Vienna/AT, M. Siebenhofer, Vienna/AT, A. Nennung, Vienna/AT, A. Bumberger, Vienna/AT, C. Herzig, Vienna/AT, A. Limbeck, Vienna/AT, C. Rameshan, Vienna/AT, M. Kubicek, Vienna/AT, J. Fleig, Vienna/AT

- N02 **Development of Cathode Materials for Thin Film based Membrane Electrode Assemblies for the Solid-State Ammonia Synthesis**
 A.-E. Surkus, Rostock/DE, H. Mena, Rostock/DE, R. Francke, Rostock/DE, S. Wohlrab, Rostock/DE, J. Wallis, Greifswald/DE, O. Ravkina, Hermsdorf/DE, R. Kriegel, Hermsdorf/DE, R. v. Mallinckrodt, Duisburg/DE, J. Wartmann, Duisburg/DE, A. Kruth, Greifswald/DE
- N04 **Thiophosphate-Polymer Hybrid Electrolytes for High Performance Solid-State Battery Cathodes**
 S. Puls, Münster/DE, N. M. Vargas-Barbosa, Münster/DE
- N05 **Reaction Kinetics and high mobility of Pt thin film electrodes on an yttria-stabilised ZrO₂ electrolyte under the application of bias voltage**
 K. Rath, Vienna/AT, A. Nennung, Vienna/AT, A. K. Opitz, Vienna/AT
- N06 **Defect and strain characterization of multilayered SrTi_{0.3}Fe_{0.7}O_{3-δ} | La_{0.6}Sr_{0.4}CoO_{3-δ} thin film electrodes via in-situ impedance spectroscopy during pulsed laser deposition**
 C. Böhme, Vienna/AT, M. Siebenhofer, Vienna/AT, S. Ražnjević, Leoben/AT, C. Riedl, Vienna/AT, Z. Zhang, Leoben/AT, J. Fleig, Vienna/AT, M. Kubicek, Vienna/AT
- N07 **Investigation of the Exchange Current Densities in Bulk-Type All-Solid-State Batteries**
 A. Ramanayagam, Marburg/DE, V. Miß, Marburg/DE, B. Roling, Marburg/DE
- N08 **Annealing-Induced Conductivity Enhancement in Sulfide-Based Solid Electrolytes: What is the Role of the Thio-LISICON II Phase and of other Nanoscale Phases?**
 V. Miß, Marburg/DE, S. Neuberger, Siegen/DE, E. Klotz, Darmstadt/DE, J. O. Weiershäuser, Marburg/DE, D. Gerken, Marburg/DE, Y. Xu, Marburg/DE, S. Krüger, Darmstadt/DE, F. di Capua, Darmstadt/DE, M. Vogel, Darmstadt/DE, J. Schmedt auf der Günne, Siegen/DE, B. Roling, Marburg/DE
- N09 **Investigations on Ion Transport Tortuosities in Composite Cathodes of All-Solid-State Batteries**
 C. König, Marburg/DE, B. Roling, Marburg/DE

Young Electrochemists' Pitches

- 001 **Nanostructured Copper-based Catalysts for Electrochemical CO₂ Reduction**
 N. Liu, Rostock/DE, H. Q. Liang, Rostock/DE, S. Wohlrab, Rostock/DE, R. Francke, Rostock/DE
- 002 **Electrocatalytic Ammonia Synthesis Study of Transition Metal Sulfides Catalysts**
 J. C. Wang, Reykjavik/IS, H. D. Flosadóttir, Reykjavik/IS, E. Skúlason, Reykjavik/IS

- 003 **First-principles molecular dynamics simulations of electrified Pt(111)/H₂O interfaces**
 L. Li, Berlin/DE, N.G. Hörmann, Berlin/DE, K. Reuter, Berlin/DE
- 004 **Development of an Efficient Electrochemical Hydrogen Compressor**
 R. Bagacki, Berlin/DE
- 005 **Electrochemical reduction of carbon dioxide on a planar silver electrode**
 M. Sivasankaran, Magdeburg/DE, A. Sorrentino, Magdeburg/DE, T. Vidaković-Koch, Magdeburg/DE

Der Karriereservice für Chemie und Life Sciences

Nutzen Sie das Netzwerk der GDCh:

- ▶ Stellenanzeigen für PhD und Postdoc
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GESELLSCHAFT DEUTSCHER CHEMIKER

www.gdch.de/karriere

▶ POSTER SESSION

The poster session will take place in the foyer of Henry-Ford-Bau on Wednesday, September 28, from 06.30 p.m. to 08.30 p.m.

The poster author is requested to be at his poster during the poster session.

There are fifteen sections with following topics:

- A Batteries – Energy storage**
- B Bioelectrochemistry**
- C CO₂ reduction reaction**
- D Corrosion science**
- E Electroanalysis and sensors**
- F Electrocatalysis – Energy conversion**
- G Electrodeposition and nanostructured materials**
- H Electrosynthesis**
- I Engineering**
- J Fundamental and theoretical electrochemistry**
- K In-situ and operando methods**
- L Interfacial electrochemistry**
- M Photoelectrochemistry**
- N Solide state electrochemistry**
- O Young Electrochemists' Pitches**

Times to mount the posters:

Wednesday, September 28, 2022: 09.00 a.m. – 04.00 p.m.

Material for attaching the posters will be provided by the GDCh.

Times to remove the posters:

Wednesday, September 28, 2022: after the poster session

Posters which are not removed in time will not be stored or mailed to the authors.

▶ ORAL PRESENTATIONS

To ensure a smooth congress flow your presentation will be transferred to our PCs and checked in time before your lecture. We kindly ask you to hand over your presentation to our technical staff in the lecture hall on the day of your lecture.

▶ PROGRAM CHANGES

The organizers are not liable for any changes made to the program. Please visit www.gdch.de/electrochemistry2022 regularly for updates.

SCIENTIFIC AWARDS

All prizes will be awarded during the Award Ceremony on September 30 from 09.45 a.m. to 10.30 a.m..

Young Electrochemist's Pitches Awards

Springer Nature provides one-year combined online and print subscription for the three top presentations.

Wiley Poster Awards

Three poster prizes of € 150,- each (as gift card) officially sponsored by Wiley.

Wiley is a leading international publisher of print and electronic products, publishing scientific, technical, medical, and scholarly (STMS) journals, encyclopedias, books, and online products and services as well as educational materials for undergraduate and graduate students. Please find more on <http://www.wiley.com>.

Metrohm Electrochemistry Poster Awards

Metrohm offers the Metrohm poster prize (introduced at ELACH conference 1993). Three excellent poster contributions will be awarded (€ 1.500 in total) to young researchers who have not yet received their doctoral degree. Posters will be judged by the Award Committee appointed by the Scientific Advisory Board.



Young Scientist Award of the GDCh Division of Electrochemistry

The GDCh-Division of Electrochemistry awards a young chemist (less than 30 years of age). The prize is donated by BASF SE and consists of a certificate, € 1.000 and the invitation to the conference.

The awardee is given the opportunity to present his/her results work in an award lecture on September 30 from 02.10 p.m. to 02.30 p.m..



Joachim Walter Schultze Prize for young electrochemists provided by AGEF

This prize will be awarded at the Electrochemistry 2022 to a young electrochemist who is at the beginning of her/his scientific carrier, has made a significant contribution to electrochemical research, and has demonstrated a visible independent profile.

The awardees is given the opportunity to present their results work in an award lecture on September 30 from 02.30 p.m. to 03.30 p.m.

The next Schultze prize will be awarded in 2024.

Tuesday, September 27, 2022

06.00 p.m.

Welcome Reception

Harnack-Haus
Tagungsstätte der Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.
Innestraße 16-20
14195 Berlin
<https://www.harnackhaus-berlin.mpg.de/de>

included in conference fee

Limited capacity. Registration is required as part of the online registration.

Wednesday, September 28, 2022

06.30 p.m. – 08.30 p.m.

Poster Session

Foyer
Henry-Ford Bau der FU Berlin
Garystraße 35
14195 Berlin

With free drinks and snacks

Thursday, September 29, 2022

07.00 p.m.

Conference Dinner

Eventlocation Wasserwerk
Hohenzollerndamm 208a
10717 Berlin
<https://wasserwerk-berlin.de>

Participant: 60,00 € (VAT included)

Student: 30,00 € (VAT included)

Food and drinks included

Limited capacity. Registration is required as part of the online registration.

The Wasserwerk is located In the heart of West Berlin City, 10 minutes from the exhibition center and 5 minutes from the Kudamm, the Wasserwerk is easily accessible from the motorway (Ring A10 exit Hohenzollerndamm) and U-Bahn (Hohenzollernplatz) right in front of the door and only a few minutes to the Zoologischer Garten train station with ICE connection. Numerous renowned hotels of all categories are in the immediate vicinity of the event location and can be reached on foot.

▶ VENUE

Henry-Ford-Bau der FU Berlin
Garyastraße 35
14195 Berlin

▶ BADGES

You will receive your personalized name badge at the conference office. Please wear your name badge throughout the conference, in particular for the coffee and lunch breaks. In case you have lost your badge, please report at the conference office.

▶ BEVERAGES UND LUNCH

Coffee, tea and soft drinks will be provided for free during the breaks. Lunch on Wednesday, Thursday and Friday is included in the conference fee.

▶ CLOAKROOM

Coats and luggage can be deposited in the cloakroom. The cloakroom will be open during the following times:

Wednesday, September 28, 2022:	08.00 a.m. to 08.30 p.m.
Thursday, September 29, 2022:	08.30 a.m. to 06.00 p.m.
Friday, September 30, 2022:	08.30 a.m. to 04.30 p.m.

▶ COVID-19

It is recommended to wear an FFP2 mask during the conference, but it is not mandatory.

▶ CONFERENCE OFFICE (Registration)

The conference office is located in the Henry-Ford-Bau and will be open at the times indicated below:

Tuesday, September 27, 2022	05.00 p.m. to 07.30 p.m.
Wednesday, September 28, 2022	08.00 a.m. to 07.00 p.m.
Thursday, September 29, 2022	08.30 a.m. to 04.00 p.m.
Friday, September 30, 2022	08.30 a.m. to 01.30 p.m.

▶ WIFI CONNECTION

WIFI connection will be available for every participant. You can either use „eduroam“ (if supported by your home institution) or the conference WLAN.

▶ LANGUAGE

The official language of the conference is English.

▶ COPYRIGHT PERMISSION

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▶ INSURANCE AND LIABILITY

The Organizers do not accept liability for personal injury or loss or damage of private property of participants and accompanying persons either during or while travelling to the conference. Participants are strongly recommended to seek insurance coverage for health and accident, lost luggage and trip cancellation.

▶ MOBILE PHONES

Participants are kindly requested to keep their mobile phones off in the meeting rooms during sessions.

▶ PUBLIC TRANSPORTATION

The conference will be held in the Henry-Ford building of Freie Universität Berlin, which is located in “Dahlem” at the southwesterly outskirts of Berlin. The university can be reached by subway (U3) from Berlin city exiting at “Freie Universität (Thielplatz)”.

▶ TAXIS

There are many taxi-stops in the city and you can order a taxi by telephone. Prices are set according to a basic charge and a set price per kilometre.

▶ TIME ZONE

Berlin is in the Central European time zone. Central European Standard Time (CET) is 1 hour ahead of Greenwich Mean Time (GMT).

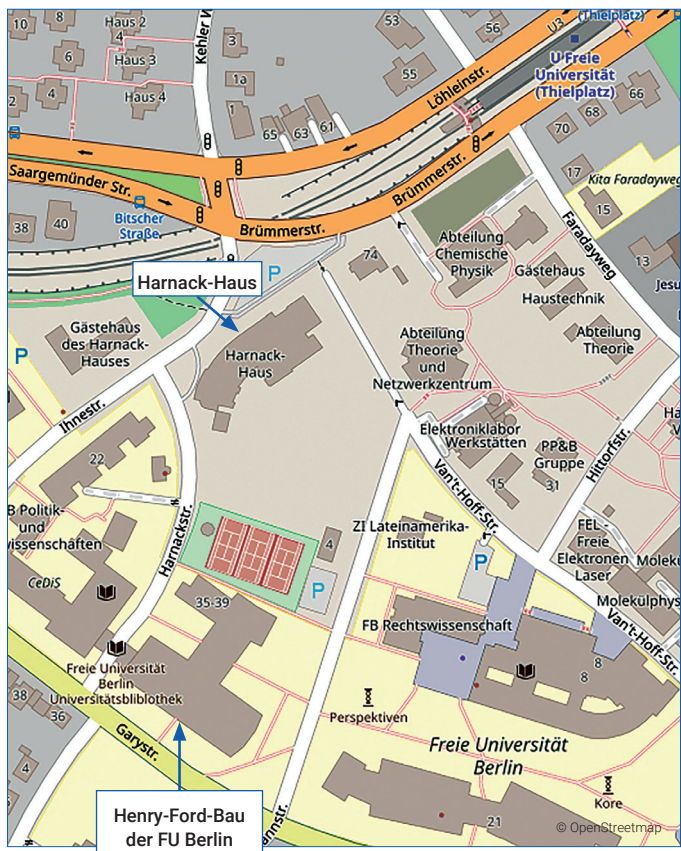
▶ INFORMATION AFTER THE MEETING

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