

Wednesday, September 23, 2020

## Session 1

Chairs: Karin Kleiner & Christina Roth

09.00 a.m.

### Welcome Session 1

09.15 a.m.

#### **Sodium insertion into TiO<sub>2</sub> electrodes during (dis)charging of sodium-ion batteries monitored by operando XANES and HAXPES**

A. Siebert, Berlin/DE, R. Garcia-Diez, Berlin/DE, X. Dou, Ulm/DE, R. Félix, Berlin/DE, G. Greco, Berlin/DE, E. Handick, Berlin/DE, R. G. Wilks, Berlin/DE, I. Hasa, Ulm/DE, S. Passerini, Ulm/DE, M. Bär, Berlin/DE

09.35 a.m.

#### **Oxygen Release of Ni-Rich Cathode Active Materials Monitored by In Situ Impedance Spectroscopy**

S. Oswald, Garching/DE, D. Pritzl, Garching/DE, M. Wetjen, Garching/DE, H. A. Gasteiger, Garching/DE

09.55 a.m.

#### **Stabilizing Effect of Polysulfides on Lithium Metal Anodes in Sparingly Solvating Solvents**

F. S. Reuter, Dresden/DE, P. Härtel, Dresden/DE, C.-J. Huang, Taipei/TW, Y.-C. Hsieh, Münster/DE, S. Dörfler, Dresden/DE, T. Abendroth, Dresden/DE, G. Brunklaus, Münster/DE, H. Althues, Dresden/DE, M. Winter, Münster/DE, S. D. Lin, Taipei/TW, B.-J. Hwang, Taipei/TW, S. Kaskel, Dresden/DE

10.15 a.m.

### Coffee Break

10.30 a.m.

#### **A diffusion barrier interlayer for successful electrochemical performance of Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> sputtered thin films on stainless steel substrate**

G. Baraldi, Vitoria-Gasteiz/ES, I. Madinabeitia, Vitoria-Gasteiz/ES, R. Cid, Vitoria-Gasteiz/ES, E. Gonzalo, Vitoria-Gasteiz/ES, F. Fernández-Carretero, Vitoria-Gasteiz/ES, A. García Luis, Vitoria-Gasteiz/ES, M. A. Muñoz-Márquez, Vitoria-Gasteiz/ES

10.50 a.m.

#### **Polybromide distribution in electrolytes for bromine flow batteries – Their investigation and influence on electrolyte conductivity**

M. Küttinger, Pfinztal/DE, J. K. Włodarczyk, Winterthur/CH, T. Faverge, Pfinztal/DE, P. Fischer, Pfinztal/DE, J. Tübke, Pfinztal/DE

11.10 a.m.

#### **Membraneless microfluidic fuel cells with increased power density by passive flow control**

W. Rösing, Ilmenau/DE, J. König, Ilmenau/DE, C. Cierpka, Ilmenau/DE

11.30 a.m.

### Lunch Break

## Coffee chats: VIP hubs

12:30 p.m.

### HUB 1

#### **Bridging the Gap in Electrochemical Test Conditions - from Electrocatalyst to Electrode to Electrochemical Process**

Insights and lessons learned from industry and academia: bring-in your own experience and improve test protocols and strategies for lab size experiments

Jürgen Kintrup (Covestro Deutschland AG)

### HUB 2

#### **Trends in Electrochemistry Publishing**

Meet Francesca Riboni (Associate Editor of *Advanced Energy Materials* and *Energy Technology*) to learn about open access and other trends in electrochemistry publishing. This will include practical information

on how to publish open access in Wiley journals (in many cases charge-free for authors covered by the agreement with Projekt DEAL). Following her short presentation, Francesca will be joined by Kate Lawrence (Editor-in-Chief of *ChemElectroChem*) and there will be plenty of time to ask questions and discuss with these two expert editors.  
Torben Quasdorf (Wiley-VCH GmbH)

### HUB 3

#### **ECS Student Chapter Münster presents: The Mosaic of Battery Research – en Route for the Big Picture**

The newly founded ECS Student Chapter Münster will introduce itself and the members will present their topics in an elevator pitch style. Afterwards, the members will guide a discussion on the Big Picture of battery research.

ECS Student Chapter Münster ([info.chapter.ecs@uni-muenster.de](mailto:info.chapter.ecs@uni-muenster.de))

### HUB 4

#### **How to Introduce Organic Electrosynthesis to a Chair for Technical Chemistry**

A first-hand experience report by doctoral candidates and post docs

Nils Kurig (ITMC, RWTH Aachen University)

### Session 2

Chairs: [Matthew Mayer & Roland Marschall](#)

01.30 p.m.

#### **Welcome Session 2**

01.45 p.m.

#### **Impact of hydrophobicity and local pH change on product selectivity in CO<sub>2</sub> electroreduction**

[N. Sikdar, Bochum/DE](#), [J. R. C. Junqueira, Bochum/DE](#), [S. Dieckhöfer, Bochum/DE](#), [M. Braun, Essen/DE](#), [T. Quast, Bochum/DE](#), [J. Weidner, Bochum/DE](#), [D. Öhl, Bochum/DE](#), [C. Andronescu, Essen/DE](#), [W. Schuhmann, Bochum/DE](#)

02.05 p.m.

#### **Dipole-Field Interactions Determine the CO<sub>2</sub> Reduction Activity of 2D Fe–N–C Single-Atom Catalysts**

[S. Vijay, Lyngby/DK](#), [J. Gauthier, Palo Alto/US](#), [H. Heenen, Lyngby/DK](#), [V. Bukas, Lyngby/DK](#), [H. Kristoffersen, Lyngby/DK](#), [K. Chan, Lyngby/DK](#)

02.25 p.m.

#### **Application of On-line ICP-MS in Photoelectrocatalysis**

[A. Kormányos, Erlangen/DE](#), [J. Knöppel, Erlangen/DE](#), [B. Mayerhöfer, Erlangen/DE](#), [A. Hofer, Erlangen/DE](#), [F. Speck, Erlangen/DE](#), [J. Bachmann, Erlangen/DE](#), [S. Thiele, Erlangen/DE](#), [S. Cherevko, Erlangen/DE](#)

02.45 p.m.

#### **Coffee Break**

03.00 p.m.

#### **Photosystem I monolayers with controlled orientation for the fabrication of energy conversion devices**

[F. Conzuelo, Bochum/DE](#), [P. Wang, Bochum/DE](#), [F. Zhao, Bochum/DE](#), [A. Frank, Bochum/DE](#), [A. Lielpetere, Bochum/DE](#), [S. Zacarias, Lisbon/PT](#), [M.M. Nowaczyk, Bochum/DE](#), [I.A.C. Pereira, Lisbon/PT](#), [A. Ruff, Bochum/DE](#), [M. Rögner, Bochum/DE](#), [W. Schuhmann, Bochum/DE](#)

03.20 p.m.

#### **3D printed nanocarbon electrodes and scanning electrochemical microscopy for energy innovations**

[C. Iffelsberger, Brno/CZ](#), [M. Pumera, Brno/CZ](#)

03.40 p.m.

#### **Electrochemical Upgrading of Biogenic Di-Acids for the Sustainable Production of Fuels**

[F. J. Holzhäuser, Aachen/DE](#), [M. Dahmen, Jülich/DE](#), [A. König, Aachen/DE](#), [S. Palkovits, Aachen/DE](#), [R. Palkovits, Aachen/DE](#)

Thursday, September 24, 2020

### Session 3

**Chairs: Kai Exner & Mehtap Özaslan**

09.00 a.m.

#### Welcome Session 3

09.15 a.m.

#### **Capturing the Dynamic Evolution of Electrocatalysts under Reaction Conditions with Liquid Phase Electron Microscopy**

S. W. Chee, Berlin/DE, A. Yoon, Berlin/DE, P. Grosse, Berlin/DE, B. Roldan Cuenya, Berlin/DE

09.35 a.m.

#### **Scanning Gel Electrochemical Microscopy (SGECM): Local Electrochemistry with Flexible Spatial Resolution**

N. Dang, Nancy/FR, M. Etienne, Nancy/FR, A. Walcarius, Nancy/FR, L. Liu, Nancy/FR

09.55 a.m.

#### **Enhancing the activity of alkaline hydrogen evolution reaction by lateral electrode structuring**

T. L. Maier, Munich/DE, M. Golibrzuch, Munich/DE, S. Mendisch, Munich/DE, W. Schindler, Munich/DE, M. Becherer, Munich/DE, K. Krischer, Munich/DE

10.15 a.m.

#### Coffee Break

10.30 a.m.

#### **The electrified Cu/aqueous interface under alkaline conditions: Converging experiment and theory via kinetics**

H. H. Heenen, Kongens Lyngby/DK, A. Tiwari, Kongens Lyngby/DK, A. S. Bjørnlund, Kongens Lyngby/DK, H. H. Kristoffersen, Kongens Lyngby/DK, S. Horch, Kongens Lyngby/DK, K. Chan, Kongens Lyngby/DK

10.50 a.m.

#### **Entropy changes during phase transition of pyridine adlayers on Au(111)**

K. Josifovska, Karlsruhe/DE, M. Schönig, Karlsruhe/DE, R. Schuster, Karlsruhe/DE

11.10 a.m.

#### **Electrosorption from a grand canonical first-principles perspective**

N. Hörmann, München/DE, K. Reuter, München/DE

11.30 a.m.

#### Lunch Break

### Coffee chats: VIP hubs

12:30 p.m.

#### HUB 5

##### **Methods in electrochemistry: GDE approach and CV simulation**

Presenting a new cell design (Matthias Arenz, Bern, CH) and introducing the free Python tool „Polarographica“ (Tim Tichter, Berlin)  
Roland Marschall und Christina Roth (Universität Bayreuth)

#### HUB 6

##### **The Future of Electrocatalysis: From Fundamental to Applied Research**

Presentation on the field in five acts, each followed by interesting discussion with special guest Herbert Over (Gießen,DE)  
Katarina Josifovska, Marco Schönig (KIT)

#### HUB 7

##### **How will theory help?**

Past and future contributions of atomistic simulations: A discussion with special guest Jan Rossmeisl

(Copenhagen, Denmark)  
Nicolas Hörmann (TUM)

## HUB 8

### **Analysis, design und modification of carbon interfaces for electrochemical energy storage**

Our group is focusing on carbon materials for the application in lithium ion and redox-flow battery systems. We are particularly interested in characterization and modification of carbon electrode interfaces by various methods. Feel free to join the hub to chat with us.

Frieder Scheiba (KIT)

## Session 4

**Chairs: Tim-Patrick Fellingner & Michael Bron**

01.30 p.m.

### **Welcome Session 4**

01.45 p.m.

### **Structural, morphological and electrochemical characterization of the degradation process of Fe-N@CNT catalyst for the oxygen reduction reaction.**

S.-J. Kinkelin, Halle/Saale/DE, M. Steimecke, Halle/Saale/DE, E. Dieterich, Halle/Saale/DE, M. Bron, Halle/Saale/DE

02.05 p.m.

### **Stability Evaluation of OER Catalysts in Aqueous and Polymer Electrolyte**

J. Knöppel, Erlangen/DE, M. Möckl, Garching/DE, D. Escalera López, Erlangen/DE, S. Cherevko, Erlangen/DE

02.25 p.m.

### **Decoupled Water Electrolysis for High-Efficiency Hydrogen Generation**

A. Landman, Haifa/IL, H. Dotan, Caesarea/IL, A. Rothschild, Haifa/IL, G. Grader, Haifa/IL

02.45 p.m.

### **Coffee Break**

03.00 p.m.

### **Tools and Characterisation Techniques for Determining the Intrinsic Catalytic Activity of Single Co<sub>3</sub>O<sub>4</sub> Nanoparticles**

T. Quast, Bochum/DE, S. Saddler, Essen/DE, H. Barike Aiyappa, Bochum/DE, P. Wilde, Bochum/DE, Y.-T. Chen, Bochum/DE, S. Schulz, Essen/DE, W. Schuhmann, Bochum/DE

03.20 p.m.

### **Enhanced catalytic activity towards formic acid oxidation for Sn-promoted Pd nanocubes**

C. Rettenmaier, Berlin/DE, R. Arán Ais, Berlin/DE, J. Timoshenko, Berlin/DE, S. Kühn, Berlin/DE, R. Rizo, Berlin/DE, H. Jeon, Berlin/DE, A. Bergmann, Berlin/DE, B. Roldán Cuenya, Berlin/DE

03.40 p.m.

### **Understanding of the Electrochemical Degradation of Nitrogen-doped Pt/C Electrocatalysts for PEMFC**

B. Mahrt, Braunschweig/DE, P. Weber, Braunschweig/DE, C. Dosche, Oldenburg/DE, M. Oezaslan, Braunschweig/DE

04.00 p.m.

### **Awards & Closing**

04.15 p.m.

J. W. Schultze Award-Lecture

### **J. W. Schultze Award-Lecture**

04.30 p.m.

Förderpreis der GDCh-Fachgruppe Elektrochemie

**Förderpreis der GDCh-Fachgruppe Elektrochemie**