

International Workshop on

Interfaces and Interphases

in Electrochemical Energy Materials and Systems

16.02. - 17.02.2023

Organized by the Saltus! project group: Anna Fischer, Ingo Krossing and Severin Vierrath

Location: Freiburg Institute for Advanced Studies (FRIAS), Albertstr. 19, 79104 Freiburg

Scientific Program

15.02.2023	Arrival Dinner for invited speakers if desired.
16.02.2023	Day 1
FRIAS Lecture Hall	
09:00 – 09:15	Welcome and Introduction Anna Fischer (IAAC / FMF / FIT / livMatS) Ingo Krossing (IAAC / FMF / FIT / livMatS) Severin Vierrath (IMTEK / FMF / FIT)
09:15 – 10:00	Shannon Boettcher (Oregon Center for Electrochemistry, USA) Pure Water AEM Electrolysis: Catalyst Fundamentals to Performance, Durability, and Electrode Interface Design
10:00 – 10:20	Zhiqiang Zeng (University of Freiburg / IAAC / FMF / Fischer-Group) Pt Entities Consisting of Pt Single-atoms, Clusters and Nanoparticles on Mesoporous N-doped Carbon Nanospheres for improved Hydrogen Evolution Reaction and Ultrahigh Mass Activity
10:20 – 11:00	Andreas Münchinger (University of Freiburg / IMTEK / Vierrath-Group) Selective ion transport through ion exchange Membranes
11:00 – 11:30	Coffee Break

11:30 – 12:15	<p>Serhiy Cherevko (Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy)</p> <p>Stability of electrocatalysts: From model electrodes to high-throughput and real systems</p>
12:15 – 12:35	<p>Sven Küspert (IAAC / FMF / Fischer-Group)</p> <p>Correlative electrochemical-TEM study: Probing the stability of mesoporous N-doped carbon supported Pt nanoparticle ORR electrocatalysts</p>
<p>Lunch Break 12:35 – 14:00</p>	<p>FRIAS Lounge Lunch and discussion</p>
14:00 – 14:45	<p>Ulf-Peter Apfel (Fraunhofer UMSICHT & Ruhr University Bochum)</p> <p>Crossing the valley of death: From Lab-scale to Pilot-scale CO₂ Reduction chemistry</p>
14:45 – 15:05	<p>Luca Bohn (IMTEK / FMF / FIT / Vierrath-Group)</p> <p>Integrated reference electrodes for electrochemical CO₂ reduction and their limitations</p>
15:05 – 15:50	<p>Nicola Pinna (Institut für Chemie, Humboldt-Universität zu Berlin)</p> <p>Role of Heterojunctions in Metal Oxide Heterostructures for Energy and Environmental Applications</p>
15:50 – 16:10	<p>Coffee Break</p>
16:10 – 16:55	<p>Dominic Bresser (Helmholtz Institute Ulm)</p> <p>Polymer Interlayers for Stabilized Interfaces with Lithium-Metal Electrodes</p>
16:55 – 17:15	<p>Stephan Burger (IAAC / FMF / Krossing-Group)</p> <p>Towards safe and rechargeable high energy Lithium-Metal-Batteries</p>
17:15 – 17.35	<p>Jan Büttner (IAAC / FIT / livMatS / Fischer-Group)</p> <p>2D halide-perovskites – Are they suitable materials for batteries and photobatteries?</p>
18:00 – 21:00	<p>Walking Dinner and Poster Session</p> <p>Program of the poster session can be found at the end of the document.</p>

17.02.2023	Day 2
09:00 – 09:45	Sigita Trabesinger (Paul Scherrer Institute) Importance of Advanced Interface Analytics for Rechargeable Batteries
09:45 – 10:05	Patrick Elsässer (IAAC / FIT / Fischer-Group) Fe-/Zn-doped and N-doped Carbon ORR Catalysts with Molecular Fe-N _x Sites for High Performance Anion-Exchange Membrane Fuel Cells
10:05 – 10:25	Hien Nguyen (IMTEK / FIT / Vierrath-Group) Research and development challenges in proton-exchange membrane fuel cells based on novel hydrocarbon ionomers
10:25 – 10:45	Coffee Break
10:45 – 11:05	Hendrik Koger (IAAC / Krossing-Group) Small Steps in Understanding and Controlling the Surface of Magnesium for the Application in Rechargeable Magnesium Batteries
11:05 – 11:50	Camelia Ghimbeu (Institut de Science des Matériaux de Mulhouse, FR) Hard carbon materials: key factors to enhance the Na-ion storage
11:50 – 12:00	Wrap Up
Lunch Break 12:00 – 14:00	Lunch Lounge FRIAS or to GO
Departure	See you next time and have a safe trip home 😊

Invited Talks: 45 min (35 min + 10 min discussion)

PhD Talks: 20 min (15 min + 5 min discussion)

Poster Session Program

FRIAS Lounge

P1	<p>Louiza Larbi (Institut de sciences des matériaux de Mulhouse (CMH))</p> <p>Carbon coating on $KVPO_4F_{0.5}O_{0.5}$ to improve the interface and electrochemical performance in K-ion batteries</p>
P2	<p>Sirine Zallouz (Institut de Sciences des Matériaux de Mulhouse (CMH))</p> <p>Development of a green hydrogel electrolyte for safer and more performing capacitors</p>
P3	<p>Dominik Stepien (Helmholtz Institute Ulm)</p> <p>Electrodeposition of Lithium Metal on Nickel from Ionic Liquid-based Electrolytes</p>
P4	<p>Eike Jacob (Institute for Inorganic and Analytical Chemistry / Krossing-Group)</p> <p>Calcium Metal Negatodes – Tackling Passivation</p>
P5	<p>Niklas Maier (Institute for Inorganic and Analytical Chemistry / FMF / FIT / livMatS / Fischer-Group)</p> <p>Atomic layer deposition - A powerful technique</p>
P6	<p>Matej Zlatař (Forschungszentrum Jülich Electrochemical Energy Conversion)</p> <p>Assessing the Stability of Ir OER Electrocatalysts using Accelerated Stress Tests</p>
P7	<p>S. Esmael Balaghi (Freiburg Center for Interactive Materials and Bioinspired Technologies (FIT) / Fischer-Group)</p> <p>Understanding Materials Dynamics under Operational Electrochemical Conditions Using In-situ Electrochemical Liquid (S)TEM and In-situ Electrochemical SEM</p>
P8	<p>Taisiia Berestok (Institut für Anorganische und Analytische Chemie / FIT / livMatS / Fischer-Group)</p> <p>Monolithically integrated photosupercapacitors based on different photovoltaic technologies</p>

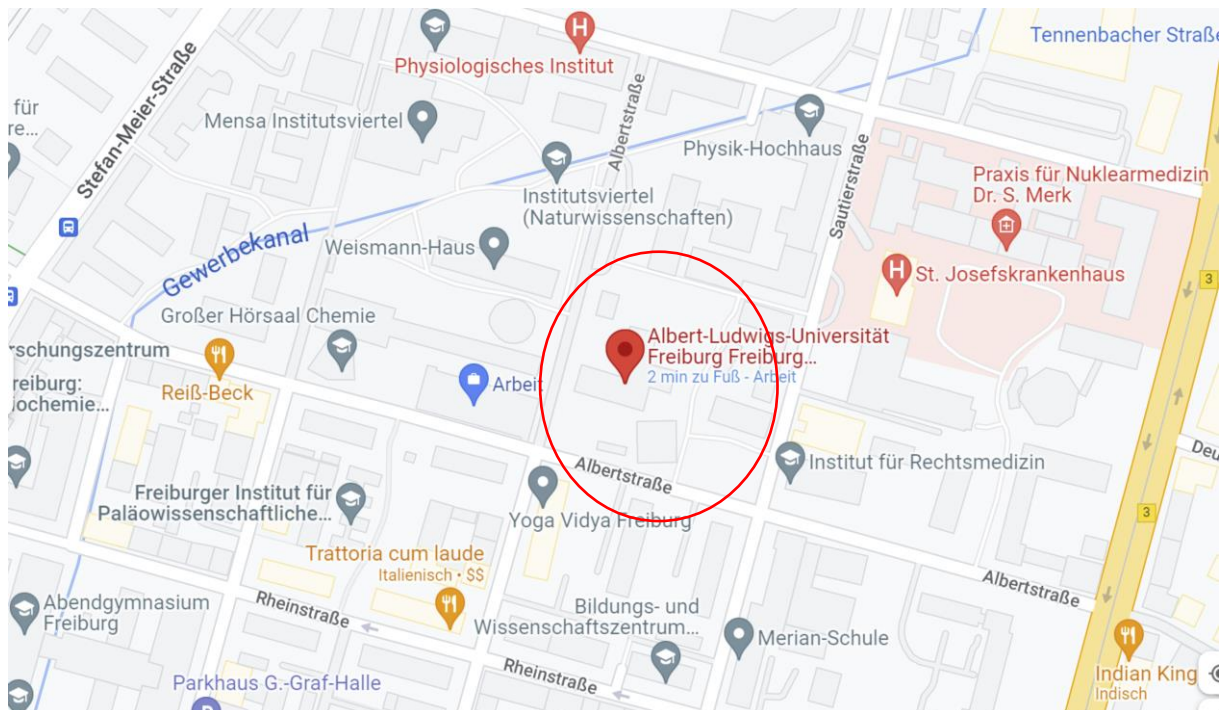
<p>P10</p>	<p>Julian Martin (IAAC / FMF / Fischer-Group)</p> <p>Electrochemical activity and stability of Platinum nanoparticles supported on N-doped hydrothermal carbon aerogels for ORR</p>
<p>P11</p>	<p>Khaled Seteiz (IMTEK / EES Vierrath-Group)</p> <p>Carbon supported Ag nanoparticles in zero gap CO₂ electrolysis to CO enabling high mass activity</p>
<p>P12</p>	<p>Minkyong Kwak (University of Oregon / Boettcher-Group)</p> <p>Interfacial Engineering of Anodes in Anion-Exchange Membrane Water Electrolyzers</p>
<p>P13</p>	<p>Mohamed Elshamy (IMTEK / EES Vierrath-Group)</p> <p>Bar-coated PGM-free oxygen evolution reaction catalyst a scalable approach with exceptional anion exchange membrane water electrolysis performance</p>
<p>P14</p>	<p>Samuel Gatti (Paul Scherrer Institute, Battery Electrodes and Cells)</p> <p>Novel Ni- and Co-free high voltage cathode materials for sodium ion batteries</p>

How to get there:

Freiburg Institute für Advanced Studies - FRIAS

Albert-Ludwigs-Universität Freiburg

Albertstraße 19, 79104 Freiburg im Breisgau



<https://goo.gl/maps/CFLlibw8WggcmanK6>