

**Tuesday, 11<sup>th</sup> July 2023**

10:30 – 13:30	<b>Arrival and Registration</b>	
<b>Tutorials: Introduction to Experimental Techniques at HIU</b>		
11:00 – 11:30	Introduction to EXAFS	Yang Hu
11:30 – 12:00	NMR in Battery Research – an introduction	Raiker Witter
12:00 – 12:30	Fundamentals of TEM characterization and development of cryogenic workflows for imaging of battery materials at HIU	Yueliang Li & Simon Fleischmann
12:30 – 13:30	<b>Beverages and Snacks</b>	
13:30 – 14:00	<b>Opening</b>	Maximilian Fichtner
<b>Characterisation and Modelling</b>		
14:00 – 14:10	Overview	Timo Jacob
14:10 – 14:30	Advanced Electron Microscopy in Material Research	Ziming Ding
14:30 – 14:50	Advancements in Battery Research: Molecular Dynamics Simulations and Customized Force Fields	Christoph Jung
14:50 – 15:10	Recent Progress of Magnetic Resonance on Battery Materials	Raiker Witter
15:10 – 15:30	Resolved Microstructure Simulations for Batteries Using the Lattice Boltzmann Method	Julius Weinmiller
15:30 – 16:00	<b>Coffee Break</b>	
<b>Lithium-based Batteries</b>		
16:00 – 16:10	Overview	Dominic Bresser
16:10 – 16:30	Arrhenius plots for prediction and analysis of battery aging	Thomas Waldmann
16:30 – 16:50	Stepwise Stabilization of High-Voltage Electrode/Electrolyte Interfaces	Markus Binder
16:50 – 17:10	Optimizing interlayer chemistry of layered titanates for improved lithium intercalation kinetics and efficiency	Mennatalla Elmanzalawy
17:10 – 17:30	Improving lithium intercalation kinetics by optimizing the interlayer distance in bi-layered V <sub>2</sub> O <sub>5</sub>	Jameela Karol
17:30 – 18:00	<b>Break and Group Photo</b>	
18:00 – 19:30	<b>Poster Session with Beverages</b>	
19:30 – 22:00	<b>Buffet</b>	

Wednesday, 12<sup>th</sup> July 2023

08:30 – 09:00	<b>Arrival and Registration</b>	
<b>Beyond Lithium</b>		
09:00 – 09:10	Overview	Maider Zarrabeitia
09:10 – 09:30	Al/air primary batteries for large-scale energy storage	Xu Liu
09:30 – 09:50	Sustainable and Cost-Effective Bio-Waste-Derived Hard Carbon Synthesis for Sodium-Ion Batteries	Hyein Moon
09:50 – 10:10	Enhancing reversibility of Zn anodes for aqueous Zn-ion batteries by tuning electrolyte and interphases	Fuhua Yang
10:10 – 10:30	Recent progress on organic magnesium and calcium batteries	Zhirong Zhao-Karger
10:30 – 11:00	<b>Coffee Break</b>	
<b>Mechanisms, Interfaces and Interphases</b>		
11:00 – 11:10	Overview	Birger Horstmann
11:10 – 11:30	Fiber Optic Evanescent Wave Sensors for Lithium-Metal Batteries	Dominik Stepien
11:30 – 11:50	Multimodal Characterization of Electrode Materials for Vanadium Redox Flow Batteries	Monja Schilling
11:50 – 12:10	Description of the Silicon Voltage Hysteresis with a Visco-Elastoplastic SEI Model	Lukas Köbbing
12:10 – 12:30	Deconvolution of Impedance Data for Electrochemical Cells using Distribution of Relaxation Times	Michael Braig
12:30 – 14:00	<b>Lunch</b>	
<b>Solid-state Batteries</b>		
14:00 – 14:10	Overview	Timo Danner
14:10 – 14:30	Anti-Perovskites as solid-state electrolytes for post lithium ion batteries	Hagar K. Hassan
14:30 – 14:50	Single-Ion Conducting Polymer Electrolytes for Sodium Batteries	Xu Dong
14:50 – 15:10	Soft-interlayers in Garnet-based quasi-solid-state batteries: opportunities and challenges	Luigi Faggiano
15:10 – 15:30	Understanding the effect of fluorine substitution on halide solid electrolytes	Yang Hu
15:30 – 16:00	<b>Coffee Break</b>	
<b>Sustainable Materials and Processes</b>		
16:00 – 16:10	Overview	Marcel Weil
16:10 – 16:30	Improving the performance of redox-active organic molecules by tailoring the electrolyte composition	Po-Hua Su
16:30 – 16:50	Relevance and challenges from prospective LCA for emerging battery systems	Sebastian Pinto Bautista
16:50 – 17:10	Cross-linked Natural Polymers as Sustainable Binders for Water-Based EDLC Electrodes	Mahdi Karimi Jafari
17:10 – 17:30	Tailoring structure and morphology of transition metal dichalcogenides for pseudocapacitive ion intercalation hosts	Jaehoon Choi
17:30 – 17:45	<b>Concluding remarks</b>	
		Maximilian Fichtner