14th HIU-Biennial Meeting 29. – 30.07.2025
Venue: Uni Ulm, Building N27, Multimedia-Room 2059
Meyerhof-Str.

HIU HELMHOLTZ INSTITUTE ULM
Electrochemical Energy Storage

Tuesday, 29th July 2025

09:30 – 13:30	**Arrival and registration**	
Tutorials "Introduction to Experimental Techniques" at HIU		
11:00 – 11:30	Introduction to XAS /XES	Yang Hu
11:30 – 12:00	Introduction to SAXS	Guillaume Navallon
12:00 – 12:30	Fundamentals of TEM characterization	Simon Fleischmann
12:30 – 13:30	**Beverages and snacks**	
13:30 – 14:00	**Opening of the Biennial Meeting**	Andrea Robitzki Maximilian Fichtner
1 Characterisation and Modelling		
14:00 – 14:10	Overview	Axel Groß
14:10 – 14:30	Multiscale Advanced Electron Microscopy Characterization of Battery Materials	Ali Ahmadian
14:30 – 14:50	Theoretical modelling of ion mobility in battery materials	Mohsen Sotoudeh
14:50 – 15:10	Advanced characterization using Tip -Enhanced Raman Spectroscopy (TERS): elucidate nano-scale chemical heterogeneity in thin layers	Sirshendu Dinda
15:10 – 15:30	Unraveling Organic Electrode Materials with Quantum Computers	Juliane Heitkämper
15:30 – 16:00	**Coffee break**	

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2 Lithium-Based Batteries		
16:00 – 16:10	Overview	Thomas Waldmann
16:10 – 16:30	Characterization, modeling and optimization of passive material distribution for lithium-ion battery electrodes with high areal capacity	Simon Hein
16:30 – 16:50	Understanding Li+ intercalation kinetics in transition metal dichalcogenide electrodes via distribution of relaxation time (DRT)	Yoga Trianzar Malik
16:50 – 17:10	Enabling novel Lithium-Sulfur Batteries for Aerospace Applications by means of Scale-Resolved Continuum Simulations	Max Okraschevski
17:10 – 17:30	Insights into aging mechanisms of commercial Li-ion batteries with Si/graphite anodes	Jihed Ayari
17:30 – 18:00	**Break and group photo**	
18:00 – 19:30	**Poster Session with beverages**	
19:30 – 22:00	**Buffet**	

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Wednesday, 30th July 2025

08:30 – 09:00	**Arrival and registration**	
3 Beyond Lithium		
09:00 – 09:10	Overview	Zhirong Zhao-Karger
09:10 – 09:30	Tailored α-MnO_2 Electrodes Integrated in High Power Aluminium-Air Batteries	Alexander Rampf
09:30 – 09:50	Aluminium batteries based on organic electrode materials	Eva Bräutigam
09:50 – 10:10	Bio-waste-derived hard carbon anode: Optimizing the synthetic route and understanding sodium storage mechanisms	Shuting Zhang
10:10 – 10:30	Mg Dendrite Formation and Suppression in Ionic Liquid-based Mg-metal Batteries	Hagar K. Hassan
10:30 – 11:00	**Coffee break**	
4 Mechanisms, Interfaces and Interphases		
11:00 – 11:10	Overview	Birger Horstmann
11:10 – 11:30	Exploring Magnesium Electrolytes and Organo-Sulfur Battery Chemistry	Sibylle Riedel
11:30 – 11:50	Evolution of Lithium Metal Electrodes Analysed via Clustering Data-Mining Methods	Ziyuan Lyu
11:50 – 12:10	From Stress to Voltage – Modeling the Hysteresis and Slow Relaxation of Silicon Anodes	Lukas Köbbing
12:10 – 12:30	Tuning the interlayer environment of MoS_2 intercalation hosts via covalent and non-covalent pillaring	Jaehoon Choi
12:30 – 14:00	**Lunch**	

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Wednesday, 30th July 2025, afternoon

5 Solid-State Batteries		
14:00 – 14:10	Overview	Timo Danner
14:10 – 14:30	Pressure-dependent Mechano-Electrochemical Failure Mechanisms of Anode-free Solid-State Batteries	Jianneng Liang
14:30 – 14:50	Poly-siloxane-Based Single-Ion Conducting Polymer Electrolyte for Sodium Metal Batteries	Yixuan Guo
14:50 – 15:10	Development of Fluorine-Free Single-Ion Conducting Polymer Electrolytes for Lithium Metal Batterie	Leo Gräber
15:10 – 15:30	Investigation of Structural Evolution of Cu-Doped O_3 Cathodes for Sodium-Ion Batteries	Rishikesh Vengarathody
15:30 – 16:00	**Coffee break**	
6 Sustainable Materials and Processes		
16:00 – 16:10	Overview	Alberto Varzi
16:10 – 16:30	Advanced Recycling Strategies for Nickel Manganese Cobalt (NMC) Battery Materials	Arseniy Bokov
16:30 – 16:50	Recycling of LFP and low value batteries – economic, environmental and technological challenges	Pushpendra
16:50 – 17:10	Enhancing the Aqueous Processability of Layered Oxide Sodium Cathodes via Dual Approach of Binder Cross-Linking and Phosphate-Based Coating	Graziano Di Donato
17:10 – 17:30	Commercial sodium-ion batteries: Insights into the cell design and electrode chemistry	Vittorio Marangon
17:30 – 17:45	**Concluding remarks**	Maximilian Fichtner
17:45	**End of the Biennial Meeting and Departure**	