

# The IOP-HU Early Career Researcher Conference on Energising Materials 2024

3<sup>rd</sup> IOP–HU ECR Workshop

November 28<sup>th</sup>-29<sup>th</sup>, 2024

CSMB Berlin Adlershof

Thursday, November 28th		
Time	Session	Speaker
09:00 - 09:10	Welcome from CSMB	<b>Stefan Hecht</b> CSMB
<b>Next generation large scale infrastructure for energy I</b> <b>Chair: Xingli Wang</b>		
09:10 - 09:45	A Catalyst Life and its Circumstances	<b>Beatriz Roldán Cuenya</b> <i>FHI, Berlin</i>
<b>Microscopy for energy</b> <b>Chair: Zezhong Zhang</b>		
09:45 - 10:15	Phase Evolution and Interfacial Coupling in Energy-related Materials	<b>Dong Su</b> <i>IOP, Beijing</i>
10:15 - 10:45	In Situ TEM on Semiconductor Materials at IKZ	<b>Dan Zhou</b> <i>IKZ, Berlin</i>
<b>Coffee Break 10:45 - 11:15</b>		
<b>Photovoltaic materials</b> <b>Chair: Lu Qiao</b>		
11:15 - 11:40	Inkjet-Printed Metal Halide Perovskite Optoelectronic Devices	<b>Emil List-Kratochvil</b> <i>HU Berlin</i>
<b>Big Data for energy</b> <b>Chair: Lucas Foppa</b>		
11:40 - 12:05	Solar cells research data management with NOMAD	<b>José A. Márquez Prieto</b> <i>HU Berlin</i>
12:05 - 12:30	Smart Data-Driven Approaches for Crystal Growth Process Modeling and Optimization	<b>Milena Petkovic</b> <i>IKZ, Berlin</i>
<b>Lunch 12:30 - 13:30</b>		

<b>Next generation large scale infrastructure for energy II</b> <b>Chair: Yanan Sun</b>		
13:30 - 13:50	Welcome from Helmholtz-Zentrum Berlin & BESSY II Light Source	<b>Bernd Rech</b> <i>HZB, Berlin</i>
13:50 - 14:15	Overview of Hefei Advanced Light Facility (HALF) and the Application for Energy Research	<b>Xiaosong Liu</b> <i>NSRL and USTC Hefei</i>
<b>Energy storage materials</b> <b>Chair: Wolfgang Brehm</b>		
14:15 - 14:40	Better than Li-ion batteries? Materials development for Na-ion and solid-state batteries	<b>Philipp Adelhelm</b> <i>HU Berlin</i>
14:40 - 15:05	Materials Exploration for High-Performance Na-ion Batteries	<b>Yaxiang Lu</b> <i>IOP, Beijing</i>
<b>Coffee Break 15:05 - 15:25</b>		
<b>Energising innovation</b> <b>Chair: Jun Peng</b>		
15:25 - 15:50	The roll out of Perovskite PV	<b>Eva Unger</b> <i>HU Berlin and HZB</i>
15:50 - 16:15	Technology Transfer in Energy Materials Research – from Lab to Market	<b>Michael Bojdys</b> <i>HU Berlin and EurA AG</i>
<b>Interfaces of energy materials</b> <b>Chair: Jing Xu</b>		
16:15 - 16:40	Operando energy level re-alignment between charge selective organic transport layers and metal halide perovskites	<b>Norbert Koch</b> <i>HU Berlin</i>
16:40 - 17:05	Two-dimensional Limit of Architectural Oxide Materials	<b>Jiandi Zhang</b> <i>IOP, Beijing</i>
17:05 - 18:05	<b>Discovering the Leibniz-Institut für Kristallzüchtung IKZ</b>	<b>Jens Martin</b> <i>IKZ, Berlin</i>

Friday, November 29th		
Time	Session	Speaker
09:00 - 9:15	Welcome	
<b>Coffee Break &amp; Poster Discussions 09:15 - 10:00</b>		
<b>10:00 - 11:00 Photovoltaics</b>		
10:00 - 10:15	Atomically precise metal nanoclusters for solar energy harvesting and conversion	<b>Yu Wang</b> <i>HU Berlin</i>
10:15 - 10:30	A Novel Approach to Sustainable Passivation: Utilizing Reversible Reactions to Passivate Defects Formed During Operation	<b>Yiran Shi</b> <i>HZB Berlin</i>
10:30 - 10:45	Mitigating mobile ion-induced instability and performance losses in 2D passivated perovskite solar cells	<b>Biruk Alebachew Seid</b> <i>U Potsdam</i>
10:45 - 11:00	Core-exciton Coulomb Screening in the Wide Band-gap Semiconductor	<b>Lu Qiao</b> <i>HU Berlin</i>
<b>Coffee Break 11:00 - 11:15</b>		
<b>11:15 - 12:00 Microscopy</b>		
11:15 - 11:30	Direct Imaging of Electrified Solid-liquid Interfaces in Reaction with Liquid Cell Electron Microscopy	<b>Xingli Wang</b> <i>TU Berlin</i>
11:30 - 11:45	Atomic Lensing Model for Atomic Scale Multi-Elemental Quantification in STEM	<b>Zezhong Zhang</b> <i>U Antwerp</i>
11:45 - 12:00	Measuring transport properties in the electron microscope	<b>Hannah Nerl</b> <i>HU Berlin</i>
<b>Lunch 12:00 - 13:15</b>		
<b>13:15 - 14:15 Batteries</b>		
13:15 - 13:30	Conversion electrodes for rechargeable Li-Sulfur, Na-Ion and Zn-Air batteries	<b>Wolfgang Brehm</b> <i>TU Berlin</i>
13:30 - 13:45	Theoretical design of solid-state electrolyte based on coordination chemistry	<b>Jing Xu</b> <i>IOP, Beijing</i>

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13:45 - 14:00	Atomic layer processing and its applications	<b>Jun Peng</b> <i>U Hamburg</i>
14:00 - 14:15	<i>Operando</i> Analytical Techniques and their Applications to Solvent Co-intercalation	<b>Yanan Sun</b> <i>HZB, Berlin</i>
<b>14:15 – 15:00 Catalysis</b>		
14:15 - 14:30	Tracking the evolution of single atom catalysts through operando X-ray absorption and emission spectroscopies	<b>Andrea Martini</b> <i>FHI, Berlin</i>
14:30 - 14:45	Describing Complex Materials Properties and Functions via the "Materials Genes" Concept	<b>Lucas Foppa</b> <i>FHI, Berlin</i>
14:45 - 15:00	Unveiling surface phenomena in catalysis with spectro-microscopy	<b>Mauricio J. Prieto</b> <i>FHI, Berlin</i>
<b>Coffee Break &amp; Poster Discussions 15:00 - 15:45</b>		
16:00	<b>Discovering the BESSY II Light Source</b>	<b>Antje Vollmer</b> <i>HZB, Berlin</i>