Berlin University Alliance

22.-23. July 2025

Max-Delbrück-Communication Center MDC.C (Geb. 83)
Robert-Rössle-Straße 10, 13125 Berlin
Hörsaal "Axon I"

ACEM – Symposium:

Bridging Electron Microscopy in Life Sciences and Material Sciences – Common Challenges and Opportunities

Tuesday, July 22, 2025

09:00 Registration

Preliminary Program

09:45 **Welcome and Introduction**
Matthias Ochs, Charité & Speaker of the ACEM

Session: Volume SEM

Chairs: M. Ochs (CHA), S. Kunz (MDC Buch)

10:00 ***Mechanosensitive nuclear pores***
Martin Beck, MPI Frankfurt

10:45 ***Volume electron microscopy of the neuromuscular junction***
Carsten Dittmayer, Charité

11:05 ***Comprehensive solutions for volume EM data challenges***
Norman Rzepka, Scalable Minds GmbH, Potsdam

11:50 ***Volume electron microscopy to reveal mitochondrial adaptations supporting hypoxia tolerance***
Gary Lewin, MDC Buch

12:10 ***Titel***
N.N. JEOL

12:30 *Lunch Break (120 min)*

Session: Artificial Intelligence in Electron Microscopy

Chairs: C. Koch (HU), K. Ludwig (FU)

14:30	***Computational Imaging of Biological and Soft Materials using 4DSTEM*** Colin Ophus, Stanford University, USA
15:15	***AI-assisted processing of 2D and 3D EM image data*** Yannic Kerkhoff, FU Berlin und Zuse-Institut Berlin
15:35	***What we can learn about Corona when we combine EM information*** Andrea Thorn, Universität Hamburg
16:20	*Coffee Break (20 min)*
16:40	***Deep Learning-based Advances in Cryo-Electron Tomography*** Noushin Hajarolasvadi, Zuse-Institut Berlin
17:00	***Learn how to train your own Deep Neural Network, in 15 min.*** Matthias Gänge, ZEISS
Ab 17:20	*Get-Together bei Barbecue*

Closing: 20:30 pm

Wednesday, July 23, 2025

Session: Quantitative Phase-sensitive S/TEM-Methods

Chairs: M. Lehmann (TU), C. Diebolder (CHA)

09:15	***Momentum-resolved STEM in Physical and Life Sciences: Versatile phase retrieval or 4-dimensional noise?*** Knut Müller-Caspary, LMU München
10:00	***Titel*** N.N.
10:20	***Optical Near-Field Electron Microscopy: a novel non-invasive widefield technique for prolonged super-resolution dynamic imaging*** Ilia Zykov, Universität Wien
11:05	*Coffee Break (20 min)*
11:25	***3D Strain Field Reconstruction by Inversion of Dynamical Diffraction*** Laura Niermann, TU Berlin
11:45	***Pixelated sensor technology designed for ultrafast EBSD*** Daniel Goran, Bruker
12:05	*Lunch Break & Poster Session (115 min)*

Session: In Operando and Time Resolved EM

Chairs: D. Berger (TU), M. Wahl (FU)

14:00	***Dynamics of active catalysts: insights from multi-scale operando electron microscopy*** Marc-Georg Willinger, TU München
14:45	***Investigating the Influence of FIB-Preparation Induced Surface Effects in Operando Semiconductor TEM-Lamellae*** Hüseyin Çelik, TU Berlin
15:05	***Time resolved cryoEM reveals the mechanisms of ubiquitin chain synthesis and recognition*** David Haselbach, IMP Wien
15:50	*Coffee Break (20 min)*

16:10	***Approaches for time-resolved cryo-EM in vitro and in the cellular context*** Magdalena Schacherl, Charité
16:30	*Introducing Krios 5 - Cutting edge solutions across SPA and Cryo-ET* Javier Fernandez Collado, ThermoFisher Scientific
16:50	**Closing Remarks** Matthias Ochs, Charité & Speaker of the ACEM

Closing 17 pm