

EUFN FIB Workshop 2023 in Zürich Switzerland

WEDNESDAY 7.6.

Invited speakers (8) ----- 20' + 5' = 25'

Contributed talks (12) ----- 15' + 5' = 20'

Exhibitor/Sponsor talk (11) --- 15' + 5' = 20'

10' Buffer for each session

Location: Auditorium HG F 7 & Foyer EO Süd
Short tutorials HG F7, E 1.2 and E 33.3

9:00 Get Together & Registration
(Coffe and tea)

Tutorial
Tut 10:00 **Carsten Putzke** (MPI Hamburg)
Tutorial: Automation in Focused Ion Beam and Scanning Electron Microscopy

12:00 **LUNCH**

Session n°1
Chair: J. Reuteler

Talk 1 13:00 **Robert Winkler** (TU Graz)
Treat your Beam Induced Deposits well: Post-Processing Possibilities to Modify Material Properties

Exi 1 13:20 **Torsten Richter** (Raith)
VELION - Advance a mature FIB-SEM nanofabrication system to a powerful ion microscope by automation

Talk 2 13:40 **Ewelina Gacka** (Wroclaw University of Science and Technology)
Field Emitters Integrated with Operational Microelectromechanical Systems - Fabrication and Measurements using Scanning Electron Microscope/Focused Ion Beam

Exi 2 14:00 **Mikuláš Kocman** (Tescan)
Automation of FIB-SEM process and open-access control of nanopatterning

Talk 3 14:20 **Jakob Schwiedrzik** (Empa Thun)
Developing Novel FIB-machined Sample Geometries for Studying Interface Fracture in SiC-C-SiC Composites

14:50 **COFFEE BREAK**

Session n°2
Chair: R. Winkler

Inv 15:35 **Patrick Cleeve** (Monash University)
OpenFIBSEM: A universal API for FIBSEM control, development and automation

Exi 3 16:00 **Bart Winiarski** (Thermo Fisher Scientific)
Automated PFIB-SEM "Kintsugi Imaging" for cross-sectioning and spin-milling of battery electrodes

Talk 4 16:20 **Thomas David** (CEA Liten)
3D FIB-SEM image processing and segmentation applied to materials for energy

Exi 4 16:40 **Andrew Smith** (Kleindiek Nanotechnik)
Initial steps towards automated sequential electrical characterization in FIB/SEM

Talk 5 17:00 **Katja Höflich** (Ferdinand-Braun-Institut Berlin)
Roadmap for focused ion beam technologies

17:30 **Group photo**
(Stairs at entrance Polyterrasse)

17:45 **POSTER SESSION**
Soft drinks, beer, white wine

THURSDAY 8.6

8:30 Get Together

Session n°3
Chair: A. B. Mosberg

Inv 8:40 **Antje Biesemaier** (LIST)
High-resolution chemical imaging in the cold: A cryo-FIB platform for correlative topographical and in-depth analysis of frozen-hydrated biological specimens

Exi 5 9:05 **Olena Vertsanova** (Carl Zeiss Microscopy)
The laser-integrated FIB-SEM for imaging of deeply buried features at nanoscale resolutions

Talk 6 9:25 **Sven Klumpe** (Max-Planck-Institute of Biochemistry)
Open-Source Software SerialFIB for Automated FIB Workflows: From Machine Learning in Lamella Preparation to Serial Cryo-Lift-Out of Tissues

Exi 6 9:45 **Tsuyoshi Onishi** (Hitachi High-Tech Corporation)
Automation of TEM sample preparation and standardization of Lamella Carrier (LC)

10:15 **COFFEE BREAK**

Session n°4
Mini-WS / short Tutorials

Mini 1 11:00 **3x 3 mini workshops / short tutorials in parallel:**
a) HG E 33.3
Peng Zeng (ETH Zürich)
FIB automation: TEM lamellae for High Resolution TEM/STEM

Mini 2 11:45 b) HG F 7
Zineb Saghi & Thomas David (CEA Leti & Liten)
Tomographic data processing using machine learning and deep learning methods

Mini 3 12:30 c) HG E 1.2
Mahdi Ghorbani-Asl (HZDR Dresden)
Simulation of irradiation effects in solids

13:00 **LUNCH + DISCUSSIONS**

Session n°5
Chair: G. Audoit

Inv 14:05 **Gregor L. Weiss** (ETH Zürich)
Combining cryo-FIB milling with cryo-electron tomography enables macromolecular insights into biological samples

Exi 7 14:30 **Dan Haspel** (Oxford Instruments)
Getting The Best Spatial Resolution By Using Low kV EDS in FIB Workflows

Talk 7 14:50 **Aleksander B. Mosberg** (SuperSTEM)
Isotropic high-kV electron beam induced deposition for optimal protection of nanostructures during specimen preparation

Exi 8 15:10 **Valentine Riedo-Grimaudo** (Tofwerk)
fibTOF: A FIB-SIMS Instrument enabling the Imaging of Light-Mass Isotopes with Nanometer Resolution

Talk 8 15:30 **Liliana Duarte** (Paul Scherrer Institut)
FIB preparation of highly radioactive nuclear fuel rod samples for synchrotron investigation

16:00 **POSTER SESSION**
Soft drinks, beer, white wine

17:00 **City Tour**
(Start: Stairs at entrance Polyterrasse; End: Restaurant Johanniter)

19:00 **Conference Dinner at Restaurant Brasserie Johanniter**
(Niederdorfstr. 70, 8001 Zürich, <https://johanniter.com/>)

FRIDAY 9.6

8:30 Get Together

Session n°6
Chair: G. Hlawacek

Inv 8:40 **Hilary Noad** (MPI Dresden)
Tuning and probing the electron system in a quantum material with the help of FIB processing

Talk 9 9:05 **Chunyu Guo** (MPI Hamburg)
Probing electronic symmetry breaking via precise focused-ion-beam fabrication

Exi 9 9:25 **Georg Raggl** (Jeol)
JEOL's new high-end focused ion beam system JIB-P5500i for safe and smooth preparation of lamella for high-end TEM imaging

Talk 10 9:45 **Alba Arroyo-Fructuoso** (Universitat de València)
Study of superconducting properties in nanoarrays grown by He+ FIBID.

10:15 **COFFEE BREAK**

Session n°7
Chair: Ph. Moll

Talk 11 11:00 **Umutcan Bektas** (Helmholtz-Zentrum Dresden Rossendorf)
Polymorph Conversion in Gallium Oxide via Focused Ion Beam Irradiation

Exi 10 11:20 **Anya Grushina** (Imina Technologies)
Deposition and in-situ measurement of a 1 kOhm pull-up resistor at FIB-angle tilt position

Talk 12 11:40 **Maciej Pańniewski** (ExxonMobil Chemical Europe & University of Antwerp)
Influence of Instrumental Parameters of FIB-SEM on Polyolefins

Exi 11 12:00 **Hajo Frerichs** (Quantum Design)
Correlative SEM/AFM Microscopy - Combining Two High-Performance Methods for Nanoscale Measurements

12:30 **CLOSING**

Only for optional tour of ScopeM labs (Campus Höggerberg):
>> 12:50 Departure shuttle from Unterführung Polyterrasse
Lunch ca. 1 h at ETH Höggerberg
ScopeM tour ca. 1 h

16:00 **End**