



Detailed Program

# 8<sup>th</sup> ASEM - Workshop

### **Advanced Electron Microscopy**

## April 26<sup>th</sup> and April 27<sup>th</sup> 2018

### IMP Lecture Hall, Campus-Vienna-Biocenter 1, 1030 Vienna

**Detailed Program:** 

### Thursday, April 26<sup>th</sup>, 2018:

- 12:00 13:00 Registration and Refreshments
- 13:00 13:15 Opening and Welcome
- 13:15 13:45 invited Talk: Toma Susi (University of Vienna)

### Manipulating individual atoms with an electron beam

#### 13:45 – 15:00 Short Talk Session 1:

- 13:45 14:00: Ulrich Haselmann (Erich Schmid Institute of Materials Science): The Effect of Strontium Rubidium Oxide Interlayers on Calcium and Manganese doped Bismuth Iron Oxide Thin Films
- 14:00 14:15: Jürgen Simon (Hitachi): Correlative Electron Microscopy with AFM
- 14:15 14:30: Catarina Alcarva (IST-Austria): Plasticity in the cerebellum: Which molecular mechanisms are behind physiological learning?
- 14:30 14:45: Lawrence Whitmore (University of Salzburg): Twins in Magnesium
- 14:45 15:00: Wolfgang Schwinger (Zeiss): FocalCC a new method for charge
  - compensation during Serial Blockface Scanning
- 15:00 15:30 Coffee Break
- 15:30 16:15 Fritz Grasenick Award Ceromony and Lectures by laureates:

 Giacomo Argentero (University of Vienna): Unraveling the 3D Atomic Structure of a Suspended Graphene/hBN van der Waals Heterostructure
Robert Winkler (Austrian Center for Electron Microscopy and Nanoanalysis): 3D-Nanoprinting of Functional and Freestanding Structures via Electron Beams: an

**Application Perspective** 

Daniel Serwas (Max F. Perutz Laboratories) absent/excused





### (Thursday, April 26<sup>th</sup>, 2018 continued):

16:15 – 17:45 Short Talk Session 2:

- 16:15 16:30: Cornelia Trummer (FELMI): Morphological Analysis of FEBID Deposits by Electron Tomography
- 16:30 16:45: Jürgen Sattelkow (FELMI): Direct-Write 3D Nano-Printing of Thermal High-Resolution Nano-Probes
- 16:45 17:00: Ben Lich (Thermo Fisher Scientific): Cryo EM workflows for Single Particle Analysis and Tomography of hydrated, intact cells
- 17:00 17:15: Michal Horak (CEITEC): Comparative study of plasmonic antennas: EBL vs. FIB fabrication
- 17:15 17:30: SigridHolleis (TU Wien): Microstructural Analysis of Thallium-based Thin Film Superconductors
- 17:30 17:45: Rudolf Krentik (EDAX): How to apply Microanalysis to the Lifesciences

#### 17:45 – 18:30 Extraordinary ASEM Assembly Meeting

19:00 <u>Conference Dinner</u> (on site: IMP cafeteria, Campus-Vienna Biocenter 1, 1030 Vienna)

### Friday, April 27<sup>th</sup>, 2018

- 09:00 09:15 Welcome Coffee
- 09:15 09:45 Invited Talk: Thomas Juffmann (Max F. Perutz Laboratories):

#### Multi-pass TEM – A new concept for high sensitivity electron microscopy

- 09:45 10:30 Short Talk Session 3:
- 09:45 10:00: Stephan Pfeiffer (TU Wien): Combined Microstructural and Magnetic Investigation of Nb3Sn Superconductors for FCC
- 10:15 10:15: Julia König (Leica): High pressure freezing a snapshot in time with millisecond precision
- 10:15 10:30: Sonja Raumauf (School Theodor Kramer Strasse): Early career development EM in the school classroom
- 10:30 11:00 Coffee Break (optional: Facility Tour)
- 11:00 11:45 Short Talk Session 4:
- 11:00 11:15: Anna-Sophie Wittgenstein (TU Graz): Ultrastructural investigation of biaxially loaded human aortas
- 11:15 11:30: Georg Raggl (JEOL): New fully automated cryo TEM solutin from Jeol
- 11:30 11:45: Semir Tulic (University of Vienna): Graphitization of diamond studied by transmission electron microscopy
- 11:45 13:00 Poster Session
- 13:00 14:00 Lunch (on site: IMP Cafeteria)
- 14:00 14:30 Invited Talk: David Haselbach (IMP): "Studying molecular machines by cryo-EM"
- 14:30 15:15 Short Talk Session 5:
- 14:30 14:45: Judith Lammer (FELMI): Oxide Ceramic-Electrode Systems: STEM EDX Analyses and Heating Experiments
- 14:45 15:00: Andreas Kastenmüller (Gatan): Recent technical developments from Gatan for Electron Microscopy
- 15:00 15:15: Desiree Forstner (Medical University of Graz): Influence of platelet-derived factors on villous trophoblast differentiation
- 15:15 15:45 Coffee Break





### (Friday, April 27<sup>th</sup>, 2018 continued)

15:45 – 16:30 Short Talk Session 6:

- 15:45 16:00: Maximilian Schinagl (Medical University of Graz): Localization of Ferritin in Human Brain Tissue
- 16:15 16:30: Richard Martin Huber (TU Graz): Multi-Channel STEM Tomography using Total Generalised Variation
- 16:30 16:45: Gregor Zickler (University of Salzburg): TEM/STEM investigation of Ba-doped MgO nanoparticles
- 16:30 17:00 Closing Remarks and Farewell Drink

### Poster Presentations:

- Daniel Knez (FELMI): Electron Beam Driven Dynamics in Experiment and Simulation
- Benjamin Zanghellini (BOKU): Investigation of the nanostructure of a sclerosing osteosarcoma using small angle x-ray scattering and quantitative backscattered electron imaging
- Mostafa Shawrav (TU Wien): Photo thermal analysis of FEBID gold nanostructures Institute of Sensor & Actuator Systems
- Jinming Guo (OEAW-Leoben): Thermal stability of nanocrystalline alloys studied by in-situ HRTEM
- Domen Kampjut (IST-Austria): The mechanism of mammalian respiratory complex I
- Christian Ebner (University of Vienna): Electron beam induced structural relaxation in amorphous TiAl thin films under stress studied by selected area electron diffraction
- Stefan Noisternig (University of Vienna): In situ observations of electron beam induced nanocrystallization of an amorphous tungsten foil
- Stefan Zeiler (OEAW-Leoben): Severe plastic deformation behavior of CuAg alloys
- Wolfgang Wallisch (TU Wien): CMR Effect Investigations by Energy Loss
- Robert Krisper (FELMI): In Situ TEM: The Influence of IR Radiation on EDXS at Elevated Sample Temperatures
- Zhuo Chen (University Leoben): Effect of crystallographic orientation relationship on metastable AIN phase stability in the gradient CrN/AIN multilayers
- David Moser (FELMI): Aluminum Anode Characterization of a novel Aluminum-Sulfur secondary battery
- Anete Romanauska (Max F. Perutz Laboratories): Lipid storage at the inner nuclear membrane
- Katharina Keuenhof (Vienna Biocenter Core Facilities): Variations in Skin Thickness of the Tardigrade *Minesium tardigradum* in Hydrated and Tun-State

#### Information for presenters:

Speakers are very welcome to bring their own labtops, but don't have to. A Windows and an Apple labtop as well as laser pointer will be on site.

Poster boards, tape & pins for hanging up posters will be provided.





#### **Conference location:**

#### IMP Lecture Hall, Campus-Vienna-Biocenter 1, 1030 Vienna

The Vienna Biocenter campus is easily accessible via public transport: tram lines 18 and 71, bus 74A, suburban train S7 (connecting the city centre with the airport) stop at <u>St. Marx</u>. The closest metro station (U3 Schlachthausgasse) is a bit farther away, either you can take tram 18 for 2 or 3 stops or walk 5 to 10 minutes.

Parking for cars can unfortunately not be provided.









Thanks to the support of our sponsors we can offer the workshop free of charge for all ASEM members:







Thanks to Michael Stöger-Pollach updates and more details on the workshop are posted on the ASEM webpage: <a href="https://asem.at/events/8th-asem-workshop/">https://asem.at/events/8th-asem-workshop/</a>

#### Scope of the Workshop:

You are warmly invited to the 8<sup>th</sup> ASEM – Workshop for Advanced Electron Microscopy. This workshop is the annual meeting of electron microscopists in Austria bringing together researchers from academia and industry of all career levels (from students to professors) and all fields (life sciences, materials sciences, physical sciences). The workshop is open to all aspects of EM: from scanning to transmission EM and from sample preparation to data visualisation. The ASEM – Workshop especially aims at providing an opportunity for students to share and discus their work with an expert audience in a friendly atmosphere.

The conference language will be English. Thanks to the support of our sponsors the workshop is free of charge for all ASEM members.

Looking very much forward to see you in Vienna. For the organising committee,

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