

CISCEM 2018 – 4th Conference on *In-Situ* and Correlative Electron Microscopy

October 10 – 12, 2018, Saarbrücken, Germany

Keynote Speech

- 3 *High Resolution In Situ and Transmission Environmental Electron Microscopy of Material Reactions;* Robert Sinclair

Electron Microscopy of Proteins and Cells

- 5 *Correlative Fluorescence and Electron Microscopy of Graphene-Enclosed Whole Cells for High Resolution Analysis of Cellular Proteins;* Indra Navina Dahmke
- 7 *Single Particle Imaging with the Volta Phase Plate;* Radostin Danev
- 9 *Quantitative Studies of Membrane Proteins in Whole Cells with Different Methods of Liquid Phase Scanning Transmission Electron Microscopy;* Diana B. Peckys
- 11 *Imaging Graphene-Encapsulated Microtubules at Room Temperature with Electron Microscopy;* Sercan Keskin

Soft Matter and Biological Specimens

- 13 *Translating Insights from Liquid Phase Microscopy into Theory and Design;* Joe P. Patterson
- 15 *Contrast Analysis in Latex/Surfactant Aqueous Suspensions;* Karine Masenelli-Varlot

Studying Material Reactions with *In-Situ* Spectroscopy

- 17 *In-Situ Characterization of 2-Dim Materials at High Energy and Spatial Resolution;* Robert Klie
- 19 *Tracking the Structural and Chemical Evolution of Nanostructured Materials by In-Situ Experiments;* Zaoli Zhang
- 21 *Probing Functional Oxides by Ultra-High Resolution EELS under Variable-Temperature Stimuli;* Laura Bocher

Innovations in Techniques to Study Nanomaterial Processes

- 23 *Toward Quantitative Liquid Cell Electron Microscopy through Kinetic Control of Solution Chemistry;* Taylor J. Woehl
- 25 *Scanning Transmission Electron Microscopy and Diffraction in SEM: Novel Approaches for In Situ Studies;* Erdmann Spiecker

Towards High-Speed Low-Dose *In-Situ*

- 27 *Mapping Atomic Motions with Ultrabright Electrons: Fundamental Space-Time Limits to Imaging Chemistry and Biological Processes*; R. J. Dwayne Miller
- 29 *Sparse and Adaptive Sampling in Scanning Electron Microscopy*; Tim Dahmen

Nano-Catalysts

- 31 *Electron Microscopy Advances in Catalysis*; Stig Helveg
- 33 *Revealing the Surface Energetics and Reactivity of Bimetallic Copper-Gold Catalyst Nanoparticles by In Situ Environmental TEM*; Jaysen Nelayah
- 35 *Introducing and Controlling Water Vapor in Gas-Cell Microscopy Experiments*; Kinga A. Unocic
- 37 *Studying Electrocatalysts in Operando Conditions: Correlating TEM Imaging and X-Ray Spectroscopies*; Nathaly Ortiz Peña
- 39 *Pattern Formation in Catalyzed Surface Reactions Studied by In Situ SEM*; Marc Willinger

Nanomaterial Processes and Dynamics

- 41 *In-Situ Template Assisted Growth of Ag@Au Bimetallic Nanostructures*; Nabeel Ahmad
- 43 *Dynamics of Gold Nanoparticles at the Solid:Liquid Interface Studied by Liquid-Phase Electron Microscopy*; Elisa Cepeda Pérez
- 45 *Probing the Dynamics and the Atomic Structure of Gold Nanorods in Solution with Liquid-Cell TEM*; Abdelali Khelfa
- 47 *Molecular Beam Epitaxy of Germanium in the Atomic-Resolution Transmission Electron Microscope*; Jean-Luc Maurice

High Temperature *In-Situ* Experiments

- 49 *First Stage of Sintering of ThO₂ Microspheres: a HT-ESEM and HT-HRTEM Study*; Renaud Podor

Biology and Soft Matter (Posters)

- 51 *Analysis of Breast Cancer Cell Subpopulations for the Expression and Distribution of HER2 and their Response to Anti-Cancer Drugs Using Electron Microscopy*; Patricia Blach
- 53 *Probing the Adhesion Forces of staphylococcus aureus to Central Venous Catheters by Single-Cell Force Spectroscopy*; Gubesh Gunaratnam
- 55 *Challenges in Observing the Formation of Colloidal, Self-Assembled Monolayers with In Situ Electron Microscopy in Liquid*; Peter Kunnas
- 57 *Correlated 3D Light Microscopy and 3D Electron Microscopy: Applications of an Integrated Setup of a CLSM and a FIB/SEM*; Sergey Loginov

- 59 *Formation of Hierarchical Hybrid Silica-Polymer using Quantitative Cryo-Electron Tomography*; Mohammad-Amin Moradi
- 61 *Towards Understanding the Mechanisms behind Templated Growth of 2D Magnetite Platelets via Bio-Inspired Approaches*; Bernette Oosterlaken
- 63 *In-Situ Liquid Phase Electron Microscopy of Beam-Sensitive Materials*; Hanglong Wu

Materials Science (Posters)

- 65 *The Influence of Foils Thickness on Recrystallized Structure Observed During In-Situ Heating of AlMgScZr Alloy*; Miroslav Cieslar
- 67 *Fast and Convenient Method for FE-SEM Characterization of Microstructured Organic Solutions in Ionic Liquids*; Alexey Kashin
- 69 *Direct Observation of Metallic Thin Layers Dewetting by HT-ESEM*; Joseph Lautru
- 71 *Resistive Switching Studies of ReRAM Devices by In-Situ TEM*; Gemma Martín
- 73 *On the Benefits of Obtaining Surface Topography and Volume Structure Information by Correlative S (T)EM in a Scanning Electron Microscope*; Erich Müller
- 75 *Chemical Conversion of Functional Nanostructures Studied by Liquid Phase Transmission Electron Microscopy*; Hongyu Sun