



Symposium CM1: New Frontiers in Aberration Corrected Transmission Electron Microscopy

With the commercial availability of correctors for the spherical and chromatic aberrations of the imaging lenses in transmission and scanning transmission electron microscopes in the last 16 years, during which the focus has been mainly on installation, characterisation and testing of this new hardware and software, the focus now needs to shift towards new areas of science that can be addressed with this novel equipment.

This symposium intends to bring together researchers from different scientific fields discussing their needs for better resolved, faster and more controlled experimental materials studies to be conducted in aberration corrected (scanning) transmission electron microscopes.

This will include imaging, spectroscopy and diffraction based applications to materials science problems with planar and focused illumination.

Topics will include:

- Applications of sub-Å resolved imaging in materials science, physics and chemistry
- Spectroscopy with more intense or highly monochromated electron beams
- Electron diffraction from smaller volumes
- Planar illumination TEM vs. fast STEM with intensely focused beams
- Investigation of electron beam damage mechanisms at higher doses
- New specimen holders for in-situ chemical experiments
- New specimen holders with integrated detectors and functionality
- Towards time-resolved measurements with pulsed emitters and faster detectors

Joint sessions are being considered with CM2 - **Quantitative Tomography for Materials Research**, CM3 - **Mechanics and Tribology at the Nanoscale—*In Situ* and *In Silico* Investigations**, NT7 - **Nanoparticle Characterization and Removal**.

Also, a **tutorial** complementing this symposium is tentatively planned. Further information will be included in the MRS Program that will be available online in January.

Invited speakers include:

LJ Allen	University of Melbourne, Australia	I MacLaren	University of Glasgow, United Kingdom
PM Batson	Rutgers University, USA	DA Muller	Cornell University, USA
GA Botton	McMaster University, Canada	DJ Smith	Arizona State University, USA
E Boyes	University of York, United Kingdom	E Snoeck	CEMES, CNRS Toulouse, France
R Erni	EMPA, Switzerland	V Srot	Max-Planck Institute for Solid State Research, Germany
M Haider	CEOS GmbH, Germany	S Stemmer	University of California, Santa Barbara, USA
L Houben	Weizmann Institute of Science, Israel	S Takeda	Osaka University, Japan
OL Krivanek	NION Co., USA	S Van Aert	University of Antwerp, Belgium
J Lebeau	North Carolina State University, USA		

Symposium Organizers

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