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SALVE

3rd SALVE Symposium



Organized by Ute Kaiser, 12 / 2017

December 12 to 14, 2017 - The 3rd Sub-Angstrom Low-Voltage Electron Microscopy (SALVE) Symposium brings together distinguished scientists from all over the world to discuss low-voltage instrumentation and its applications. A particular focus will be given to the manufacturing of low-dimensional materials and the assessment of their properties by theoretical calculations. Various TEM techniques will be discussed - (S)TEM imaging, in-situ TEM, electron holography, cryo-TEM and spectroscopy. Finally, challenges and prospects of low-voltage imaging of biologically relevant objects will be addressed.

Tuesday, December 12th, lecture room N27

Time	Speaker	Title
	Chair: U. Kaiser	Session: Advanced instrumentation I
8:30 – 8:35 am	Ute Kaiser	Opening of the SALVE symposium
8:35 – 8:55 am	Harald Rose	Benefits and shortcomings of aberration-corrected low-voltage electron microscopy
8:55 – 9:15 am	Heiko Müller	Optical design of the SALVE Cc/Cs corrector and its benefits for low-kV (EF)TEM
9:15 – 9:30 am	Zhongbo Lee	Image calculation for low voltages
9:30 – 9:45 am	Felix Börrnert	Contrast transfer in the SALVE TEM
9:45 – 10:00 am	Johannes Biskupek	EFTEM imaging in the SALVE TEM
10:00 – 10:30 am		<i>Coffee Break</i>
	Chair: M. Haider	Session: Advanced instrumentation II
10:30 – 11:00 am	Bert Freitag	New capabilities on the Themis Z platform: iDPC imaging, 4D STEM for diffractive imaging and ultra high resolution EELS
11:00 – 11:30 am	Joachim Mayer	Chromatic aberration correction: New methods and applications developed on the PICO instrument
11:30 – 12:00 am	Hidetaka Sawada	High resolution electron microscope developed under Triple C project and aberration measurement

12:00 – 12:30 pm	Ondrej Krivanek	Ultra-high spatial and energy resolution STEM/EELS
12:30 – 2:00 pm		<i>Lunch and SALVE visit I</i>
	Chair: E. Olssen	Session: Low-dimensional materials: Preparation, characterisation, theory I
2:00 – 2:30 pm	Reshef Tenne	Model-based analysis of high-resolution electron holograms of low-dimensional materials
2:30 – 3:00 pm	Tanja Weil	Biohybrid nanomaterials for nanomedicine and sensing
3:00 – 3:30 pm	Jannik Meyer	Understanding and exploiting the interaction of electron beams with low-dimensional materials
3:30 – 4:00 pm	Erdmann Spiecker	Exploring extended defects in 2D materials using advanced electron microscopy
4:00 – 4:30 pm		<i>Coffee Break</i>
	Chair: Y. Zhou	Session: Low-dimensional materials: Preparation, characterisation, theory II
4:30 – 5:00 pm	R. Dunin-Borkowski	Model-based reconstruction of magnetization distribution from electron-optical phase images
5:00 – 5:30 pm	Axel Lubk	Advanced holographic tomographies for nanoscale materials
5:30 – 6:00 pm	Xinliang Feng	Graphene and organic 2D materials
6:00 – 6:30 pm	Thomas Heine	From inorganic chemistry of layered materials to two-dimensional crystals: A route to new materials.
7:15 – 8:00 pm		<i>Visit of the Ulm cathedral</i>
8:00 pm		<i>Dinner</i>

Wednesday, December 13th, lecture room N27

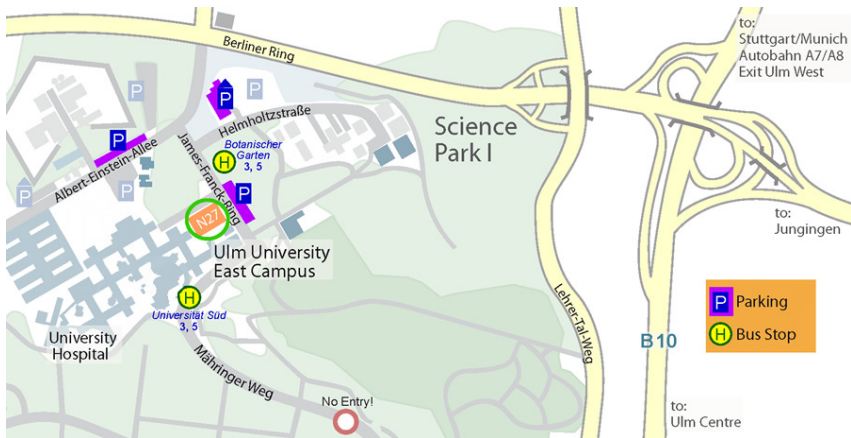
Time	Speaker	Title
	Chair: N. Tanaka	Session: Advanced techniques I
8:00 – 8:30 am	Yimei Zhou	Revealing the origin of charge transfer and charge density wave in layered materials using atomically resolved electron microscopy and spectroscopy
8:30 – 9:00 am	Jianwei Miao	Atomic electron tomography: Adding a new dimension to see individual atoms in materials
9:00 – 9:30 am	Frances Ross	In situ growth experiments on two dimensional materials
9:30 – 10:00 am	Eva Olsson	In situ TEM studies to link atomic structure to properties
10:00 – 10:30 am	Dagmar Gerthsen	Chances and challenges of high-resolution imaging in a scanning electron microscope
10:30 – 11:00 am		<i>Coffee break</i>
	Chair: J. Meyer	Session: Low-dimensional materials: Preparation, characterisation, theory IV
11:00 – 11:30 am	Angus Kirkland	Recent developments in imaging defects and defect dynamics in low dimensional materials
11:30 – 12:00 am	Sarah Haigh	Understanding graphene-based heterostructures at the atomic scale using STEM
12:00 – 12:30 pm	A. Krashennikov	Understanding defect production and atomic structure transformations under electron beam in TEM
12:30 – 2:00 pm		<i>Lunch and SALVE visit II in the botanical garden</i>

	Chair: L. Houben	Session: Bridging biological and materials sciences
2:00 – 2:30 pm	Lena F. Kourkoutis	Probing low temperature electronic phases using cryo-STEM
2:30 – 3:00 pm	Miroslava Schaffer	Cryo-FIB: Current state and challenges
3:00 – 3:30 pm	Chris Russo	Determining the energy scaling of some physical phenomenon important in electron cryomicroscopy of biological specimen
3:30 – 4:00 pm	Christoph Koch	Inline electron holography of soft matter
4:00 – 4:30 pm		<i>Coffee break</i>
	Chair: F. Ross	Session: Low-dimensional materials: Preparation, characterisation, theory V
4:30 – 5:00 pm	Andrey Turchanin	Novel 2D materials by electron beam induced chemistry
5:00 – 5:30 pm	Andrei Khlobystov	Chemistry of single molecules through a TEM
5:30 – 6:00 pm	Wu Zhou	Low voltage scanning transmission electron microscopy (STEM) for 2D materials
6:00 – 6:30 pm	Annick Loiseau	Advances in hBN characterization metrics
7:00 – 8:30 pm		<i>Visit of the Ulm christmas market</i>
9:30 – 10:30 pm	Valerij Petasch	<i>Night piano concert in the Ulmer Stadthaus</i>

Thursday, December 14th, lecture room N27

Time	Speaker	Title
	Chair: H. Rose	Session: Low-dimensional materials: Preparation, characterisation, theory VI
8:30 – 9:00 am	Nobuo Tanaka	Past and future prospect of Cs-corrected TEM for nanomaterials
9:00 – 9:30 am	Elena Besley	TEM as a tool for “bottom-up” chemical kinetics
9:30 – 10:00 am	Pinshane Huang	Quantitative STEM and EELS of defects and mixing in 2D materials
10:00 – 10:30 am	Chuanhong Jin	Capture the growth kinetics of CVD growth of two-dimensional MoS ₂
10:30 – 11:00 am	Lothar Houben	Chromatic aberration-corrected EFTEM
11:00 – 11:30 am		<i>Coffee break</i>
	Chair: C. Koch	Session: Advanced techniques II
11:30 – 12:00 am	Stefan Löffler	Orbital mapping: Challenges and prospects
12:00 – 12:30 pm	M. Stöger-Pollach	Low voltage EELS and bessel beams in semiconductor science
12:30 – 1:00 pm	Marc Willinger	In-situ observation of metal catalyzed CVD growth of graphene
		<i>Lunch and SALVE visit III</i>

	Chair: E. Speaker	Session: Advanced techniques III
2:00 – 2:30 pm	Harald Rose	Advantages of differential STEM phase contrast at low voltages
2:30 – 3:00 pm	Mathieu Kociak	New directions in nanooptics with fast electrons
3:00 – 3:30 pm	Ute Kaiser	The modern AC-TEM: A view on the transformation of TEM
3:30 – 4:30 pm	All	Round table discussion on the outcome of the symposium



Location:

From the central railway station or the station "Theater" take Bus 3 or 5 direction "Wissenschaftsstadt" or "Science Park". For the electron microscopy building N27 get out at the bus station "Botanischer Garten".

The symposium is sponsored by:

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