



Program SALVE 2D23 September 25-28, 2023

All talks are in M28 (TTU) lecture room, Meyerhofstrasse, 89081 Ulm

Monday, September 25th, Morning Sessions

- 8:00 – 8:45 *Registration (N27, Foyer)*
Opening (TTU)
- 8:45 – 8:50 *ERHU music performance by Dr. Yueliang Li*
- 8:55 – 9:10 *Michael Weber, president of Ulm University, DE*
Ute Kaiser, Ulm University, DE
- 9:15 – 9:30 *Members of the vocal ensemble “Akkordverdächtig”*
- Chair: R. Sinclair* *Session 1*
- 9:30 – 10:00 *Lain-Jong Li (Lance Li), Hong Kong University, HK*
Potential Applications of 2D Materials in Electronics
- 10:00 – 10:30 *Ute Kaiser, Ulm University, DE*
Findings from the happy marriage between low-voltage TEM and low-dimensional materials
- 10:30 – 11:00 *Coffee break*
- Chair: Y. Zhu* *Session 2*
- 11:00 – 11:30 *Pulickel Ajayan, Rice University, US*
B-N-C Phases and 2D/3D Structures
- 11:30 - 12:00 *Kazu Suenaga, Osaka University, JP*
Electron microscopy and spectroscopy on 2D hybrid materials
- 12:00 – 12:30 *Fu-Rong Chen, City University of Hong Kong, HK*
Atomic Resolution 3D Dynamics of Helix Materials at Low Dose Mode
- 12:30 – 13:00 *Colin Humphreys, Queen Mary University of London, UK*
2D electronics beyond silicon
- 13:00 – 14:00 *Lunch*



Monday, September 25th, Afternoon Sessions

Chair: K. Suenaga

Session 3

14:00 – 14:30

Marija Drndic, *Pennsylvania University, USA*

Sculpting of 2D Materials: From Pores to Nanoporous Membranes

14:30 - 15:00

Pinshane Huang, *University of Illinois Urbana, US*

In-situ STEM and ptychography of 2D interfaces

15:00 – 15:30

Jannik C. Meyer, *Tübingen University, DE,*

Fabrication and analysis of 2D and mixed-dimensional heterostructures from combinations of aligned stacking, e-beam patterning, ion doping and molecular sandwiching

15:30 – 16:00

Sandra Van Aert, *Antwerp University, BE*

Recent advances in quantifying atomic structures and their dynamics from STEM data

16:00 – 16:30

Coffee break

Chair: W. Jäger

Session 4

16:30 – 17:00

Jeremie Silvent, *Tescan, Fuveau, FR*

NanoSpace: Sample characterization and implantation in ultra clean environment

17:00 – 17:30

Andrey Turchanin, *Jena University, Jena, DE*

CVD synthesis and properties of monolayer lateral heterostructure and Janus TMDs

17:30 – 18:00

Quentin Ramasse, *SuperSTEM Labs, Daresbury, UK*

Studying the chemistry and electronic structure of nanotube-encapsulated molecular and atomic systems with high-resolution STEM-EELS

19:00 – 20:00

Visit the roofs of Ulm Minster or take a guided City Walk



Tuesday, September 26th, Morning Sessions

Chair T. Pichler

Session 5

9:00 – 9:30

Andrea Konečná, *Brno University of Technology, Brno, CZ*

Optical properties of 2D materials probed by electron energy-loss spectroscopy

9:30 – 10:00

Elena Besley, *Nottingham University, UK* Molecular Quantum Rings: from Electronic Structure to Packing Behaviour

10:00 – 10:30

Christoph Koch, *Humboldt University Berlin, DE* Observing atoms in motion by fast electrons

10:30 – 11:00

Coffee break

Chair E. Spiecker

Session 6

11:00 – 11:30

Andrei N. Khlobystov, *Nottingham University, UK* Chemical Reactions Promoted by the Electron Beam in Transmission Electron Microscopy

11:30 – 12:00

Lena Yadgarov, *Ariel University, ISR* Exploring the Synthesis Mechanisms of Novel CsPbBr₃@MoS₂ Nanostructures toward their implementation in the field of renewable energy

12:00 – 12:30

Claudia Backes, *Kassel University, DE* Production of organic nanomaterials by liquid phase exfoliation

12:30 – 13:30

Lunch

Tuesday, September 26th, Afternoon Sessions

- Chair: E. Besley* *Session 7*
- 13:30 – 14:00 Robert Sinclair, *Stanford University, USA*
TEM studies of Twisted Epitaxial Gold Nanoparticles in Twisted MoS₂ Bilayers
- 14:00 – 14:30 Marc Willinger, *TU München, DE*
Graphene folding and fabrication of twisted layer graphene
- 14:30 – 15:00 Robert Klie, *Illinois University Chicago, US*
Atomic-Resolution cryo-STEM/EELS for the Study of 1D and 2D Materials
- 15:00 – 15:30 Arkady Krashennnikov, *HZDR, Rossendorf, DE*
Engineering the Structure and Properties of 2D Materials by Defect Creation and Intercalation
- 15:30 – 16:00 *Coffee break*
- Chair: J. C. Meyer* *Session 8*
- 16:00 – 16:30 Martin Linck, *CEOS GmbH, Heidelberg, DE*,
Present limitations and future prospects of hexapole-type aberration correctors for STEM
- 16:30 – 17:00 Thomas Pichler, *Wien University, AT*
Recent advances of momentum resolved electron energy-loss spectroscopy
- 17:00 – 17:30 Xiaoyan Zhong, *City University of Hong Kong, HK*
Achromatic imaging of electron energy loss spectroscopy and electron magnetic circular dichroism with atomic plane resolution
- 17:30 – 18:00 Knut Müller-Caspary, *LMU Munich, DE*
Gradient based analysis and design of momentum-resolved STEM experiments
- 18:00.–.18:25 *Fingerfood.....(Foyer N27)*
- 18:30 – 19:30 *Concert: Valerij Petasch, Pianist and Composer*
(H 4/5 O25)
- 20:00 – 22:00 *Dinner Ulm City*



Wednesday, September 27th, Morning Sessions

Chair R. Dunin-
Borkowski

Session 9

9:00 – 9:30

Yimei Zhu, *BNL, Upton, USA*

Emerging Electron Microscopy Techniques for Probing
Quantum Materials

9:30 – 10:00

Toma Susi, *Wien University, AT*

Achievements and Challenges for Scaling Up Electron-
Beam Manipulation of Graphene Impurities

10:00 – 10:30

Jiong Zhao, *Hong Kong Polytechnic University, HK* In
situ transmission electron microscopy on two-
dimensional ferroic chalcogenides

10:30 – 11:00

Coffee break

Chair: M. Willinger

Session 10

11:00 – 11:30

Grégory Schneider, *Leiden University, NL*

Electron microscopy of graphene nanopores: 2010-
2023

11:30 – 12:00

Jungwon Park, *Seoul National University, KOR*

3D and 4D Structures of Colloidal Nanoparticles by
Graphene Liquid Cell TEM

12:00 – 12:30

Erdmann Spiecker, *Erlangen University, DE*

Twist enables superlubric sliding in bilayer graphene

12:30 – 13:30

Group Photo & Lunch

Wednesday, September 27th, Afternoon Sessions

Chair: J. Mayer

Session 11

- 13:30 – 14:00 Sorin Lazar, *Thermofisher, Eindhoven, NL*
EELS at Extreme Energy Losses - an Opportunity to provide complementary Information to XAS
- 14:00 – 14:30 Wu Zhou, *University of Chinese Academy of Sciences, CN*
Single-atom microscopy and spectroscopy for carbon nanomaterials
- 14:30 – 15:00 Junhao Lin, *Southern University of Science and Technology, Shenzhen, CN*
Studying the intrinsic structure-property correlation in air-sensitive low D materials by a home-built glovebox interconnected system (GIS)
- 15:00 – 15:30 Juan-Carlos Idrobo, *University of Washington, US*
STEM in Flatland-An Adventure of Many Dimensions
- 15:30 – 16:00 *Coffee break*

Chair: C. Koch

Session 12

- 16:00 – 16:30 Saleh Gorji, *Gatan/Ametek, München, DE*
Overcoming challenges in imaging beam-sensitive materials with direct detection cameras
- 16:30 – 17:00 Michael Stöger-Pollach, *TU Wien, AT*
2D electron gases in oxide interfaces
- 17:00 – 17:30 Viera Skákalová, *Slovak Academy of Sciences, SK*
Simple chemical approach to two-dimensional metal iodides/graphene heterostructures
- 17:30 – 18:00 Kristian Mølhave, *DTU Lyngby, DK*
Nanofluidic EM with Water in Nanochannels and with Eutectic Droplets on Nanowires
- 18:00 – 18:30 Rasmus Schröder, *Heidelberg University, DE*
Backscattered Electron Energy Loss Spectroscopy with Analytical Ultra-Low Voltage SEM
- 19:00 – 23:00 *Conference Dinner at Ulm University, N27*

Thursday, September 28th, Morning Sessions

Chair: Z. Wu

Session 13

9:00 – 9:30

Masaaki Mukai, *JEOL GmbH, München, DE*

Atomic resolution electron microscopy in a magnetic field free environment

9:30 – 10:00

Tatiana Latychevskaia, *Paul Scherer Institute, Villingen, CH,*

Quantitative Low-Energy Electron Coherent Imaging and Convergent Beam Electron Diffraction of 2D Materials

10:00 – 10:30

Jani Kotakoski, *Wien University, AT*

Creating and imaging quantum centers in diamond 2D materials

10:30 – 11:00

Xinliang Feng, *TU Dresden, DE,*

Advances in Organic 2D Crystals - From On-Water Surface Chemistry to Functional Applications

11:00 – 11:30

Coffee Break

Chair: J. Biskupek

Session 14

11:30 – 12:00

Michael Elbaum, *Weizman Institute, ISR*

Advances in Biological Cryo-EM by STEM

12:00 – 12:30

Joachim Mayer, *RWTH Aachen, DE*

The TOMO Project – Integrating a Fully Functional Atom Probe in an Aberration-Corrected TEM

12:30 – 13:15

Rafal Dunin-Borkowski, *FZ Jülich, DE*

Advanced transmission electron microscopy of two-dimensional magnetic materials & Outline of a European TEM infrastructure

13:15 – 14:00

Lunch

Chair: E. Besley

14:00 – 16:30

SALUTE

Session on the occasion of the 70th birthday of Ute

Kaiser organized by Elena Besley

N27, Multimedia room

16:30 – 17:00

Fingerfood

Farewell and end of the Conference



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uulm

5th  **2D23**
SALVE Symposium
Ulm, September 25-28