

## Crystalline Solids and their Microstructure Division Fachverband Kristalline Festkörper und deren Mikrostruktur (KFM)

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### Overview of Invited Talks and Sessions

(Lecture halls H9; Poster P1)

#### Invited Talks

KFM 1.1	Mon	9:30–10:00	H9	<b>Epitaxial films of layered perovskite-based ferroelectrics: phase stability, polarization enhancement, and pathways to polar metallicity</b> — •ELZBIETA GRADAUSKAITE
KFM 8.1	Tue	9:30–10:00	H9	<b>Ferroelectric bubble currents</b> — •HUGO ARAMBERRI
KFM 11.1	Wed	9:30–10:00	H9	<b>Towards 3D nanoscale chemical mapping with atom probe tomography</b> — •KASPER HUNNESTAD, CONSTANTINOS HATZOGLOU, ANTONIUS VAN HELVOORT, DENNIS MEIER
KFM 12.1	Wed	11:00–11:30	H9	<b>Model-assisted Insight into Degradation of Li-Ion Batteries during Thermal Abuse</b> — •ULRIKE KREWER, LEON SCHMIDT, JORGE VALENZUELA
KFM 15.1	Thu	9:30–10:00	H9	<b>Is CVD diamond now ready to become an electronic material?</b> — •PHILIPPE BERGONZO
KFM 18.1	Thu	15:30–16:00	H9	<b>Domain gratings of sub-micrometer period for quantum technologies</b> — •CARLOTA CANALIAS

#### Invited Talks of the joint SKM Dissertationspreis 2025 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30–10:00	H2	<b>Nanoscale Chemical Analysis of Ferroic Materials and Phenomena</b> — •KASPER AAS HUNNESTAD
SYSD 1.2	Mon	10:00–10:30	H2	<b>Advanced Excitation Schemes for Semiconductor Quantum Dots</b> — •YUSUF KARLI
SYSD 1.3	Mon	10:30–11:00	H2	<b>Aspects and Probes of Strongly Correlated Electrons in Two-Dimensional Semiconductors</b> — •CLEMENS KUHNENKAMP
SYSD 1.4	Mon	11:00–11:30	H2	<b>Mean back relaxation and mechanical fingerprints: simplifying the study of active intracellular mechanics</b> — •TILL MÜNKER
SYSD 1.5	Mon	11:30–12:00	H2	<b>Coherent Dynamics of Atomic Spins on a Surface</b> — •LUKAS VELDMAN

#### Invited Talks of the joint Symposium AI-driven Materials Design: Recent Developments, Challenges and Perspectives (SYMD)

See SYMD for the full program of the symposium.

SYMD 1.1	Mon	15:00–15:30	H1	<b>Learning physically constrained microscopic interaction models of functional materials</b> — •BORIS KOZINSKY
SYMD 1.2	Mon	15:30–16:00	H1	<b>GRACE universal interatomic potential for materials discovery and design</b> — •RALF DRAUTZ
SYMD 1.3	Mon	16:00–16:30	H1	<b>Multiscale Modelling &amp; Machine Learning Algorithms for Catalyst Materials: Insights from the Oxygen Evolution Reaction</b> — •NONG ARTRITH
SYMD 1.4	Mon	16:45–17:15	H1	<b>Inverse Design of Materials</b> — •HONGBIN ZHANG
SYMD 1.5	Mon	17:15–17:45	H1	<b>Data-Driven Materials Science</b> — •MIGUEL MARQUES

## Invited Talks of the joint Symposium Progress and Challenges in Modelling Electron-Phonon Interaction in Solids (SYIS)

See SYIS for the full program of the symposium.

SYIS 1.1	Tue	9:30–10:00	H1	<b>Electron-phonon and exciton-phonon coupling in advanced materials</b> — •CLAUDIA DRAXL
SYIS 1.2	Tue	10:00–10:30	H1	<b>Exciton-phonon dynamics from first principles</b> — •ENRICO PERFETTO
SYIS 1.3	Tue	10:30–11:00	H1	<b>Polarons and exciton polarons from first principles</b> — •FELICIANO GIUSTINO
SYIS 1.4	Tue	11:15–11:45	H1	<b>Wannier-Function-Based First-principle Approach to Coupled Exciton-Phonon-Photon Dynamics in Two-Dimensional Semiconductors</b> — •ALEXANDER STEINHOFF, MATTHIAS FLORIAN, FRANK JAHNKE
SYIS 1.5	Tue	11:45–12:15	H1	<b>Phonon influence on (cooperative) photon emission from quantum dots</b> — •ERIK GAUGER, JULIAN WIERCINSKI, MORITZ CYGOREK

## Invited Talks of the joint Symposium Electronic Structure Theory for Quantum Technology: From Complex Magnetism to Topological Superconductors and Spintronics (SYES)

See SYES for the full program of the symposium.

SYES 1.1	Fri	9:30–10:00	H1	<b>Ab-initio Design of superconductors</b> — •LILIA BOERI
SYES 1.2	Fri	10:00–10:30	H1	<b>Topological superconductivity from first principles</b> — BENDEGÚZ NYÁRI, ANDRÁS LÁSZLÓFFY, LEVENTE RÓZSA, GÁBOR CSIRE, BALÁZS ÚJFALUSSY, •LÁSZLÓ SZUNYOGH
SYES 1.3	Fri	10:30–11:00	H1	<b>First-principles study and mesoscopic modeling of two-dimensional spin and orbital fluctuations in FeSe</b> — •MYRTA GRÜNING, ABYAY GHOSH, PIOTR CHUDZINSKI
SYES 1.4	Fri	11:15–11:45	H1	<b>Non-collinear magnetism in 2D materials from first principles: Multiferroic order and magnetoelectric effects.</b> — •THOMAS OLSEN
SYES 1.5	Fri	11:45–12:15	H1	<b>Spin-phonon and magnon-phonon interactions from first principles</b> — •MARCO BERNARDI

## Sessions

KFM 1.1–1.6	Mon	9:30–11:15	H9	<b>(Multi)ferroic States: From Fundamentals to Applications (I)</b>
KFM 2.1–2.13	Mon	9:30–13:00	H13	<b>Perovskite and Photovoltaics I (joint session HL/KFM)</b>
KFM 3.1–3.10	Mon	9:30–12:15	H16	<b>Multiferroics and Magnetoelectric Coupling (joint session MA/KFM)</b>
KFM 4.1–4.6	Mon	11:30–13:00	H9	<b>(Multi)ferroic States: From Fundamentals to Applications (II)</b>
KFM 5.1–5.7	Mon	15:00–17:00	H9	<b>Instrumentation, Microscopy and Tomography with X-ray Photons, Electrons, Ions and Positrons</b>
KFM 6.1–6.1	Mon	15:00–15:30	H10	<b>Invited Talk: X. Fang (joint session MM/KFM)</b>
KFM 7.1–7.5	Mon	17:15–18:30	H22	<b>Materials for the Storage and Conversion of Energy (joint session MM/KFM)</b>
KFM 8.1–8.7	Tue	9:30–11:30	H9	<b>(Multi)ferroic States: From Fundamentals to Applications (III)</b>
KFM 9.1–9.5	Tue	11:45–13:00	H9	<b>(Multi)ferroic States: From Fundamentals to Applications (IV)</b>
KFM 10.1–10.5	Tue	14:00–15:15	H22	<b>Materials for the Storage and Conversion of Energy (joint session MM/KFM)</b>
KFM 11.1–11.4	Wed	9:30–10:45	H9	<b>(Multi)ferroic States: From Fundamentals to Applications (V)</b>
KFM 12.1–12.6	Wed	11:00–12:45	H9	<b>Holistic Structural and Safety Assessment of Lithium-ion and Post-Lithium Cells and their Materials (Modelling of Battery Materials and Degradation)</b>
KFM 13.1–13.7	Wed	15:00–16:45	H9	<b>Holistic Structural and Safety Assessment of Lithium-ion and Post-Lithium Cells and their Materials (Experimental Characterisation and Safety Testing)</b>
KFM 14.1–14.26	Wed	17:00–18:30	P1	<b>Poster</b>
KFM 15.1–15.12	Thu	9:30–13:15	H9	<b>Crystal Structure Defects / Real Structure / Microstructure</b>
KFM 16.1–16.13	Thu	9:30–13:00	H13	<b>Perovskite and Photovoltaics II (joint session HL/KFM)</b>
KFM 17.1–17.5	Thu	11:45–13:00	H23	<b>Functional Materials: Performance, Reliability and Degradation; and Complex Materials (joint session MM/KFM)</b>
KFM 18.1–18.7	Thu	15:30–17:45	H9	<b>Materials Research in Polar Oxides: Perspectives for Optics &amp; Electronics</b>
KFM 19	Thu	18:00–19:00	H9	<b>Members' Assembly</b>

## Members' Assembly of the Crystalline Solids and their Microstructure Division

Thursday 18:00–19:00 H9