

Metal and Material Physics Division Fachverband Metall- und Materialphysik (MM)

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Overview of Invited Talks and Sessions

(Lecture halls H44, H45, and H46; Poster P2)

Invited Talks

MM 1.1	Mon	9:30–10:00	H44	A novel mechanism to generate metallic single crystals — ●CAROLIN KÖRNER, JULIAN PISTOR, JOHANNES BÄREIS, MATTHIAS MARKL
MM 11.1	Tue	9:30–10:00	H44	Fast calorimetry: studying phase transitions in slow motion — ●JÖRG F. LÖFFLER
MM 19.1	Wed	9:30–10:00	H44	High-Entropy Alloys: Materials design in high dimensional chemical space from ab initio thermodynamics — ●FRITZ KÖRMANN
MM 27.1	Thu	9:30–10:00	H44	Crystal rotation kinematics during the tribological loading of high-purity copper — ●CHRISTIAN GREINER

Invited Talks of the joint Symposium SKM Dissertation Prize 2022 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	10:15–10:45	H2	Charge localisation in halide perovskites from bulk to nano for efficient optoelectronic applications — ●SASCHA FELDMANN
SYSD 1.2	Mon	10:45–11:15	H2	Nonequilibrium Transport and Dynamics in Conventional and Topological Superconducting Junctions — ●RAFFAEL L. KLEES
SYSD 1.3	Mon	11:15–11:45	H2	Probing magnetostatic and magnetotransport properties of the antiferromagnetic iron oxide hematite — ●ANDREW ROSS
SYSD 1.4	Mon	11:45–12:15	H2	Quantum dot optomechanics with surface acoustic waves — ●MATTHIAS WEISS

Invited Talks of the joint Symposium From Physics and Big Data to the Design of Novel Materials (SYNM)

See SYNM for the full program of the symposium.

SYNM 1.1	Mon	15:00–15:30	H1	How to tackle the "I" in FAIR? — ●CLAUDIA DRAXL
SYNM 1.2	Mon	15:30–16:00	H1	Beyond the average error: machine learning for the discovery of novel materials — ●MARIO BOLEY, SIMON TESHUVA, FELIX LUONG, LUCAS FOPPA, MATTHIAS SCHEFFLER
SYNM 1.3	Mon	16:00–16:30	H1	The Phase Diagram of All Inorganic Materials — ●CHRIS WOLVERTON
SYNM 1.4	Mon	16:45–17:15	H1	Automated data-driven upscaling of transport properties in materials — ●DANNY PEREZ, THOMAS SWINBURNE
SYNM 1.5	Mon	17:15–17:45	H1	Data-driven understanding of concentrated electrolytes — ●ALPHA LEE

Invited Talks of the joint Symposium United Kingdom as Guest of Honor (SYUK)

See SYUK for the full program of the symposium.

SYUK 1.1	Wed	9:30–10:00	H2	Structure and Dynamics of Interfacial Water — ●ANGELOS MICHAELIDES
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SYUK 1.2	Wed	10:00–10:30	H2	A molecular view of the water interface — ●MISCHA BONN
SYUK 1.3	Wed	10:30–11:00	H2	Motile cilia waves: creating and responding to flow — ●PIETRO CICUTA
SYUK 1.4	Wed	11:00–11:30	H2	Cilia and flagella: Building blocks of life and a physicist’s playground — ●OLIVER BÄUMCHEN
SYUK 1.5	Wed	11:45–12:15	H2	Computational modelling of the physics of rare earth - transition metal permanent magnets from SmCo₅ to Nd₂Fe₁₄B — ●JULIE STAUNTON
SYUK 2.1	Wed	15:00–15:30	H2	Hysteresis Design of Magnetic Materials for Efficient Energy Conversion — ●OLIVER GUTFLEISCH
SYUK 2.2	Wed	15:30–16:00	H2	Non-equilibrium dynamics of many-body quantum systems versus quantum technologies — ●IRENE D’AMICO
SYUK 2.3	Wed	16:00–16:30	H2	Quantum computing with trapped ions — ●FERDINAND SCHMIDT-KALER
SYUK 2.4	Wed	16:45–17:15	H2	Breaking the millikelvin barrier in cooling nanoelectronic devices — ●RICHARD HALEY
SYUK 2.5	Wed	17:15–17:45	H2	Superconducting Quantum Interference Devices for applications at mK temperatures — ●SEBASTIAN KEMPF

Invited Talks of the joint Symposium Frontiers of Electronic-Structure Theory: Focus on Artificial Intelligence Applied to Real Materials (SYES)

See SYES for the full program of the symposium.

SYES 1.1	Thu	15:00–15:30	H1	Machine-learning-driven advances in modelling inorganic materials — ●VOLKER L. DERINGER
SYES 1.2	Thu	15:30–16:00	H1	Machine-Learning Discovery of Descriptors for Square-Net Topological Semimetals — ●EUN-AH KIM
SYES 1.3	Thu	16:00–16:30	H1	Four Generations of Neural Network Potentials — ●JÖRG BEHLER
SYES 1.4	Thu	16:30–17:00	H1	Using machine learning to find density functionals — ●KIERON BURKE
SYES 1.5	Thu	17:00–17:30	H1	Coarse graining for classical and quantum systems — ●CECILIA CLEMENTI

Sessions

MM 1.1–1.1	Mon	9:30–10:00	H44	Invited Talk Carolin Körner
MM 2.1–2.10	Mon	10:15–13:00	H44	Computational Materials Modelling: Energy Materials
MM 3.1–3.9	Mon	10:15–12:45	H45	Microstructures and Phase Transformations: Metals & Alloys
MM 4.1–4.10	Mon	10:15–13:00	H46	Structural Materials
MM 5.1–5.1	Mon	15:00–15:30	H44	Non-equilibrium Phenomena in Materials Induced by Electrical and Magnetic Fields 1
MM 6.1–6.10	Mon	15:45–18:30	H44	Computational Materials Modelling: Defects / Alloys
MM 7.1–7.5	Mon	15:45–17:00	H45	Microstructures and Phase Transformations: Oxides & Perovskites
MM 8.1–8.10	Mon	15:45–18:30	H46	Materials for Storage and Conversion of Energy
MM 9.1–9.4	Mon	17:15–18:30	H45	Non-equilibrium Phenomena in Materials Induced by Electrical and Magnetic Fields 2
MM 10.1–10.30	Mon	18:00–20:00	P2	Poster Session 1
MM 11.1–11.1	Tue	9:30–10:00	H44	Invited Talk Jörg F. Löffler
MM 12.1–12.10	Tue	10:15–13:00	H44	Computational Materials Modelling: Physics of Ensembles 1
MM 13.1–13.7	Tue	10:15–13:00	H45	Non-equilibrium Phenomena in Materials Induced by Electrical and Magnetic Fields 3
MM 14.1–14.5	Tue	10:15–11:30	H46	Materials for Storage and Conversion of Energy (joint session MM/KFM)
MM 15.1–15.5	Tue	11:45–13:00	H46	Hydrogen in Materials: Hydrogen Effects
MM 16.1–16.4	Tue	14:00–15:00	H44	Mechanical Properties
MM 17.1–17.5	Tue	14:00–15:15	H46	Hydrogen in Materials: Hydrogen Storage
MM 18.1–18.43	Tue	17:30–20:00	P2	Poster Session 2
MM 19.1–19.1	Wed	9:30–10:00	H44	Invited Talk Fritz Körmann
MM 20.1–20.10	Wed	10:15–13:00	H44	Computational Materials Modelling: HEA, Alloys & Nanostructures
MM 21.1–21.10	Wed	10:15–13:00	H45	Transport in Materials: Thermal transport
MM 22.1–22.8	Wed	10:15–13:00	H46	Data Driven Materials Science: Experimental Data Treatment and Machine Learning

MM 23.1–23.10	Wed	15:45–18:30	H44	Computational Materials Modelling: Magnetic & Electrical Properties
MM 24.1–24.7	Wed	15:45–18:30	H45	Non-equilibrium Phenomena in Materials Induced by Electrical and Magnetic Fields 4
MM 25.1–25.8	Wed	15:45–18:30	H46	Data Driven Materials Science: Computational Frameworks / Chemical Complexity
MM 26	Wed	18:45–20:15	H44	Members’ Assembly
MM 27.1–27.1	Thu	9:30–10:00	H44	Invited Talk Christian Greiner
MM 28.1–28.5	Thu	10:15–11:30	H44	Transport in Materials: Diffusion / Electrical Transport & Magnetism
MM 29.1–29.5	Thu	10:15–11:30	H45	Data Driven Materials Science: Design of Functional Materials
MM 30.1–30.10	Thu	10:15–13:00	H46	Liquid and Amorphous Metals
MM 31.1–31.5	Thu	11:45–13:00	H44	Computational Materials Modelling: Physics of Ensembles 2
MM 32.1–32.5	Thu	11:45–13:00	H45	Nanomaterials: Surface Effects
MM 33.1–33.10	Thu	15:45–18:30	H44	Computational Materials Modelling: Process Schemes / Oxides
MM 34.1–34.10	Thu	15:45–18:30	H45	Data Driven Materials Science: Interatomic Potentials / Reduced Dimensions
MM 35.1–35.10	Thu	15:45–18:30	H46	Nanomaterials: Structure & Properties

Members’ Assembly of the Metal and Material Physics Division

Wednesday 18:45–20:15 H44