

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

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Overview of Invited Talks and Sessions (Lecture halls BAR 205, IFW A, IFW B, and IFW D; Poster P4)

Invited Talks

MM 1.1	Mon	9:30–10:00	BAR 205	Atomic resolution observations of grain boundary phase transformations — •CHRISTIAN LIEBSCHER, THORSTEN MEINERS, NICOLAS PETER, TIMOFEY FROLOV, ROBERT RUDD, GERHARD DEHM
MM 10.1	Mon	15:00–15:30	BAR 205	High-Entropy Alloys: Materials design in high dimensional chemical space from ab initio thermodynamics — •FRITZ KÖRMANN
MM 19.1	Tue	9:30–10:00	BAR 205	Ultrafast calorimetry: studying phase transitions in slow motion — •JÖRG F. LÖFFLER
MM 31.1	Wed	9:30–10:00	BAR 205	Importance of Dislocation Character Angle and Local Stress State Dependent Mobility Laws on Discrete Dislocation Dynamics Modeling of Plasticity in Aluminum — •DOUGLAS SPEAROT, KHANH DANG, DARSHAN BAMNEY, LAURENT CAPOLUNGO
MM 38.1	Wed	15:00–15:30	BAR 205	Single Crystals of Alloys by Additive Manufacturing — •CAROLIN KÖRNER, MARKUS RAMSPERGER, JULIAN PISTOR, JOHANNES KÖPF, MATTHIAS MARKL
MM 48.1	Thu	9:30–10:00	BAR 205	Molecular dynamics simulations of pressure induced phase transformations in iron and iron-carbon: Interplay of defects and phase transition — •NINA GUNKELMANN, HOANG-THIEN LUU, RAMON J. RAVELO, TIMOTHY C. GERMANN, EDUARDO M. BRINGA, HERBERT M. URBASSEK
MM 57.1	Thu	15:00–15:30	BAR 205	Deformation mechanisms in metals under a tribological load — •CHRISTIAN GREINER

Invited talks of the joint symposium SYSD

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30– 9:55	HSZ 02	Disentangling transport in topological insulator thin films down to the nanoscale — •FELIX LÜPKE
SYSD 1.2	Mon	9:55–10:20	HSZ 02	Spintronics with Terahertz Radiation: Probing and driving spins at highest frequencies — •TOM SEBASTIAN SEIFERT, TOBIAS KAMPFRATH
SYSD 1.3	Mon	10:20–10:45	HSZ 02	Non-radiative voltage losses in organic solar cells — •JOHANNES BENDUHN
SYSD 1.4	Mon	10:45–11:10	HSZ 02	Multivalent ions for tuning the phase behaviour of protein solutions — •OLGA MATSARSKAIA
SYSD 1.5	Mon	11:10–11:35	HSZ 02	Network Dynamics under Constraints — •MALTE SCHRÖDER
SYSD 1.6	Mon	11:35–12:00	HSZ 02	Exciton spectroscopy of van der Waals heterostructures — •PHILIPP NAGLER

Invited talks of the joint symposium SYBD

See SYBD for the full program of the symposium.

SYBD 1.1	Tue	9:30–10:00	HSZ 02	Materials innovation driven by data and knowledge systems — •SURYA KALIDINDI
SYBD 1.2	Tue	10:00–10:30	HSZ 02	Network Theory Meets Materials Science — •CHRIS WOLVERTON, MURAT AYKOL, VINAY HEGDE
SYBD 1.3	Tue	10:30–11:00	HSZ 02	Verification and error estimates for ab initio data — •CLAUDIA DRAXL
SYBD 1.4	Tue	11:15–11:45	HSZ 02	Identifying Domains of Applicability of Machine Learning Models for Materials Science — •MARIO BOLEY, CHRISTOPHER SUTTON, LUCA M. GHIRINGHELLI, MATTHIAS RUPP, JILLES VREEKEN, MATTHIAS SCHEFFLER
SYBD 1.5	Tue	11:45–12:15	HSZ 02	Deep learning of low-dimensional latent space molecular simulators — •ANDREW FERGUSON

Invited talks of the joint symposium SYED

See SYED for the full program of the symposium.

SYED 1.1	Thu	9:30–10:00	HSZ 01	Ultrafast electron dynamics at laser-irradiated surfaces — •BAERBEL RETHFELD
SYED 1.2	Thu	10:00–10:30	HSZ 01	Unraveling Momentum-Dependent Electron-Phonon Coupling and its Role in the Origin of Charge Density Wave Phases — •BRADLEY SIWICK, MARTIN OTTO, JAN-HENDRIK POHLS, LAURENT RENE DE COTRET, MARK SUTTON
SYED 1.3	Thu	10:30–11:00	HSZ 01	Light MATTERS!!! — •HRVOJE PETEK, ANDI LI, ZEHUA WANG, MARCEL REUTZEL
SYED 1.4	Thu	11:15–11:45	HSZ 01	Quantum localization and delocalization of charge carriers in molecular organic crystals — •JOCHEN BLUMBERGER
SYED 1.5	Thu	11:45–12:15	HSZ 01	Single-Atom Catalysis (SAC): How Structure Influences Reactivity — •GARETH PARKINSON

Invited talks of the joint symposium SYES

See SYES for the full program of the symposium.

SYES 1.1	Thu	9:30–10:00	HSZ 02	Understanding the physical variables driving mechanosensing — •PERE ROCA-CUSACHS
SYES 1.2	Thu	10:00–10:30	HSZ 02	Mechanics of life: Cellular forces and mechanics far from thermodynamic equilibrium — •TIMO BETZ
SYES 1.3	Thu	10:30–11:00	HSZ 02	A hydrodynamic approach to collective cell migration in epithelial tissues — •JAUME CASADEMUNT
SYES 1.4	Thu	11:15–11:45	HSZ 02	The spindle is a composite of two permeating polar gels — DAVID ORIOLA, BENJAMIN DALTON, FRANZISKA DECKER, FRANK JULICHER, •JAN BRUGUES
SYES 1.5	Thu	11:45–12:15	HSZ 02	Adding magnetic properties to epitaxial graphene — •RODOLFO MIRANDA
SYES 2.1	Thu	15:00–15:30	HSZ 01	Interactions in assemblies of surface-mounted magnetic molecules — •WOLFGANG KUCH
SYES 2.2	Thu	15:30–16:00	HSZ 01	Towards phononic circuits based on optomechanics — •CLIVIA M. SOTOMAYOR-TORRES
SYES 2.3	Thu	16:00–16:30	HSZ 01	Optical properties of 2D materials and heterostructures — •JANINA MAULTZSCH
SYES 2.4	Thu	16:45–17:15	HSZ 01	Bringing nanophotonics to the atomic scale — •JAVIER AIZPURUA
SYES 2.5	Thu	17:15–17:45	HSZ 01	Infrared signatures of the coupling between vibrational and plasmonic excitations — •ANNEMARIE PUCCI

Sessions

MM 1.1–1.1	Mon	9:30–10:00	BAR 205	Invited talk Liebscher
MM 2.1–2.4	Mon	10:15–11:30	BAR 205	Topical Session: Data Driven Materials Science - Materials Design I (joint session MM/CPP)
MM 3.1–3.5	Mon	10:15–11:30	IFW A	Transport - Atoms and Ions I

MM 4.1–4.5	Mon	10:15–11:30	IFW B	Microstructure and Phase Transformations - Characterization
MM 5.1–5.5	Mon	10:15–11:30	IFW D	Liquid and Amorphous Metals - Kinetics and Modelling
MM 6.1–6.5	Mon	11:45–13:00	BAR 205	Topical Session: Data Driven Materials Science - Materials Design II (joint session MM/CPP)
MM 7.1–7.5	Mon	11:45–13:00	IFW A	Transport - Atoms and Ions II
MM 8.1–8.5	Mon	11:45–13:00	IFW B	Microstructure and Phase Transformations - Processing
MM 9.1–9.5	Mon	11:45–13:00	IFW D	Liquid and Amorphous Metals - Brittle-to-ductile Transition
MM 10.1–10.1	Mon	15:00–15:30	BAR 205	Invited talk Körmann
MM 11.1–11.3	Mon	15:45–16:45	BAR 205	Topical Session: Data Driven Materials Science - Machine Learning for Damage Prediction
MM 12.1–12.4	Mon	15:45–16:45	IFW A	Transport - High Entropy Alloys
MM 13.1–13.4	Mon	15:45–16:45	IFW B	Microstructure and Phase Transformations - Processing and Imaging
MM 14.1–14.4	Mon	15:45–16:45	IFW D	Computational Materials Modelling - Methods I
MM 15.1–15.1	Mon	17:00–17:30	BAR 205	Topical Session: Data Driven Materials Science - Machine Learning for Production (joint session MM/CPP)
MM 16.1–16.4	Mon	17:00–18:00	IFW A	Transport - Heat Transport and Thermoelectricity
MM 17.1–17.3	Mon	17:00–17:45	IFW D	Computational Materials Modelling - Methods II
MM 18.1–18.43	Mon	18:15–20:00	P4	Poster Session I
MM 19.1–19.1	Tue	9:30–10:00	BAR 205	Invited talk Löffler
MM 20.1–20.4	Tue	10:15–11:30	IFW A	Topical Session: Interface-dominated phenomena - Diffusion
MM 21.1–21.5	Tue	10:15–11:30	IFW B	Transport - Ions and Electrons
MM 22.1–22.5	Tue	10:15–11:30	IFW D	Liquid and Amorphous Metals - Metallic Glass
MM 23.1–23.5	Tue	11:45–13:00	IFW A	Topical Session: Interface-dominated phenomena - Interactions at Interfaces
MM 24.1–24.5	Tue	11:45–13:00	IFW B	Materials for Sensors and Actuators
MM 25.1–25.5	Tue	11:45–13:00	IFW D	Liquid and Amorphous Metals - Structure
MM 26.1–26.5	Tue	14:15–15:30	BAR 205	Topical Session: Data Driven Materials Science - Machine Learning for Materials Properties
MM 27.1–27.5	Tue	14:15–15:30	IFW A	Topical Session: Interface-dominated phenomena - Nanoporous Metals
MM 28.1–28.4	Tue	14:15–15:15	IFW B	Computational Materials Modelling - Hydrogen in metals
MM 29.1–29.6	Tue	14:15–15:45	IFW D	Materials for Energy Storage and Conversion - Battery and Fuel Cell Materials (joint session MM/CPP)
MM 30.1–30.40	Tue	18:15–20:00	P4	Poster Session II
MM 31.1–31.1	Wed	9:30–10:00	BAR 205	Invited talk Spearot
MM 32.1–32.4	Wed	10:15–11:30	BAR 205	Topical Session: Data Driven Materials Science - Materials Data Management (joint session MM/CPP)
MM 33.1–33.5	Wed	10:15–11:30	IFW A	Topical Session: Interface-dominated phenomena - Hydrogen at Interfaces
MM 34.1–34.4	Wed	10:15–11:15	IFW D	Computational Materials Modelling - Matter-Particle Interaction
MM 35.1–35.6	Wed	11:45–13:15	BAR 205	Topical Session: Data Driven Materials Science - Descriptors (joint session MM/CPP)
MM 36.1–36.4	Wed	11:45–13:00	IFW A	Topical Session: Interface-dominated phenomena - Theoretical Approaches
MM 37.1–37.5	Wed	11:45–13:00	IFW D	Materials for Energy Storage and Conversion - Structure of Battery Materials
MM 38.1–38.1	Wed	15:00–15:30	BAR 205	Invited talk Körner
MM 39.1–39.5	Wed	15:45–17:00	BAR 205	Computational Materials Modelling - Alloys I
MM 40.1–40.4	Wed	15:45–17:00	IFW A	Topical Session: Interface-dominated phenomena - Solutes at Interfaces I
MM 41.1–41.5	Wed	15:45–17:00	IFW B	Computational Materials Modelling - Solids and Molecules (joint session MM/CPP)
MM 42.1–42.5	Wed	15:45–17:00	IFW D	Materials for Energy Storage and Conversion - Functional Materials
MM 43.1–43.5	Wed	17:15–18:30	BAR 205	Computational Materials Modelling - Alloys II
MM 44.1–44.5	Wed	17:15–18:30	IFW A	Topical Session: Interface-dominated phenomena - Solutes at Interfaces II

MM 45.1–45.5	Wed	17:15–18:30	IFW B	Computational Materials Modelling - Low dimensional systems
MM 46.1–46.5	Wed	17:15–18:30	IFW D	Materials for Energy Storage and Conversion - Electronic Properties
MM 47	Wed	18:30–20:00	IFW A	Annual General Meeting
MM 48.1–48.1	Thu	9:30–10:00	BAR 205	Invited talk Gunkelmann
MM 49.1–49.5	Thu	10:15–11:30	BAR 205	Structural Materials (Steels, light-weight materials, high-temperature materials) - I
MM 50.1–50.4	Thu	10:15–11:30	IFW A	Topical Session: Interface-dominated phenomena - Thermodynamics and Microstructure Evolution
MM 51.1–51.5	Thu	10:15–11:30	IFW B	Computational Materials Modelling - Mechanical Properties
MM 52.1–52.5	Thu	10:15–11:30	IFW D	Materials for Energy Storage and Conversion - Ion Diffusion
MM 53.1–53.6	Thu	11:45–13:15	BAR 205	Structural Materials (Steels, light-weight materials, high-temperature materials) - II
MM 54.1–54.4	Thu	11:45–12:45	IFW A	Topical Session: Interface-dominated phenomena - Crystallization and Microstructure Evolution
MM 55.1–55.5	Thu	11:45–13:00	IFW B	Computational Materials Modelling - Magnetic Materials
MM 56.1–56.5	Thu	11:45–13:00	IFW D	Materials for Energy Storage and Conversion - Intercalation
MM 57.1–57.1	Thu	15:00–15:30	BAR 205	Invited talk Greiner
MM 58.1–58.5	Thu	15:45–17:15	BAR 205	Topical Session: Data Driven Materials Science - Machine Learning for Materials Characterization (joint session MM/CPP)
MM 59.1–59.6	Thu	15:45–17:15	IFW A	Computational Materials Modelling - Potentials
MM 60.1–60.6	Thu	15:45–17:15	IFW B	Mechanical Properties: Plasticity, fracture, fatigue, wear - I
MM 61.1–61.6	Thu	15:45–17:15	IFW D	Nanomaterials - I
MM 62.1–62.6	Thu	17:30–19:00	BAR 205	Topical Session: Data Driven Materials Science - Machine Learning Applications (joint session MM/CPP)
MM 63.1–63.6	Thu	17:30–19:00	IFW A	Computational Materials Modelling - Electronic Structure of Complex Materials
MM 64.1–64.6	Thu	17:30–19:00	IFW B	Mechanical Properties: Plasticity, fracture, fatigue, wear - II
MM 65.1–65.6	Thu	17:30–19:00	IFW D	Nanomaterials - II

Annual General Meeting of the Metal and Material Physics Division

Wednesday 18:30–20:00 IFW A