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

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Overview of Invited Talks and Sessions

(Lecture rooms: BAR 205, IFW A, IFW B, IFW D, and BAR Schön; Posters: P4)

Invited Talks

MM 1.1	Mon	9:30–10:00	BAR 205	**Progress in understanding nanoscale plasticity using quantitative in situ TEM** — •Daniel Kiener
MM 12.1	Mon	15:00–15:30	BAR 205	**Building Thermodynamic Models Made Easy: A Bayesian Compressing Sensing Approach to Automatically Cluster-Expanding 1500 Alloy Systems** — •Gus L. W. Hart, Lance J. Nelson, Conrad W. Rosenbrock, Fei Zhou, Vidvuds Ozolins
MM 19.1	Tue	9:30–10:00	BAR 205	**Size effects on ion transport and energy storage in nanomaterials** — •Joachim Maier
MM 29.1	Tue	15:00–15:30	BAR 205	**Grain boundaries in metals: phase and structure transitions studied by tracer diffusion** — •Sergiy Divinski
MM 35.1	Wed	9:30–10:00	BAR 205	**From grain boundary premelting to liquid metal embrittlement: A modelling perspective** — •Robert Spatschek
MM 47.1	Thu	9:30–10:00	BAR 205	**Coherent X-ray Diffraction Imaging of Excitations in Metal Nanoparticles** — •Ian Robinson
MM 57.1	Thu	15:00–15:30	BAR 205	**Toward the development of Dy-free high coercivity Nd-Fe-B permanent magnets** — •Kazuhiro Hono, Hossein Sepehri-Amin, Tadakatsu Ohkubo
MM 63.1	Fri	9:30–10:00	BAR 205	**Water induced deformation of nanoporous materials** — •Oskar Paris

Sessions

MM 1.1–1.1	Mon	9:30–10:00	BAR 205	**Invited Talk (Hauptvortrag) Kiener**
MM 2.1–2.4	Mon	10:15–11:30	BAR 205	**Topical Session: Nanomechanics of nanostructured materials and systems I - Grain size effects**
MM 3.1–3.5	Mon	10:15–11:30	IFW A	**Functional Materials I - Energy storage**
MM 4.1–4.5	Mon	10:15–11:30	IFW D	**Computational Materials Modelling I - High throughput/Material discovery**
MM 5.1–5.8	Mon	10:30–13:15	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale (O with HL/TT/MM)**
MM 6.1–6.4	Mon	10:15–11:15	IFW B	**Microstructure and Phase Transformations I - Martensitic phase transformations**
MM 7.1–7.7	Mon	10:45–12:30	POT 081	**Energy materials: Water splitting, batteries, and supercapacitors (HL with MM/CPP)**
MM 8.1–8.4	Mon	11:45–13:00	BAR 205	**Topical Session: Nanomechanics of nanostructured materials and systems II - Thin films**
MM 9.1–9.4	Mon	11:45–12:45	IFW A	**Functional Materials II - Oxides and Alloys**
MM 10.1–10.6	Mon	11:45–13:15	IFW D	**Computational Materials Modelling II - Theory/Numerics**

MM 11.1–11.6	Mon	11:30–13:00	IFW B	**Microstructure and Phase Transformations II - Nucleation/Solidification**
MM 12.1–12.1	Mon	15:00–15:30	BAR 205	**Invited Talk (Hauptvortrag) Hart**
MM 13.1–13.6	Mon	15:45–17:45	BAR 205	**Topical Session: Nanomechanics of nanostructured materials and systems III - Small scale plasticity**
MM 14.1–14.6	Mon	15:45–17:15	IFW A	**Functional Materials III - Li ion batteries**
MM 15.1–15.7	Mon	15:45–17:45	IFW D	**Computational Materials Modelling III - Bulk thermodynamics/ Phase Transitions I**
MM 16.1–16.6	Mon	15:45–17:15	IFW B	**Microstructure and Phase Transformations III - Precipitaion hardening/ Alloying elements**
MM 17.1–17.10	Mon	16:00–18:45	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale II (O with HL/TT/MM)**
MM 18.1–18.39	Mon	18:00–20:00	P4	**Poster Session**
MM 19.1–19.1	Tue	9:30–10:00	BAR 205	**Invited Talk (Hauptvortrag) Maier**
MM 20.1–20.5	Tue	10:15–12:00	IFW A	**Topical Session: Nanomechanics of nanostructured materials and systems IV - Tribology/Composites**
MM 21.1–21.4	Tue	10:15–11:30	BAR 205	**Topical Session: Thermodynamics at the nano scale I - Kinetics, nucleation, grain growth, segregation**
MM 22.1–22.6	Tue	10:15–11:45	IFW B	**Mechanical properties I - Plastic deformation & fracture**
MM 23.1–23.5	Tue	10:15–11:30	IFW D	**Electron Microscopy I - Nanomaterials**
MM 24.1–24.9	Tue	10:30–13:15	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale III (O with HL/TT/MM)**
MM 25.1–25.4	Tue	11:45–13:00	BAR 205	**Topical Session: Thermodynamics at the nano scale II - Thermodynamics**
MM 26.1–26.5	Tue	11:45–13:00	IFW D	**Computational Materials Modelling IV - Phase transitions II**
MM 27.1–27.5	Tue	11:45–13:00	IFW B	**Transport I - Materials/Methods**
MM 28.1–28.5	Tue	12:00–13:15	IFW A	**Nanomaterials I - Synthesis of advanced nanostructures**
MM 29.1–29.1	Tue	15:00–15:30	BAR 205	**Invited Talk (Hauptvortrag) Divinski**
MM 30.1–30.6	Tue	15:45–17:45	BAR 205	**Topical Session: Thermodynamics at the nano scale III - Novel experimental and theoretical approaches**
MM 31.1–31.5	Tue	15:45–17:00	IFW D	**Mechanical properties II - Characterisation mechanics**
MM 32.1–32.4	Tue	15:45–16:45	IFW B	**Transport II - Microstructure/Grain boundaries**
MM 33.1–33.7	Tue	15:45–17:45	IFW A	**Nanomaterials II - Tubular nanostructures**
MM 34.1–34.40	Tue	18:00–20:00	P4	**Poster Session**
MM 35.1–35.1	Wed	9:30–10:00	BAR 205	**Invited Talk (Hauptvortrag) Spatschek**
MM 36.1–36.4	Wed	10:15–11:45	BAR 205	**Topical Session: Thermodynamics at the nano scale IV - Electrochemistry and strain**
MM 37.1–37.4	Wed	10:15–11:15	IFW D	**Computational Materials Modelling V - Point defects**
MM 38.1–38.6	Wed	10:15–11:45	IFW B	**Structural materials**
MM 39.1–39.5	Wed	10:15–11:30	IFW A	**Liquid and Amorphous Metals I - Shearbands**
MM 40.1–40.10	Wed	10:30–13:15	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale IV (O with HL/TT/MM)**
MM 41.1–41.6	Wed	11:30–13:00	IFW D	**Computational Materials Modelling VI - Dislocations**
MM 42.1–42.4	Wed	12:00–13:00	IFW B	**Electron Microscopy II - Advances in characterisation**
MM 43.1–43.5	Wed	11:45–13:00	IFW A	**Liquid and Amorphous Metals II - Mechanical properties**
MM 44.1–44.5	Wed	15:15–19:00	BAR Schön	**Festsitzung zum 50jährigen Bestehen der AG MM / Celebrating the 50th anniversary of the AG MM**
MM 45.1–45.11	Wed	16:00–19:15	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale V (O with HL/TT/MM)**
MM 46	Wed	19:00–20:00	BAR 205	**Mitgliederversammlung des Fachverbands Metall- und Materialphysik**
MM 47.1–47.1	Thu	9:30–10:00	BAR 205	**Invited Talk (Hauptvortrag) Robinson**
MM 48.1–48.5	Thu	10:15–11:30	BAR 205	**Topical session: X-ray and neutron scattering in materials science I - Coherent X-ray Diffraction Imaging of Excitations in Metal Nanoparticles**

MM 49.1–49.6	Thu	10:15–11:45	IFW D	**Computational Materials Modelling VII - Grain boundaries & Interfaces**
MM 50.1–50.7	Thu	10:15–12:00	IFW B	**Mechanical properties III - Evolution & deformation of microstructure**
MM 51.1–51.4	Thu	10:15–11:15	IFW A	**Liquid and Amorphous Metals III - Electronic properties of amorphous alloys**
MM 52.1–52.10	Thu	10:30–13:15	TRE Ma	**Focussed Session: Frontiers of Electronic Structure Theory - Non-equilibrium Phenomena at the Nano-scale VI (O with HL/TT/MM)**
MM 53.1–53.5	Thu	11:45–13:15	BAR 205	**Topical session: X-ray and neutron scattering in materials science II - Atomic migration studies ranging from neutrons to coherent X-rays**
MM 54.1–54.4	Thu	12:00–13:00	IFW D	**Computational Materials Modelling VIII - Functional materials**
MM 55.1–55.5	Thu	12:00–13:15	IFW B	**Nanomaterials III - Electronic, magnetic and optical properties**
MM 56.1–56.6	Thu	11:30–13:00	IFW A	**Liquid and Amorphous Metals IV**
MM 57.1–57.1	Thu	15:00–15:30	BAR 205	**Invited Talk (Hauptvortrag) Hono**
MM 58.1–58.5	Thu	15:45–17:15	BAR 205	**Topical session: X-ray and neutron scattering in materials science III - Real-time insights into fast heat treatment processes using diffraction methods**
MM 59.1–59.7	Thu	15:45–17:45	IFW D	**Computational Materials Modelling IX - Ferroelectrics**
MM 60.1–60.5	Thu	15:45–17:00	IFW B	**Nanomaterials IV - Deformation and mechanical properties**
MM 61.1–61.6	Thu	15:45–17:15	IFW A	**Liquid and Amorphous Metals V - Structure and structure formation**
MM 62.1–62.4	Thu	17:30–18:45	BAR 205	**Topical session: X-ray and neutron scattering in materials science IV - High Energy Single Grain Diffraction**
MM 63.1–63.1	Fri	9:30–10:00	BAR 205	**Invited Talk (Hauptvortrag) Paris**
MM 64.1–64.4	Fri	10:15–11:30	BAR 205	**Topical session: X-ray and neutron scattering in materials science V - X-ray Nanodiffraction Characterization of Inhomogeneous Structural and Mechanical Properties of Thin Films**
MM 65.1–65.4	Fri	11:45–13:00	BAR 205	**Topical session: X-ray and neutron scattering in materials science VI - Which orientations can we expect for elongated particles in self-confined systems?**

Topical session "X-ray and neutron scattering in materials science"

Organizers: Univ.-Prof. Dr. Oskar Paris (Montanuniversität Leoben), Prof. Dr. Martin Müller (Helmholtz-Zentrum Geesthacht)

X-ray and neutron scattering methods have been well-established and inevitable tools to unravel the structure of materials at the nanometer and atomic scale for many decades. Modern synchrotron radiation sources provide a wealth of novel, previously unavailable techniques such as for instance micro- and nanobeam X-ray scattering or the use of coherent X-ray beams that allow reconstructing real space images and 3D strain distribution with nanometer resolution from a scattering experiment. Neutron scattering on the other hand continues to be an extremely useful and complementary tool to enter deep in the bulk of engineering components or to sense magnetism. This symposium aims at bringing together method developers and "users" from all fields of materials research, spanning the range from engineering components to functional nanomaterials.

Annual General Meeting of the Metal and Material Physics Division

Wednesday 19:00–20:00 BAR 205