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, and IFW D; Poster P4)

Invited Talks

MM 1.1	Mon	9:30–10:00	BAR 205	**Liquid-liquid transition in metallic melts** — •Ralf Busch
MM 12.1	Mon	15:00–15:30	BAR 205	**From weakened chemical bonds to materials breakdown: An ab initio perspective** — •Mira Todorova
MM 23.1	Tue	9:30–10:00	BAR 205	**Integration of Grain Boundary Mechanics and Migration** — •David Srolovitz, Jian Han, Spencer Thomas, Vaclav Vitek
MM 45.1	Wed	15:00–15:30	BAR 205	**Diffusion in liquid metals and alloys** — •Florian Kargl
MM 53.1	Wed	18:30–19:00	BAR 205	**Small scale deformation behavior of high performance materials - Advanced mechanical testing meets high end microstructure characterization** — •Verena Maier-Kiener, Irmgard Weissensteiner, Benjamin Schuh, Anton Hohenwarter, Helmut Clemens
MM 54.1	Thu	9:30–10:00	BAR 205	**Revealing the mechanism of Z-phase formation in 12% Cr ferritic-martensitic steels** — •Daniel F. Urban, Christian Elsässer
MM 64.1	Thu	15:00–15:30	BAR 205	**Microstructural refinement, rate sensitivity and structural stability of Cu-X solid solutions after severe plastic deformation** — •Karsten Durst

Invited talks of the joint symposium SYLI

See SYLI for the full program of the symposium.

SYLI 1.1	Mon	9:30–10:00	HSZ 02	**Interfacial challenges in solid- state Li ion: some perspectives from theory** — •Alan Luntz, Saskia Stegmaier, Johannes Voss, Karsten Reuter
SYLI 1.2	Mon	10:00–10:30	HSZ 02	**Will solid electrolytes enable lithium metal anodes in solid state batteries?** — •Jürgen Janek, Dominik Weber, Wolfgang Zeier
SYLI 1.3	Mon	10:30–11:00	HSZ 02	**Hybrid Electrolytes for Solid-State Batteries** — •Hans-Dieter Wiemhöfer
SYLI 1.4	Mon	11:15–11:45	HSZ 02	**Neutron diffraction on solid-state battery materials** — •Helmut Ehrenberg, Anatoliy Senyshyn, Mykhailo Monchak, Sylvio Indris, Joachim Binder
SYLI 1.5	Mon	11:45–12:15	HSZ 02	**Sulfate-based Solid-State Batteries** — •Yuki Katoh

Invited talks of the joint symposium SYBM

See SYBM for the full program of the symposium.

SYBM 1.1	Tue	9:30–10:00	HSZ 02	**New twists in biological photonics: circular polarisation and beyond.** — •Pete Vukusic, Luke McDonald, Ewan Finlayson
SYBM 1.2	Tue	10:00–10:30	HSZ 02	**Bio-inspired materials and structures for technology and architecture** — •Thomas Speck
SYBM 1.3	Tue	10:30–11:00	HSZ 02	**Cellulose bio-inspired hierarchical structures** — •Silvia Vignolini

SYBM 1.4	Tue	11:15–11:45	HSZ 02	**Strong Flexible Bioenabled Nanocomposites for Sustainable Sensing** — •Vladimir Tsukuruk
SYBM 1.5	Tue	11:45–12:15	HSZ 02	**3D laser nano-printing of rationally designed materials** — •Martin Wegener

Invited talks of the joint symposium SYNS

See SYNS for the full program of the symposium.

SYNS 1.1	Wed	15:00–15:30	HSZ 02	**The Limits to Lithography: How Electron-Beams Interact with Materials at the Smallest Length Scales** — •Karl K. Berggren
SYNS 1.2	Wed	15:30–16:00	HSZ 02	**High precision fabrication for light management at nanoscale** — •Saulius Juodkazis, Armandas Balcytis
SYNS 1.3	Wed	16:00–16:30	HSZ 02	**Directed self-assembly of performance materials** — •Paul Nealey
SYNS 1.4	Wed	16:45–17:15	HSZ 02	**Nanometer accurate topography patterning using thermal Scanning Probe Lithography** — •Armin W. Knoll
SYNS 1.5	Wed	17:15–17:45	HSZ 02	**High resolution 3D nanoimprint lithography** — •Hartmut Hillmer

Invited talks of the joint symposium SYES

See SYES for the full program of the symposium.

SYES 1.1	Fri	10:30–11:00	HSZ 02	**Going Beyond Conventional Functionals with Scaling Corrections and Pairing Fluctuations** — •Weitao Yang
SYES 1.2	Fri	11:00–11:30	HSZ 02	**Multi-reference density functional theory** — •Andreas Savin
SYES 1.3	Fri	11:30–12:00	HSZ 02	**Density functionals from machine learning** — •Kieron Burke
SYES 1.4	Fri	12:00–12:30	HSZ 02	**Taming Memory-Dependence in Time-Dependent Density Functional Theory** — •Neepa Maitra
SYES 1.5	Fri	12:30–13:00	HSZ 02	**Quantum Embedding Theories** — •Fred Manby

Sessions

MM 1.1–1.1	Mon	9:30–10:00	BAR 205	**Invited talk Busch**
MM 2.1–2.5	Mon	9:30–12:15	HSZ 02	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - Invited talks**
MM 3.1–3.4	Mon	10:15–11:30	BAR 205	**Topical Session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Segregation and Embrittlement I**
MM 4.1–4.4	Mon	10:15–11:30	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses I - Structural Transitions**
MM 5.1–5.5	Mon	10:15–11:30	IFW B	**Computational Materials Modelling: Materials at finite temperatures**
MM 6.1–6.4	Mon	10:15–11:15	IFW D	**Structural Materials**
MM 7.1–7.10	Mon	10:30–13:00	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - I**
MM 8.1–8.6	Mon	11:45–13:15	BAR 205	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Segregation and Embrittlement II**
MM 9.1–9.6	Mon	11:45–13:15	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses II - Undercooled Melts**
MM 10.1–10.6	Mon	11:45–13:15	IFW B	**Computational Materials Modelling - Accelerated Approaches**
MM 11.1–11.7	Mon	11:45–13:30	IFW D	**Biomaterials**
MM 12.1–12.1	Mon	15:00–15:30	BAR 205	**Invited talk Todorova**
MM 13.1–13.12	Mon	15:00–18:15	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - II**

MM 14.1–14.6	Mon	15:45–17:15	BAR 205	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Electro- and mechno-chemical coupling**
MM 15.1–15.4	Mon	15:45–16:45	IFW A	**Symposium SYLI: Interfacial Challenges in Solid-State Li Ion Batteries - Interface-dominated behaviour**
MM 16.1–16.4	Mon	15:45–16:45	IFW B	**Computational Materials Modelling - Novel Materials**
MM 17.1–17.5	Mon	15:45–17:00	IFW D	**Functional Materials I**
MM 18.1–18.4	Mon	17:30–18:45	BAR 205	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Experimental Characterization**
MM 19.1–19.3	Mon	17:15–18:00	IFW A	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - sulphate- and phosphate-based electrolytes**
MM 20.1–20.5	Mon	17:00–18:15	IFW B	**Computational Materials Modelling - Defect structure and formation**
MM 21.1–21.6	Mon	17:15–18:45	IFW D	**Functional Materials II**
MM 22.1–22.41	Mon	19:00–20:00	P4	**Poster session I**
MM 23.1–23.1	Tue	9:30–10:00	BAR 205	**Invited talk Srolovitz**
MM 24.1–24.5	Tue	9:30–12:15	HSZ 02	**Bioinspired Functional Materials: From Nature's Nanoarchitectures to Nanofabricated Designs**
MM 25.1–25.4	Tue	10:15–11:30	BAR 205	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Structure and Deformation I**
MM 26.1–26.5	Tue	10:15–11:30	IFW A	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - NMR studies**
MM 27.1–27.4	Tue	10:15–11:15	IFW B	**Computational Materials Modelling - Electronic structure approaches**
MM 28.1–28.6	Tue	10:15–11:45	IFW D	**Transport I - atomic transport**
MM 29.1–29.9	Tue	10:30–13:00	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - III**
MM 30.1–30.5	Tue	11:45–13:00	BAR 205	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Structure and Deformation II**
MM 31.1–31.4	Tue	11:45–12:45	IFW A	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - Structure - property relationships I**
MM 32.1–32.6	Tue	11:45–13:15	IFW B	**Microstructure and Phase Transformations - detection methods**
MM 33.1–33.4	Tue	12:00–13:00	IFW D	**Transport II - charge transport**
MM 34.1–34.42	Tue	18:30–20:30	P4	**Poster session II**
MM 35.1–35.12	Tue	18:30–20:30	P2-OG4	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond**
MM 36.1–36.1	Wed	9:30–10:00	BAR 205	**Invited talk Curtin**
MM 37.1–37.5	Wed	10:15–11:45	BAR 205	**Topical session: Data driven materials design - defect engineering**
MM 38.1–38.5	Wed	10:15–11:30	IFW A	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - defects, structure and thermodynamics**
MM 39.1–39.4	Wed	10:15–11:15	IFW B	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Structure and deformation III**
MM 40.1–40.4	Wed	10:15–11:15	IFW D	**Transport III - thermal transport**
MM 41.1–41.9	Wed	10:30–13:00	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - IV**
MM 42.1–42.4	Wed	12:00–13:15	BAR 205	**Topical session: Data driven materials design - high throughput**
MM 43.1–43.4	Wed	11:45–12:45	IFW A	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - hybrid and structured electrolytes**
MM 44.1–44.6	Wed	11:30–13:15	IFW B	**Topical session: Interface-Controlled Microstructures: Mechanical Properties and Mechano-Chemical Coupling - Nanoporous materials**
MM 45.1–45.1	Wed	15:00–15:30	BAR 205	**Invited talk Kargl**
MM 46.1–46.13	Wed	15:00–18:15	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - V**

MM 47.1–47.4	Wed	15:45–17:00	BAR 205	**Topical session: Data driven materials design - ab initio materials design**
MM 48.1–48.5	Wed	15:45–17:15	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses III - plasticity and hetererogeneities**
MM 49.1–49.4	Wed	15:45–16:45	IFW B	**Microstructure and Phase Transformations - shape memory alloys**
MM 50.1–50.4	Wed	15:45–16:45	IFW D	**SYLI: Symposium Interfacial Challenges in Solid-State Li Ion Batteries - Structure - property relationships II**
MM 51.1–51.3	Wed	17:15–18:00	BAR 205	**Topical session: Data driven materials design - databases**
MM 52.1–52.4	Wed	17:00–18:00	IFW B	**Microstructure and Phase Transformations - phase stability**
MM 53.1–53.1	Wed	18:30–19:00	BAR 205	**Invited talk Maier-Kiener**
MM 54.1–54.1	Thu	9:30–10:00	BAR 205	**Invited talk Urban**
MM 55.1–55.6	Thu	10:15–11:45	BAR 205	**Topical session: Data driven materials design - structure maps**
MM 56.1–56.4	Thu	10:15–11:30	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses - kinetic transitions**
MM 57.1–57.4	Thu	10:15–11:15	IFW B	**Microstructure and Phase Transformations - transformation kinetics**
MM 58.1–58.6	Thu	10:15–11:45	IFW D	**Nanomaterials I**
MM 59.1–59.13	Thu	10:30–13:45	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - VI**
MM 60.1–60.5	Thu	12:00–13:15	BAR 205	**Topical session: Data driven materials design - machine learning**
MM 61.1–61.5	Thu	11:45–13:15	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses V - dynamical response**
MM 62.1–62.5	Thu	11:45–13:00	IFW B	**Microstructure and Phase Transformations - nucleation kinetics and pressure effects**
MM 63.1–63.6	Thu	12:00–13:30	IFW D	**Nanomaterials II**
MM 64.1–64.1	Thu	15:00–15:30	BAR 205	**Invited talk Durst**
MM 65.1–65.3	Thu	15:45–16:30	BAR 205	**Topical session: Data driven materials design - uncertainity approaches**
MM 66.1–66.5	Thu	15:45–17:15	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses VI - mechanical properties**
MM 67.1–67.4	Thu	15:45–16:45	IFW D	**Mechanical Properties I**
MM 68.1–68.9	Thu	16:00–18:30	GER 38	**Electronic Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond - VII**
MM 69.1–69.6	Thu	17:30–19:00	IFW A	**Topical session: Dynamics, relaxation and deformation in deeply supercooled metallic liquids and glasses VII - thermodynamics and structure**
MM 70.1–70.5	Thu	17:00–18:15	IFW D	**Mechanical Properties II**
MM 71.1–71.5	Fri	10:30–13:00	HSZ 02	**Frontiers of Electronic-Structure Theory: New Concepts and Developments in Density Functional Theory and Beyond**

Annual General Meeting of the Metal and Material Physics Division

Wednesday 19:30–20:30 BAR 205