

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

Rainer Birringer
Universität des Saarlandes
Technische Physik, Gebäude D2 2
D-66041 Saarbrücken
r.birringer@nano.uni-saarland.de

Overview of Invited Talks and Sessions

(lecture rooms H 0111, H 0107 and H 1058; Poster B)

Invited Talks

MM 1.1	Mon	9:30–10:00	H 1058	Simple ways to complex nanowires and their application — •RAINER ADELUNG, MADY ELBAHRI, SEID JEBRIL, SEBASTIAN WILLE, MICHAEL SCHARNBERG
MM 2.1	Mon	10:15–10:45	H 1058	Phase Formation in Multicomponent Monotectic Aluminum Alloys — DJORDJE MIRKOVIĆ, JOACHIM GRÖBNER, •RAINER SCHMID-FETZER
MM 8.1	Mon	14:00–14:30	H 1058	Microstructure tomography - an essential tool to understand 3D microstructure and local degradation effects — •FRANK MUECKLICH
MM 9.1	Mon	14:45–15:15	H 1058	Atomic Diffusion in Liquid Alloys — •ANDREAS MEYER, SURESH MAVILA CHATHOTH, WINFRIED PETRY, TOBIAS UNRUH, MAREK KOZA
MM 15.1	Tue	9:30–10:00	H 1058	Phase Transformations in Thin Films and Near-Surface Regions: Stimulation and Application — •DIRK CARL MEYER
MM 18.1	Tue	10:15–10:45	H 0107	Local Probing of Magnetic Properties by Electron Microscopy — •JOSEF ZWECK
MM 19.1	Tue	11:30–12:00	H 0107	Atom Probe Characterization of Magnetic Thin Film Structures — •DAVID LARSON
MM 19.2	Tue	12:00–12:30	H 0107	Thermal stability and reaction of GMR sensor materials — •VITALIY VOVK, CONSTANTIN ENE, GUIDO SCHMITZ
MM 19.3	Tue	12:30–13:00	H 0107	Solid state reactions at the interface of Heusler alloy films — •HANS-JOACHIM ELMERS, ANDRES CONCA, TOBIAS EICHHORN, ANDREI GLOSKOVSKII, KERSTIN HILD, GERHARD JAKOB, MARTIN JOURDAN, MICHAEL KALLMAYER
MM 22.1	Tue	14:00–14:30	H 1058	Grain boundary embrittlement and cohesion enhancement in copper — •ANTHONY PAXTON, ALEXANDER LOZOVOL, RAINER SCHWEINFEST, MICHAEL FINNIS
MM 24.1	Wed	14:00–14:30	H 1058	Nanoscaled domain structures and magnetization processes in thin films — •VOLKER NEU, CRISTINA BRAN, FELIX FLEISCHHAUER, AARTI SINGH, ULRIKE WOLFF, LUDWIG SCHULTZ
MM 24.2	Wed	14:30–15:00	H 1058	Coherent Control of Spin Torque Dynamics — •HANS WERNER SCHUMACHER, SANTIAGO SERRANO-GUISAN, KARSTEN ROTT, GÜNTER REISS, JÜRGEN LANGER, BERTHOLD OCKER
MM 24.3	Wed	15:00–15:30	H 1058	KeV-He-ion bombardment induced magnetic modifications and patterning of magnetic thin film systems — •ARNO EHRESMANN
MM 25.1	Wed	16:00–16:30	H 1058	Magnetic thin film materials tailored by ion irradiation — •JÜRGEN FASSBENDER
MM 32.1	Thu	9:30–10:00	H 1058	Magnetic Shape Memory Alloy Films: What is different to bulk materials? — •SEBASTIAN FÄHLER
MM 33.1	Thu	10:15–10:45	H 1058	Hydrogen Physisorption in MOFs — •BARBARA PANELLA, MICHAEL HIRSCHER
MM 34.1	Thu	11:40–12:10	H 1058	The Interaction of Hydrogen with Metal Surfaces: Molecular Precursors, Chemisorbed Atoms and Subsurface States — •KLAUS CHRISTMANN
MM 39.1	Thu	14:00–14:30	H 1058	Hydrogen Chemisorption to Clusters — •GERD GANTEFOER

MM 39.2	Thu	14:30–15:00	H 1058	Hydrogen Storage in Light Weight Metal Hydrides: Mg-based Reactive Hydride Composites — ●M. DORNHEIM, U. BÖSENBERG, C. PISTIDDA, G. BARKHORDARIAN, J. BELLOSTA V. COLBE, R. BORMANN
MM 40.1	Thu	16:30–17:00	H 1058	Complex Metal Hydrides — ●MICHAEL FELDERHOFF

Sessions

MM 1.1–1.1	Mon	9:30–10:00	H 1058	HV Adelung
MM 2.1–2.3	Mon	10:15–11:15	H 1058	SYM Phase Transformations in Metallic Melts I
MM 3.1–3.3	Mon	11:45–12:30	H 1058	SYM Phase Transformations in Metallic Melts II
MM 4.1–4.5	Mon	10:15–11:30	H 0107	Nanostructured Materials I
MM 5.1–5.4	Mon	12:00–13:00	H 0107	Nanostructured Materials II
MM 6.1–6.5	Mon	10:15–11:30	H 0111	Diffusion I
MM 7.1–7.4	Mon	12:00–13:00	H 0111	Diffusion II
MM 8.1–8.1	Mon	14:00–14:30	H 1058	HV Mücklich
MM 9.1–9.4	Mon	14:45–16:00	H 1058	SYM Phase Transformations in Metallic Melts III
MM 10.1–10.6	Mon	16:30–18:00	H 1058	SYM Phase Transformations in Metallic Melts IV
MM 11.1–11.6	Mon	14:45–16:15	H 0107	Nanostructured Materials III
MM 12.1–12.6	Mon	16:45–18:15	H 0107	Nanostructured Materials IV
MM 13.1–13.6	Mon	14:45–16:15	H 0111	Growth
MM 14.1–14.7	Mon	16:45–18:30	H 0111	Electronic Properties I
MM 15.1–15.1	Tue	9:30–10:00	H 1058	HV Meyer
MM 16.1–16.4	Tue	10:15–11:15	H 1058	SYM Phase Transformations in Metallic Melts V
MM 17.1–17.6	Tue	11:30–13:00	H 1058	SYM Phase Transformations in Metallic Melts VI
MM 18.1–18.3	Tue	10:15–11:15	H 0107	SYM Thin Film Magnetic Materials: Microstructure, Reaction and Magnetic Coupling I
MM 19.1–19.3	Tue	11:30–13:00	H 0107	SYM Thin Film Magnetic Materials: Microstructure, Reaction and Magnetic Coupling II
MM 20.1–20.5	Tue	10:15–11:30	H 0111	Electronic Properties II
MM 21.1–21.5	Tue	11:45–13:00	H 0111	Quasicrystals
MM 22.1–22.1	Tue	14:00–14:30	H 1058	HV Paxton
MM 23.1–23.52	Tue	14:45–18:00	Poster B	Poster session
MM 24.1–24.3	Wed	14:00–15:30	H 1058	SYM Thin Film Magnetic Materials: Microstructure, Reaction and Magnetic Coupling III
MM 25.1–25.5	Wed	16:00–17:50	H 1058	SYM Thin Film Magnetic Materials: Microstructure, Reaction and Magnetic Coupling IV
MM 26.1–26.5	Wed	14:00–15:15	H 0107	Liquid and Amorphous Metals I
MM 27.1–27.5	Wed	15:45–17:00	H 0107	Liquid and Amorphous Metals II
MM 28.1–28.3	Wed	17:30–18:15	H 0107	Intermetallic Phases I
MM 29.1–29.5	Wed	14:00–15:15	H 0111	Mechanical Properties I
MM 30.1–30.5	Wed	15:45–17:00	H 0111	Mechanical Properties II
MM 31.1–31.4	Wed	17:30–18:30	H 0111	Mechanical Properties III
MM 32.1–32.1	Thu	9:30–10:00	H 1058	HV Fähler
MM 33.1–33.3	Thu	10:15–11:25	H 1058	SYM Hydrogen in Materials: New Developments I
MM 34.1–34.3	Thu	11:40–12:50	H 1058	SYM Hydrogen in Materials: New Developments II
MM 35.1–35.4	Thu	10:15–11:15	H 0107	Phase Transitions I
MM 36.1–36.5	Thu	11:45–13:00	H 0107	Phase Transitions II
MM 37.1–37.4	Thu	10:15–11:15	H 0111	Intermetallic Phases II
MM 38.1–38.5	Thu	11:45–13:00	H 0111	Nanostructured Materials V
MM 39.1–39.5	Thu	14:00–16:00	H 1058	SYM Hydrogen in Materials: New Developments III
MM 40.1–40.4	Thu	16:30–18:00	H 1058	SYM Hydrogen in Materials: New Developments IV
MM 41.1–41.19	Thu	18:00–20:00	Poster B	Poster SYM Hydrogen in Materials: New Developments
MM 42.1–42.6	Thu	14:00–15:30	H 0107	Phase Transitions III
MM 43.1–43.5	Thu	16:00–17:15	H 0107	Phase Transitions IV
MM 44.1–44.2	Thu	14:00–14:30	H 0111	Bioinspired Materials
MM 45.1–45.4	Thu	15:00–16:00	H 0111	Nanostructured Materials VI
MM 46.1–46.7	Thu	16:30–18:15	H 0111	Interfaces
MM 47.1–47.5	Fri	10:15–11:55	H 1058	SYM Hydrogen in Materials: New Developments V
MM 48.1–48.4	Fri	10:15–11:15	H 0107	Phase Transitions V
MM 49.1–49.4	Fri	11:45–12:45	H 0107	Phase Transitions VI

MM 50.1–50.4	Fri	10:15–11:15	H 0111	Materials Design I
MM 51.1–51.5	Fri	11:45–13:00	H 0111	Materials Design II

Symposium Hydrogen in materials: new developments

The interaction of Hydrogen with Materials as an important field of research has attracted new interest due to the greenhouse effect and the possibility to utilise hydrogen as an environment-friendly energy carrier. For mobile applications, despite major efforts a save and cost-efficient hydrogen storage system is not yet found. Nature offers two principle storage mechanisms: i) Adsorption of hydrogen molecules on surfaces (physisorption). ii) Hydrogen atoms dissolved or forming chemical compounds (chemisorption). Presently, both mechanisms are intensely investigated. Thereby novel materials are developed and their microstructure is improved by nanotechnological methods. It appears that for storage containment, distribution and handling the question of hydrogen embrittlement of structural materials is a key problem.

This Symposium will, therefore, focus on the following recent developments: (i) the interaction of hydrogen with surfaces, (ii) hydrogen interaction with microstructure, (iii) hydrogen in thin films, multi-layers, clusters and nano-powders, (iv) new light-weight, chemical and complex hydrides, and (v) hydrogen embrittlement of structural materials. The Symposium addresses both theory and experiment.

Organizers:

PD Dr. Astrid Pundt

Institut für Materialphysik, Universität Göttingen, Friedrich-Hund-Platz 1, D-37077 Göttingen

Dr. Michael Hirscher

Max-Planck-Institut für Metallforschung, Heisenbergstraße 3, D-70569 Stuttgart

Prof. Dr. Rüdiger Bormann

Institut für Werkstofforschung, GKSS-Forschungszentrum Geesthacht GmbH, Max-Planck-Straße 1, D-21502 Geesthacht

Symposium Phase Transformations in Metallic Melts

Abschlusskolloquium des DFG Schwerpunktprogramms SPP1120 Phasenumwandlungen in mehrkomponentigen Schmelzen.

Organizer:

Prof. Dr. Dieter M. Herlach

Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt e.V., Linder Höhe, D-51147 Köln

Symposium Thin film magnetic materials: microstructure, reaction and magnetic coupling

With this symposium we will focus on the microstructure-properties relationship of ultra thin magnetic films utilized in state-of-the-art magnetoelectronic devices. Key questions in that respect are directed to the role of interfacial roughness and microstructural constraints due to chemical ordering and interdiffusion on magnetic, transport and tunnelling properties. Which innovative processes may be used to optimise these parameters?

Required by high storage densities or by the limited range of magnetic coupling, the typical structural scale of modern devices ranges down to a few nanometers. Therefore, these devices are destabilised by dominant interfacial contributions. How does the microstructure of such nano-scaled systems react? The symposium will highlight this field in several talks by leading experts.

Organizers:

Prof. Dr. Guido Schmitz

Institut für Materialphysik, Westfälische Wilhelms-Universität Münster, Wilhelm-Klemm-Straße 10, D-48149 Münster

Prof. Dr. Andreas Hütten

Physik, Universität Bielefeld, Postfach 100 131, D-33501 Bielefeld

Symposium Modern Developments in Multiphysics Materials Simulations (SYMS)

offered jointly by the division O, HL and MM.

Thursday, February 28. For programm, see SYMS.

Symposium Ferroic materials and novel functionalities (SYNF)

offered jointly by the division MA, O, MM, DF, DS, HL, and TT

Tuesday, February 26. For programm, see SYNF.

Annual General Meeting of the Metal and Material Physics Division

Tuesday 18:00–19:00 H 0111

- Report of the chairman of the Metal and Material Physics Division.
- Invited talks and symposia for the next spring meeting 2009.
- Other topics.