
CONGRESS & EXHIBITION

ICFSMA 2026

8th International Conference on
Ferromagnetic Shape Memory Alloys

31 Aug - 03 Sep 2026

Kassel

CHAIRPERSON



Prof. Dr.-Ing. Thomas Niendorf
University of Kassel



Chairperson



Prof. Dr.-Ing. Thomas Niendorf
University of Kassel

Vice Chairpersons



Dr. Markus Gruner
University of Duisburg-Essen



Dr. Franziska Scheibel
Technical University of Darmstadt

Program

31 Aug 2026 (Mon)

Audimax

General

12:45 PM General Event Item

Opening of ICFSMA

Niendorf, T. (Speaker)

University of Kassel (DE)

P.1: Plenary Talk I

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf (I)*

1:00 PM Plenary Lecture

Tunable High Contrast Changes in Transport Properties of Metamagnetic Phase Change Materials

Karaman, I. (Speaker)¹; Torun, S.¹; Salas, D.²; Sarıtürk, D.¹; Arróyave, R.¹

¹Texas A&M University, College Station, (US);

²Universitat de les Illes Balears, Palma de Mallorca (ES)

G.1: New materials and materials design Session 1

Session Chairs: *Philipp Krooß (Universität Kassel)*

1:40 PM Invited Lecture

Antiferromagnetism of Martensite in Co₂Cr(Ga,Si) Alloys With Reentrant Martensitic Transformation Behavior

Xu, X. (Speaker)¹; Omori, T.¹; Kanomata, T.²; Kainuma, R.¹

¹Tohoku University, Sendai (JP); ²Tohoku Gakuin University, Sendai (JP)

G.2: New materials and materials design Session 2

Session Chairs: *Dr. Anna Wojcik (AGH University of Krakow)*

2:30 PM Lecture

Perspectives on Ni-Fe-Ga as a Magnetic Shape Memory Alloy

Straka, L. (Speaker)¹; Heczko, O.¹; Nulandaya, L.¹; Salazar, D.²; Varga, R.³; Veřtát, P.¹

¹Czech Academy of Sciences, Prague (CZ);

²BCMaterials, Leioa (ES); ³RVactuators Ltd., Dolní Břežany (CZ)

2:50 PM Lecture

Composites Filled-in With Ni-Mn-Ga Particles Exhibiting Giant Magnetostrain, Magnetoelectric, and Thermo-Electric Effects

Chernenko, V. (Speaker)

University of the Basque Country, Bilbao (ES)

3:10 PM Lecture

Development of Cu-Doped Ni-Mn-Ga-Based Alloy-Polymer Composites

Salas, D. (Speaker)¹; Corró, M.L.¹; Gutiérrez, J.²; Kustov, B.¹; Lázzpita, P.²; Pons, J.¹; Río-López, N.A.²; Ríos, M.³; Santamarta, R.¹; Seguí, C.¹; Sánchez-Alarcos, V.⁴; Torrens-Serra, J.¹; Vaquero-Crespí, J.M.¹

¹University of the Balearic Islands, Palma (ES);

²University of the Basque Country, Bilbao (ES);

³BCMaterials, Bilbao (ES); ⁴Public University of Navarra, Pamplona (ES)

Poster Pitch Session

4:00 PM Poster Pitch Presentation #C-16

Martensitic and magnetic transitions in a compositionally graded Ni-Mn-Ga with Mn deficiency

Moskvina, V. (Speaker); Čapek, J.; Rameš, M.; Musilienko, D.; Veřtát, P.; Straka, L.; Heczko, O. Czech Academy of Sciences, Prague (CZ)

4:03 PM Poster Pitch Presentation #C-496

On the Composition and Magnetic Field Dependence of the Transformation Entropy in Shape Memory Alloys

Beke, D.L.; Azim, A. (Speaker) University of Debrecen (HU)

4:06 PM Poster Pitch Presentation #C-22

Pulsed-Field Magnetocaloric Response of Additively Manufactured Ni-Mn-Ga Alloy by Laser Powder Bed Fusion

Ghotbi Varzaneh, A. (Speaker) Karlsruhe Institute of Technology (KIT) (DE)

4:09 PM Poster Pitch Presentation #H-24

Additive Manufacturing of Magnetic Shape Memory Heusler Alloys for Multicaloric Applications

Teinor, N.N. (Speaker)¹; Guder, A.²; Puy, J.¹; Lauhoff, C.²; Gutfleisch, O.¹; Niendorf, T.²; Scheibel, F.¹

¹Technical University of Darmstadt (DE);

²University of Kassel (DE)

4:12 PM Poster Pitch Presentation #G-31

Effect of fabrication method on superelastic and rubber-like effects in Fe-based shape memory alloys

Wojcik, A. (Speaker) AGH University of Science and Technology Krakow, Kraków (PL)

4:15 PM Poster Pitch Presentation #F-39

Multiscale Phase-Field Modeling of Magnetic Shape Memory Alloys: From Microstructure to System-Level Behavior

Periyasamy, P. (Speaker); Kiefer, B.; El Khatib, O. TU Bergakademie Freiberg (DE)

4:18 PM Poster Pitch Presentation #494

Poster Pitch Presentations

4:21 PM Poster Pitch Presentation #H-502

On the Effect of Fe-Doping on Crack Formation and Transformation Temperatures in Additively Manufactured Ni-Mn-Sn Heusler Magnetic Shape Memory Alloy

Guder, A. (Speaker)¹; Gutfleisch, O.²; Horn, M.¹; Lauhoff, C.¹; Niendorf, T.¹; Scheibel, F.²; Teinor, N.N.²

¹University of Kassel (DE); ²Technical University of Darmstadt (DE)

4:24 PM Poster Pitch Presentation #H-501

Tailoring the Superelastic Properties of Co-Ni-Ga Heusler-Type Shape Memory Alloy Processed by Laser Beam Directed Energy Deposition through Powder Feed Rate Variation and Post-Process Heat Treatments

Horn, M. (Speaker); Aqeel, H.B.; Guder, A.; Stredak, F.; Lauhoff, C.; Vollmer, M.; Böhm, S.; Niendorf, T.

University of Kassel (DE)

4:27 PM Poster Pitch Presentation #H-17

Analysis of crystal structure of Ni-Mn-Ga elements using micro X-ray diffraction

Böhm, A. (Speaker); Beuven, N.V.; Drossel, W.-G.; Pagel, K.

Fraunhofer Institute for Machine Tools and Forming Technology IWU, Dresden (DE)

Foyer/Extern

Breaks

2:10 PM - 2:30 PM

Coffee Break

3:30 PM - 4:00 PM

Coffee Break

Networking opportunity

4:30 PM - 8:00 PM

Poster Session & BBQ Evening

01 Sep 2026 (Tue)

Audimax

General

9:30 AM General Event Item

Opening of the Second Day of ICFSMA 2026

Niendorf, T. (Speaker)
University of Kassel (DE)

A.1: Applications and systems Session 1

Session Chairs: Philipp Krooß (Universität Kassel)

9:35 AM Invited Lecture

Exploring applications of MSM in adaptive human-machine interfaces

Hutter, M. (Speaker); Fuchs, L.; Schmid, P.; Maier, T.; Gundelsweiler, B.
University of Stuttgart (DE)

10:05 AM Lecture

Effect of pre-strain on transformation behavior and recovery stress stability in Fe-based shape memory alloys for structural prestressing applications
Bauer, A. (Speaker)¹; Hilscher, M.²; Vollmer, M.¹; Ghafoori, E.³; Niendorf, T.¹
¹University of Kassel (DE); ²Leibniz University Hannover (DE)

10:25 AM Lecture

Energy-efficient MSMA-based push-pull linear actuator for industrial applications
Courant, R. (Speaker)¹; Buhl, N.²

¹TU Berlin (DE); ²TU Berlin (DE)

10:45 AM Lecture

Upscaling of Thermomagnetic Generators by Mechanical Coupling

Nie, S. (Speaker)¹; Joseph, J.¹; Kohl, M.¹; Miki, H.²; Ohtsuka, M.³; Wischnewski, M.¹

¹Karlsruhe Institute of Technology (KIT) (DE); ²Ishinomaki Senshu University (JP); ³Tohoku University, Sendai (JP)

11:05 AM Lecture

Toward Next-Generation Smart Fluids by Magnetic Shape Memory Heuslers

Takhsha, M. (Speaker)¹; Predeina, A.²; Okada, K.³; Nasl, L.¹; Serantes, D.⁴; Casoli, F.¹; Chubykalo-Fesenko, O.⁵; Moroni, L.²; Uhlíř, V.⁶; Albertini, F.¹

¹MEM-CNR, Parma (IT); ²MERLN Institute for Technology - Inspired Regenerative Medicine, Maastricht (NL); ³Saitama Institute of Technology, Fukaya (JP); ⁴Instituto de Materiais (IMATUS), Galicia (ES); ⁵Instituto de Ciencia de Materiales, Madrid (ES); ⁶CEITEC BUT, Brno (CZ)

Foyer/Extern

Breaks

11:25 AM - 12:30 PM

Lunch Break

Networking opportunity

12:30 PM - 8:00 PM

Excursion to Isabellenhütte Heusler GmbH & Co. KG

02 Sep 2026 (Wed)

Audimax

General

9:20 AM General Event Item

Opening of the Third Day of ICFSMA 2026
Niendorf, T. (Speaker)

University of Kassel (DE)

P.2: Plenary Talk II

Session Chairs: *Dr. Markus E. Gruner ()*

9:25 AM Plenary Lecture

Strain Glass Alloys –From Physics, Properties to Applications

Ren, X. (Speaker)

Yongjiang Laboratory, Ningbo (CN)

B.1: Basic phenomena and theory Session 1

Session Chairs: *Prof. Dr.-Ing. Robert Chulist (AGH University of Krakow)*

10:05 AM Invited Lecture

The duality of modulation and nanotwinning in Ni-Mn-Ga magnetic shape memory alloy with unique lattice instability

Veřtát, P. (Speaker)¹; Straka, L.¹; Seiner, H.²; Klicpera, M.³; Zelený, M.⁴; Luštinec, J.¹; Fabelo, O.⁵; Cañadillas-Delgado, L.⁵; Heczko, O.¹

¹FZU - Institute of Physics of the Czech Academy of Sciences, Prague (CZ); ²Institute of Thermomechanics of the Czech Academy of Sciences, Prague (CZ); ³Charles University, Prague (CZ); ⁴Brno University of Technology (CZ); ⁵Institut Laue-Langevin, Grenoble (FR)

B.2: Basic phenomena and theory Session 2

Session Chairs: *Dr. Oleg Heczko ()*

11:15 AM Lecture

Interaction of Antiphase Boundaries with Magnetic Domain Walls and Mobile Twin Boundaries in Ni-Mn-Ga

Heczko, O. (Speaker)¹; Chlan, V.²; Fekete, L.¹; Seiner, H.¹; Straka, L.¹; Zemen, J.¹

¹Czech Academy of Sciences, Prague (CZ); ²Faculty of Mathematics and Physics, Charles University, Prague (CZ)

11:35 AM Lecture

Chemical Bonding Analysis of Conventional and All-d-Metal Heusler Alloys: the Hidden Stabilizing Role of s Orbitals

Wang, Y. (Speaker)¹; Dronskowski, R.²; Song, W.¹

¹University of Kassel (DE); ²RWTH Aachen University (DE)

11:55 AM Lecture

High resolution digital image correlation of localized twinning behaviour of MSMA

Zou, X. (Speaker); Courant, R.; Maas, J.
TU Berlin (DE)

B.3: Basic phenomena and theory Session 3

Session Chairs: *Dr. Hanuš Seiner ()*

1:25 PM Invited Lecture

Jelly-like lattice with extremely low interface energy governing structural modulation and intermartensitic transformations in Ni-Mn-Ga-based alloys

Chulist, R. (Speaker)¹; Heczko, M.¹; Li, B.²; Maziarz, W.³; Schell, N.⁴; Szweczyk, A.¹; Wojcik, A.¹

¹AGH University of Science and Technology Krakow (PL); ²Iowa State University, Ames, (US); ³Institute of Metallurgy and Materials Science PAS, Krakow (PL); ⁴Helmholtz-Zentrum Hereon Geesthacht (DE)

1:55 PM Lecture

Open Problems in Strain Compatibility in Magnetic Shape Memory Alloys

Seiner, H. (Speaker)¹; Sedlak, P.¹; Samochvalova, N.V.²; Straka, L.³; Heczko, O.³

¹Institute of Thermomechanics, Czech Academy of Sciences, Prague (CZ); ²Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague (CZ); ³FZU - Institute of Physics, Czech Academy of Sciences, Prague (CZ)

2:15 PM Lecture

Shear instability in 10M Ni-Mn-Ga martensite and its relationship to lattice modulation

Sedlák, P. (Speaker)¹; Grabec, T.¹; Heczko, O.²; Repčák, K.¹; Seiner, H.¹; Stoklasová, P.¹; Straka, L.²; Veřtát, P.²

¹Institute of Thermomechanics, Czech Academy of Sciences, Prague, Czech Republic (CZ); ²FZU - Institute of Physics, Czech Academy of Sciences, Prague, Czech Republic (CZ)

F.1: Modelling and simulation from atomic to macro scale Session 1

Session Chairs: *Prof. Dr. Volodymyr Chernenko ()*

3:05 PM Invited Lecture

The effect on electron localization on elastic properties of long-period commensurate structures of Ni2MnGa modulated martensite

Zelený, M. (Speaker)¹; Straka, L.²; Veřtát, P.²

¹Brno University of Technology (CZ); ²FZU - Institute of Physics of the Czech Academy of Sciences, Prague (CZ)

3:35 PM Lecture

Structure-Property Relations in MSMAs: A Multiscale Modeling Approach

Kiefer, B. (Speaker); El Khatib, O.; Jeeja, A.B.; Periyasamy, P.

TU Bergakademie Freiberg (DE)

3:55 PM Lecture

The impact of magnetic ordering on lattice reorientation in Mn-excess Ni-Mn-Ga martensites: ab initio study
Heczko, M. (Speaker)¹; Zelený, M.²; Šesták, P.²; Chulist, R.¹

¹AGH University of Science and Technology Krakow (PL); ²Brno University of Technology (CZ)

4:15 PM Lecture

Modelling the martensitic transformation in Ni-Mn-based Heusler compounds with machine-learning force-fields

Gruner, M. (Speaker); Bruckhoff, M.; Miroshkina, O.

University of Duisburg-Essen (DE)

4:35 PM Lecture

Machine-learning Interatomic Potentials for Nanotwinning Energetics in Ni-Mn-Ga: from DFT to Large-scale Simulations

Sestak, P. (Speaker)¹; Jaroš, P.²; Černý, M.¹; Zelený, M.¹; Sedláč, P.²

¹Brno University of Technology (CZ); ²Institute of Thermomechanics of the CAS, Prague (CZ)

Foyer/Extern

Breaks

10:35 AM - 10:45 AM

Group Picture

10:45 AM - 11:15 AM

Coffee Break

12:15 PM - 1:25 PM

Lunch Break

2:35 PM - 3:05 PM

Coffee Break

Networking opportunity

7:00 PM - 10:00 PM

Conference Dinner @ Ristorante Il Convento

03 Sep 2026 (Thu)

Audimax

General

9:20 AM General Event Item

Opening of the Fourth Day of ICFSMA 2026

Niendorf, T. (Speaker)

University of Kassel (DE)

3:05 PM General Event Item

Closing Remarks of ICFSMA 2026

P.3: Plenary Talk III

9:25 AM Plenary Lecture

Multifunctional Heuslers: New Perspectives in Energy and Biomedicine

Albertini, F. (Speaker)

National Research Council, Parma (IT)

P.4: Plenary Talk IV

10:05 AM Plenary Lecture

Dynamics of reversible martensitic transformations

Lünser, K. (Speaker)

University of Duisburg-Essen (DE)

I.1: Strain glass and related phenomena Session 1

11:15 AM Lecture

From Puzzling Phenomena to Systematic Design: A New Classification of Strain Glass in Shape Memory Alloys

Ji, Y. (Speaker)¹; Ren, X.²; Xu, Z.²; Wang, Y.¹; Liu, C.³

¹Xi'an Jiaotong University (CN); ²Yongjiang Laboratory, Ningbo (CN); ³Sichuan University, Chengdou (CN)

11:35 AM Lecture

Ultrastrong Strain Glass Alloy with Polymer-Like Flexibility

Xu, Z. (Speaker)

Yongjiang Laboratory, Ningbo (CN)

11:55 AM Lecture

Boson-peak-anomaly caused by transverse phonon softening in strain glass

Ren, S. (Speaker)

Yongjiang Laboratory, Ningbo (CN)

H.1: Processing - Structure - Performance Relationships Session 1

1:15 PM Invited Lecture

Microstructure and Mechanical Properties of L-DED Processed Fe-36Mn-9Al-7Ni (wt%) Superelastic Shape Memory Alloy

Park, J. (Speaker)¹; Jung, H.¹; Kim, D.²; Lee, W.¹

¹Pusan National University, Busan (KR);

²Yeungnam University, Gyeongsan-si (KR)

1:45 PM Lecture

Effect of solidification rate on martensitic transformation behavior of Cu-doped Ni-Mn-Ga metamagnetic shape memory ribbons

Lázpita, P. (Speaker)¹; Gutiérrez, J.¹; Mérida,

D.¹; Pinillos, M.²; Pons, J.³; Río-López, N.A.¹;

Ríos, M.²; Salas, D.³; Santamarta, R.³; Torrens-

Serra, J.³; Villate, N.¹

¹University of the Basque Country UPV/EHU,

Leioa (ES); ²BCMaterials, Leioa (ES);

³University of the Balearic Islands, Palma (ES)

2:05 PM Lecture

Martensitic transformation and magnetocaloric properties of Fe-substituted Ni-Co-Mn-Ti all-d-metal melt-spun ribbons

Ríos, M.¹; Villate, N.²; Belo, J.H.³; Varzaneh,

A.G.⁴; Lázpita, P.²; Salazar, D.¹; Chernenko, V. (Speaker)¹

¹BCMaterials, Leioa (ES); ²University of the

Basque Country, Leioa (ES); ³University of

Porto (PT); ⁴Karlsruhe Institute of Technology (DE)

2:25 PM Lecture

Study of Different Types of Precipitates in All-d-Metal Ni-Mn-Ti Magnetic Shape Memory Alloys

Vaquero-Crespí, J.M. (Speaker); Torrens-Serra, J.; Salas, D.; Pons, J.; Santamarta, R. Universitat de les Illes Balears, Palma (ES)

2:45 PM Lecture

First-Order Magnetostructural Phase Transition in Ni-Mn-Sn Heusler Alloy Tailored by Microstructure and Interface Engineering

Puy, J. (Speaker)¹; Stratmann, N.²; Shokri, H.³; Bruder, E.¹; Gökce, B.³; Gutfleisch, O.¹; Ziefuss, A.²; Scheibel, F.¹

¹Technische Universität Darmstadt (DE);

²Universität Duisburg-Essen (DE); ³Bergische Universität Wuppertal (DE)

Foyer/Extern

Breaks

10:45 AM - 11:15 AM

Coffee Break

12:15 PM - 1:15 PM

Lunch Break

Poster

C: Correlation between magnetic and martensitic transformations

C-16 Poster Pitch Presentation

Martensitic and magnetic transitions in a compositionally graded Ni-Mn-Ga with Mn deficiency

Moskvina, V. (Speaker); Čapek, J.; Rameš, M.; Musiienko, D.; Veřtát, P.; Straka, L.; Heczko, O.

C-22 Poster Pitch Presentation

Pulsed-Field Magnetocaloric Response of Additively Manufactured Ni-Mn-Ga Alloy by Laser Powder Bed Fusion

Ghotbi Varzaneh, A. (Speaker)

C-496 Poster Pitch Presentation

On the Composition and Magnetic Field Dependence of the Transformation Entropy in Shape Memory Alloys

Beke, D.L.; A. Azim, A. (Speaker)

F: Modelling and simulation from atomic to macro scale

F-39 Poster Pitch Presentation

Multiscale Phase-Field Modeling of Magnetic Shape Memory Alloys: From Microstructure to System-Level Behavior
Periyasamy, P. (Speaker); Kiefer, B.; El Khatib, O.

G: New materials and materials design

G-31 Poster Pitch Presentation

Effect of fabrication method on superelastic and rubber-like effects in Fe-based shape memory alloys

Wojcik, A. (Speaker)

H: Processing - Structure - Performance Relationships

H-17 Poster Pitch Presentation

Analysis of crystal structure of Ni-Mn-Ga elements using micro X-ray diffraction

Böhm, A. (Speaker); Beuven, N.V.; Drossel, W.-G.; Pagel, K.

H-24 Poster Pitch Presentation

Additive Manufacturing of Magnetic Shape Memory Heusler Alloys for Multicaloric Applications

Teinor, N.N. (Speaker)¹; Guder, A.²; Puy, J.¹; Lauhoff, C.²; Gutfleisch, O.¹; Niendorf, T.²; Scheibel, F.¹

H-501 Poster Pitch Presentation

Tailoring the Superelastic Properties of Co-Ni-Ga Heusler-Type Shape Memory Alloy Processed by Laser Beam Directed Energy Deposition through Powder Feed Rate Variation and Post-Process Heat Treatments

Horn, M. (Speaker); Aqeel, H.B.; Guder, A.; Stredak, F.; Lauhoff, C.; Vollmer, M.; Böhm, S.; Niendorf, T.

H-502 Poster Pitch Presentation

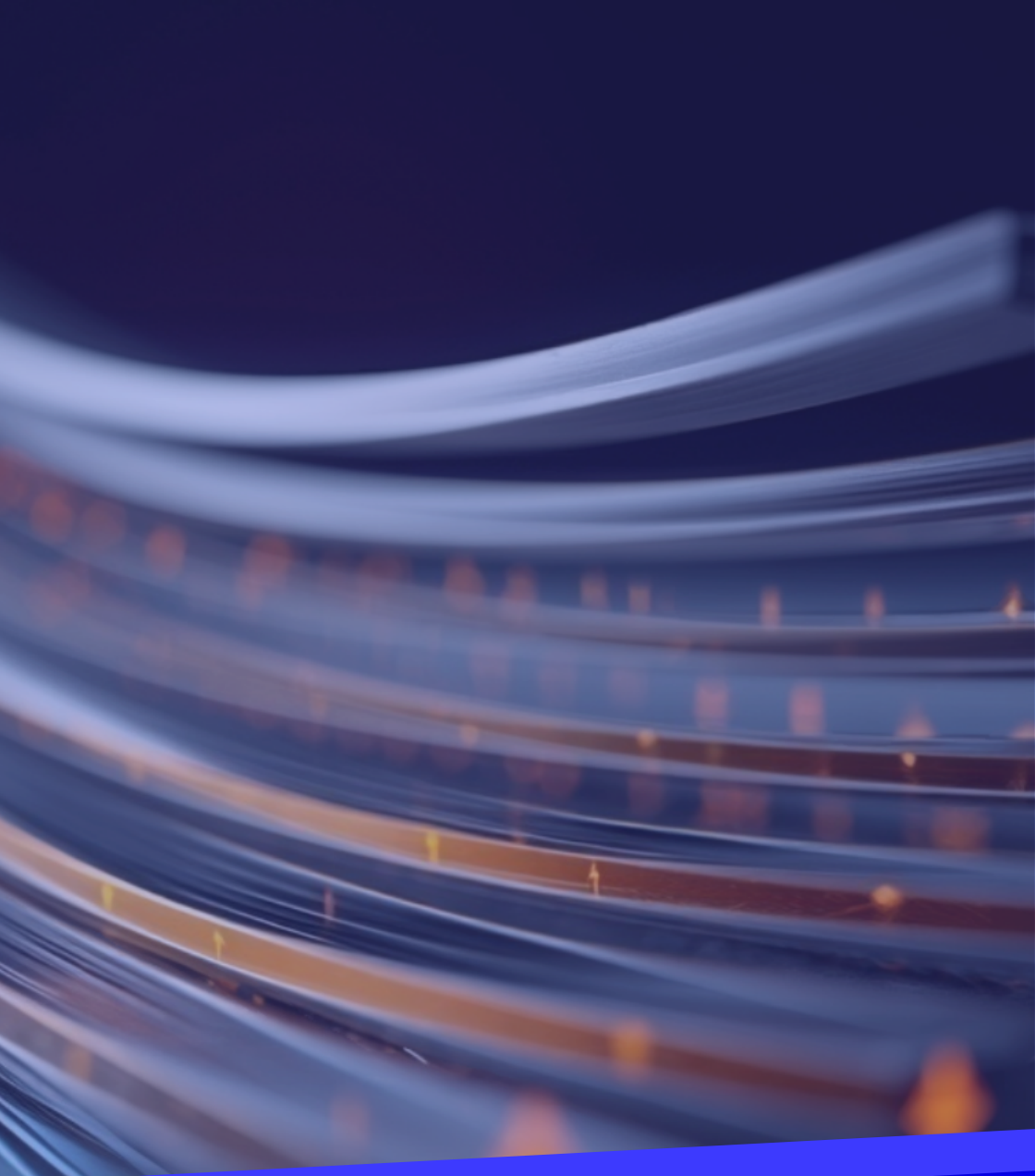
On the Effect of Fe-Doping on Crack Formation and Transformation Temperatures in Additively Manufactured Ni-Mn-Sn Heusler Magnetic Shape Memory Alloy

Guder, A. (Speaker)¹; Gutfleisch, O.²; Horn, M.¹; Lauhoff, C.¹; Niendorf, T.¹; Scheibel, F.²; Teinor, N.N.²

Poster Pitch Session

494 Poster Pitch Presentation

Poster Pitch Presentations



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Präsident/President: Prof. Dr.-Ing. Gunther Eggeler, Ruhr Universität Bochum
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