

Congress & Exhibition

Additive 2026

5th Symposium on Materials and
Additive Manufacturing

24 - 26 Mar 2026

Kassel & online

Chairperson



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

DGM.de/am/2026/



Welcome to Additive 2026 in Kassel

Additive manufacturing is transforming not only how components are produced, but also how design, materials, and technological responsibility are understood. It challenges established boundaries and opens new degrees of freedom from technological, economic, and environmental perspectives. This mindset is firmly embedded at the University of Kassel, where interdisciplinary collaboration and sustainability-oriented research serve as key drivers of innovation.

With **Additive 2026**, taking place in March in Kassel, this spirit becomes tangible. Researchers, engineers, and industry representatives gather to discuss current developments, exchange practical insights, and explore how additive technologies are

increasingly transitioning from specialized applications to reliable industrial solutions. Topics such as novel materials, process optimization, qualification, reliability, and scalability reflect both the breadth of the program and the growing maturity of the field.

Kassel stands for constructive dialogue and practical progress, precisely the combination required to further unlock the potential of additive manufacturing and advance its industrial implementation.

Additive 2026 provides a platform for open exchange, critical discussion, and new collaborations. The organizers are pleased to welcome all participants to Kassel and to jointly shape the next stage in the development of additive manufacturing.

Chairperson



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

Program Committee



Prof. Dr.-Ing. Christian Haase
TU Berlin



Prof. Dr. Carolin Körner
Friedrich-Alexander-Universität
Erlangen-Nürnberg (FAU)



Prof. Dr.-Ing. Christoph Leyens
Fraunhofer Institute for Material and
Beam Technology IWS Dresden



Prof. Dr.-Ing. Vasily Ploshikhin
University of Bremen



Prof. Dr. Katrin Wudy
Technical University of Munich

Program

24 Mar 2026 (Tue)

Lecture Room 5

General

8:45 AM - 9:00 AM

Opening Address

Niendorf, T. (Speaker)
University of Kassel

Plenary Session I

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf*
(University of Kassel)

9:00 AM Plenary Talk

Prevention, Reduction, and Remediation of Errors in Additive Manufacturing – The Synergy of Human and Artificial Intelligence

Baranzke, T.¹; Ashmawi, A.¹; Giza Muñoz, A.²; Jülich, B.¹; Baumann, M.¹; Pastors, F.¹; Friedrich, A.¹; Eibl, F. (Speaker)²
¹Aconity3D GmbH, Herzogenrath; ²University of Duisburg-Essen

Highlight Lecture I

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf*
(University of Kassel)

9:40 AM Highlight Lecture

Microstructure control in Laser Additive Manufacturing revealed by X-rays

Chen, Y. (Speaker)¹; Collins, D.²; Bolender, A.³; Hunt, S.⁴; Zhang, D.⁵; Honkimaki, V.⁶; Rack, A.⁶; Easton, M.⁷; Withers, P.⁴; Lee, P.⁸; Niendorf, T.³
¹RMIT University, Melbourne (Australia); ²University of Cambridge; ³University of Kassel; ⁴University of Manchester; ⁵University of Bath; ⁶European Synchrotron Radiation Facility – ESRF; ⁷RMIT University; ⁸University College London

AHT.01: High Temperature I

Session Chairs: *Dr. Christian Leinenbach* (Swiss Federal Laboratories for Materials Science and Technology (EMPA))

10:10 AM Lecture

A Comparison of Standard and Modified Heat Treatments for Electron Beam Melted IN738LC: Moving Beyond Conventional Post-Processing

Banku, K.K. (Speaker)¹; Petenati, J.N.²; Hasemann, G.¹; Rittinghaus, S.-K.²; Bondi, P.³; Zhirnov, I.²; Krüger, M.¹; Gökce, B.²; Xu, B.-X.³
¹Otto von Guericke University Magdeburg; ²Bergische Universität Wuppertal; ³Technische Universität Darmstadt

10:30 AM Lecture

Influence of internal nitridation-induced precipitation on the high-temperature performance of an additively manufactured NiCrAl alloy

Muellmann, J.¹; Elsayed, A.²; Samy, V.²; Šulák, I.³; Nowak, B.⁴; Fischer-Bühner, J.⁵; Brasche, F. (Speaker)¹; Haase, C.¹; Krupp, U.²
¹Technische Universität Berlin; ²RWTH Aachen University; ³Czech Academy of Sciences, Brno (Czech Republic); ⁴VDM Metals International GmbH, Altena; ⁵Indutherm Erwärmungsanlagen, Walzbachtal

10:50 AM Lecture

Evaporation Modelling for Electron Beam Powder Bed Fusion of γ -TiAl Alloys

Leidel, D. (Speaker); Markl, M.; Körner, C.
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

AST.01: Steel I

Session Chairs: *Prof. Dr. Julia Kristin Hufenbach*
(Leibniz Institute for Solid State and Materials Research Dresden)

11:40 AM Lecture

Arc Atomized Metal Powders for Laser Powder Bed Fusion and Directed Energy Deposition: Process–Structure–Property Relationships

Daoud, H. (Speaker)¹; Glatzel, U.²; Kulig, A.³
¹Neue Materialien Bayreuth GmbH; ²University of Bayreuth; ³Neue Materialien Bayreuth

12:00 PM Lecture

Accelerated alloy development by means of CALPHAD simulations and DED-LB technique: from powder to wire

Gerdt, L. (Speaker); Kaspar, J.; Mätje, J.-F.; Biastoch, S.; Wilsnack, C.; Hillig, H.; Lopez, E.; Zimmermann, M.; Leyens, C.
Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS, Dresden

12:20 PM Lecture

Phase transformation and solidification behaviour of austenitic stainless-steel powder obtained via gas atomization

Sherstneva, A. (Speaker); Hauser, M.; Quitzke, C.; Wendler, M.
TU Bergakademie Freiberg

12:40 PM Lecture

Development of Steel Powder for High-Strength and Damage-Tolerant AM

Suresh, S. (Speaker)¹; Hübner, L.²; Karimi, J.¹; Burkhardt, C.¹; Wendler, M.³; Biermann, H.¹; Niendorf, T.²; Volkova, O.³
¹Institute of Materials Engineering, TU Bergakademie Freiberg; ²Institute of Materials Engineering, University of Kassel; ³Institute of Iron and Steel Technology, TU Bergakademie Freiberg

Plenary Session II

Session Chairs: Prof. Dr.-Ing. Christian Haase (TU Berlin)

2:00 PM Plenary Talk online
Voxel-Level Design of Functionally Graded NiTi and NiTiHf Shape Memory Alloys via Laser Powder Bed Fusion
Karaman, I. (Speaker)
Texas A&M University, College Station (United States)

Highlight Lecture II

Session Chairs: Prof. Dr.-Ing. Christian Haase (TU Berlin)

2:40 PM Highlight Lecture
Graded Materials and Refurbishment Strategies Tailored for Demanding Tooling Applications
Leuders, S.¹; Mutke, C.²; Bartling, A.²; Wu, L. (Speaker)²
¹voestalpine Additive Manufacturing Center GmbH, Düsseldorf; ²voestalpine Additive Manufacturing Center GmbH

AST.02: Steel II

Session Chairs: Prof. Dr.-Ing. Christian Haase (TU Berlin)

3:10 PM Lecture
Effects of diameter and process gas flow on the microstructure and mechanical behavior of PBF-LB/M 316L stainless steel
Karentzopoulos, P. (Speaker)¹; Mao, G.²; Stammkötter, S.¹; Mrzljak, S.¹; Münstermann, S.²; Walther, F.¹
¹TU Dortmund University; ²RWTH Aachen University

3:30 PM Lecture
Experimental Basis for AI-Assisted Prediction of Mechanical Properties in LPBF 316L
Schob, D. (Speaker); Maasch, P.
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

3:50 PM Lecture
Effect of the powder composition on the microstructure and mechanical properties of 316L stainless steel fabricated by laser powder bed fusion
Suárez Ocaño, P. (Speaker); Ávila Calderón, L.A.; Agudo Jácome, L.; Rehmer, B.; Mohr, G.; Evans, A.; Skrotzki, B.
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

4:10 PM Lecture
The potential of tailoring microstructures and mechanical properties of stainless steels in Laser Powder Bed Fusion
Sewalski, S. (Speaker); Werz, M.; Weihe, S.
University of Stuttgart

4:30 PM Company Presentation
Company Presentation - CLASCO
Lasagni, A.F. (Speaker)
TU Dresden

AHT.02: High Temperature II

Session Chairs: Dr.-Ing. Frederike Brasche (TU Berlin)

5:00 PM Lecture
Defect-free tungsten processing using selective pre-heating during PBF-EB/M
Bähr, S. (Speaker); Hayashi, E.; Frank, D.
JEOL Germany GmbH, Freising

5:20 PM Lecture
Controlling Coarsening: Heat Treatment Strategies for Additively Manufactured Mo-9Si-8B
Schmidt, C. (Speaker)¹; Hasemann, G.¹; Wahlmann, B.²; Chen, Y.²; Körner, C.³; Krüger, M.¹
¹Otto von Guericke University Magdeburg; ²Friedrich-Alexander-Universität Erlangen-Nürnberg, Fürth; ³Friedrich-Alexander-Universität Erlangen-Nürnberg

5:40 PM Lecture
High-power processing of tungsten by electron beam powder bed fusion
Wahlmann, B. (Speaker); Abdul Baseer, R.; Körner, C.
Friedrich-Alexander-Universität Erlangen-Nürnberg

Poster-Pitch-Presentations

Session Chairs: Prof. Dr.-Ing. Thomas Niendorf (University of Kassel), Dr.-Ing. Julia Richter (University of Kassel)

6:10 PM Poster-Pitch-Presentation #A-61
Challenges in predictive design and manufacturing regarding fatigue performance of DED-Arc components
Köhler, M. (Speaker); Höfer, K.; Hensel, J.
TU Chemnitz

6:13 PM Poster-Pitch-Presentation #A-103
The Crystallographic Texture Effect in Additively Manufactured 316L Stainless Steel Biomaterials
Türkpençesi, B.İ. (Speaker)¹; Davut, K.¹; Garipcan, B.²; Güden, M.¹; Hoyer, K.-P.³; Soykan, S.²; Uzer, B.¹
¹Izmir Institute of Technology; ²Boğaziçi University, Istanbul (Turkey); ³Paderborn University

6:16 PM Poster-Pitch-Presentation #A-143
Unlocking New Materials and Applications with High-Productivity Slurry-based Binder Jetting of Near-Net-Shape Metal Components
Angenoorth, J.; Wächter, D.; Günther, D.; Erhard, P. (Speaker)
Fraunhofer-Institut für Gießerei-, Composites- und Verarbeitungstechnik, Garching bei München

6:19 PM Poster-Pitch-Presentation #A-164
Additive Manufacturing of Bulk Metallic Glasses
Elsen, A. (Speaker)
Heraeus AMLOY Technologies GmbH, Karlstein am Main

6:22 PM Poster-Pitch-Presentation #A-169
Investigation of the Recrystallization Mechanism in Additively Manufactured Inconel 718 Through Comparison of the Heat Treatment of DED-Arc/W, DED-LB/P, and PBF-LB

Nazarahari, A. (Speaker)¹; Joseph, C.²; Ghassemali, E.¹
¹Jönköping University; ²GKN Aerospace Engine Systems AB, Trollhättan (Sweden)

6:25 PM Poster-Pitch-Presentation #A-170
Effect of powder feed rate on microstructure evolution and martensitic transformation in Co-Ni-Ga high temperature shape memory alloy processed by laser beam directed energy deposition

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

6:28 PM Poster-Pitch-Presentation #A-173
In Situ X-Ray Imaging of Particle Behavior in the Melt Pool During DED Additive Manufacturing

Dommaschk, T. (Speaker)¹; Nobach, M.¹; Lauhoff, C.¹; Bolender, A.¹; Chapman, H.²; Chen, Y.³; Sket, F.⁴; Lee, P.D.²; Niendorf, T.¹
¹University of Kassel; ²University College London; ³RMIT University, Melbourne (Australia); ⁴IMDEA Materials Institute, Madrid (Spain)

6:31 PM Poster-Pitch-Presentation #A-174
Learning From EOSTATE Exposure OT: A Deep Learning Path to Scalable, Pre-Build Quality Prediction

Hackl, F. (Speaker); Hanemann, T.; Krauss, H.
EOS GmbH Electro Optical Systems, Krailling

6:34 PM Poster-Pitch-Presentation #A-176
Study of the Functional Properties of Ni-Mn-Ga-Cu Magnetic Shape Memory Alloys Powder in an ABS-matrix Composite Filament

Vaquero-Crespi, J. (Speaker)¹; Salas, D.¹; Herrera, E.G.²; Torrens-Serra, J.¹; Santamarta, R.¹; Seguí, C.¹; Sánchez-Alarcos, V.²; Pons, J.¹
¹Universitat de les Illes Balears, Palma (Spain); ²Universidad Pública de Navarra, Pamplona (Spain)

6:37 PM Poster-Pitch-Presentation #A-179
The influence of welding speed on geometry, porosity, and microstructure of AISi10Mg multilayer structures manufactured with plasma arc and powder-based DED

Vieweger, D. (Speaker); Rotzsche, S.; Tong, Y.; Vincic, J.; Mayr, P.
Technische Universität München, Garching bei München

6:40 PM Poster-Pitch-Presentation #B-31
Compensation of Under- and Over-Extrusion caused by sudden Feed Rate Changes using a Single-Screw Extruder

Johannsen, E. (Speaker)¹; Schmidt, J.-U. R.¹; Jaehnicke, J.²; Janning, T.S.¹
¹Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Braunschweig; ²Siemens AG, Chemnitz

6:43 PM Poster-Pitch-Presentation #B-182
Fourier Transform Infrared Spectroscopy Analysis of Arburg Plastic Free-formed Electrically Conductive PVDF Components Processed in Different Form Factors

Arikan, N. (Speaker)¹; Celik, O.¹; Klier, K.²; Hartung, M.²; Mutlu, I.¹; Yagci, Y.E.³; Kadiroglu, U.¹; Heim, H.-P.²
¹University Kocaeli; ²University of Kassel; ³R&D, Farplas Otomotiv A.S, Kocaeli (Turkey)

6:46 PM Poster-Pitch-Presentation #C-131
Fabrication of Polymer-Derived Ceramic Thin-Films via Inkjet Printing

Qazzazie-Hauser, A. (Speaker)¹; Krämer, J.¹; Honnef, K.¹; Hanemann, T.²
¹Albert-Ludwigs-Universität Freiburg; ²Karlsruher Institut für Technologie

6:49 PM Poster-Pitch-Presentation #D-44
Substitution of case hardening process by laser metal deposition generated bulk material with carbon gradient

Stelling, O. (Speaker)¹; Steinbacher, M.²; Ellendt, N.¹
¹Universität Bremen; ²Leibniz-Institut für Werkstofforientierte Technologien - IWT, Bremen

6:52 PM Poster-Pitch-Presentation #D-89
Modelling and 3D printing of square grid auxetic structure: experimental and simulation study of the impact of changing unit cell parameters on mechanical properties

Hassan, H. (Speaker); Vandeginste, V.
KU Leuven, Bruges (Belgium)

6:55 PM Poster-Pitch-Presentation #D-134
Microstructure Design via Additive Manufacturing of Magnetic Shape Memory Heusler Alloys for Multicaloric Applications

Teinor, N.N. (Speaker)
Technical University of Darmstadt

6:58 PM Poster-Pitch-Presentation #D-136

Unraveling the Magnetic Interactions of Nanocrystalline Rare-Earth-Lean Nd-Fe-B Powder and the Influence of Additive Manufacturing on the Magnetic Properties

Sahoo, P. (Speaker)¹; Schäfer, L.¹; Schäfer, K.¹; Adabifiroozjaei, E.¹; Hlawaty, R.¹; Gabriel, P.²; Stratmann, N.²; Bruder, E.¹; Molina-Luna, L.¹; Durst, K.¹; Ziefuß, A.R.²; Barcikowski, S.²; Gutfleisch, O.¹; Skokov, K.¹

¹Technical University of Darmstadt; ²University of Duisburg-Essen

7:01 PM Poster-Pitch-Presentation #F-165

High-Temperature Gas Atomization: Reduced Gas Consumption and Enhanced Powder Fineness for Additive Manufacturing

Geppert, A.K. (Speaker)¹; Weicht, A.¹; Evers, S.²; Achelis, L.²; Uhlenwinkel, V.¹; Fritsching, U.²

¹Leibniz Institute for Materials Engineering - IWT, Bremen; ²University of Bremen

7:04 PM Poster-Pitch-Presentation #F-168

Phase-Field-Crystal Plasticity Modeling of Solidification and Type-III Residual Stress in Nickel-Based Superalloy CM247LC

Salem, M. (Speaker)¹; Espadero, M.¹; Banas, H.¹; Jadhav, P.¹; Lu, Y.²; Basoalto, H.¹

¹University of Sheffield; ²University of Birmingham

7:07 PM Poster-Pitch-Presentation #F-181

From Irregular Powders to Engineered Particles: Microwave Plasma Gas-Phase Processing of Spherical Micro- and Nanomaterials for Additive Manufacturing Applications

Kuns, S.¹; Kunze, F.¹; Underberg, M.¹; Stahlmecke, B.¹; Kunz, C.²; Hufenbach, J.K.²; Hülser, T.P.¹; Schnurre, S.M. (Speaker)¹

¹Institut für Umwelt & Energie, Technik & Analytik e.V. (IUTA), Duisburg; ²Leibniz Institute for Solid State and Materials Research (IFW) Dresden e.V.

7:10 PM Poster-Pitch-Presentation #G-177

Wettability tailoring of AM Ti6Al4V and ScAlMg alloy via a dual process of laser polishing and Direct Laser Interference Patterning

Tabares, I. (Speaker)¹; Andral, U.²; Cloonan, A.³; Escudero Rodriguez, M.⁴; Kavanagh, E.³; Lasagni, A.F.¹; Perinián Butrón, A.⁴

¹Technische Universität Dresden; ²SYLAS Laser Systems, Port (France); ³DePuy Synthes, Ringaskiddy (Ireland); ⁴Advanced Center for Aerospace Technologies (CATEC), Seville (Spain)

7:13 PM Poster-Pitch-Presentation #H-91

Hybrid Additive Manufacturing for Tooling Construction and Recovery: Depositing 316L Stainless Steel over G2500 Cast Iron via Laser DED

Santos, D.¹; Colosio, M.A.²; Zanella Neto, W.²; Castillo, J.³; Mendes, A. (Speaker)¹

¹Federal University of ABC - UFABC, Santo André (Brazil); ²General Motors do Brasil, São Caetano do Sul (Brazil); ³Fundação Santo André

7:16 PM Poster-Pitch-Presentation #A-184

Additive Manufacturing of Spinodoid Architectures Via Laser Powder Bed Fusion

Kancharla, D. (Speaker); Leyens, C.; Marquardt, A.

TU Dresden

7:19 PM Poster-Pitch-Presentation online

#A-18

Development of Axial-Flow Impeller with Multi-material Blades of IN718 and SS316L by Wire Arc Additive Manufacturing and its Mechanical Properties

Ejiri, S. (Speaker)

Nikkiso Co., Ltd., Tokyo (Japan)

7:22 PM Poster-Pitch-Presentation online

#H-135

Hydrogen Resistant Coatings for Existing Pipelines and Novel Pipelines Made of Woven Carbon Fiber Using High-Speed DED Process

Müller, C.J. (Speaker); Grigat, N.; Grün, V. RWTH Aachen University

7:25 PM Poster-Pitch-Presentation online

#A-178

NiTi-Ti layered material 3D-printed with electron beam and wire

Koval, Y.; Filatova, V.; Kedrovskiy, S.; Odnosum, V.; Bondarchuk, V.; Filatov, A.; Firstov, G. (Speaker)

G.V. Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine, Kyiv (Ukraine)

7:28 PM Poster-Pitch-Presentation #E-145

In-situ XRD Analysis of Phase Transformations in CrMnNi TRIP Steel during DED-LAM

Farashi, Z. (Speaker)¹; Bolender, A.²; Honkikami, V.³; Hunt, S.⁴; Lee, P.⁵; Niendorf, T.²; Le, T.¹; Easton, M.¹; Chen, Y.¹

¹RMIT University, Melbourne (Australia); ²Kassel University; ³ESRF - The European Synchrotron, Grenoble (France); ⁴University of Manchester; ⁵University College London

Lecture Room 4

ACO.01: Computational Approaches I

Session Chairs: *Dr. Sascha Fliegner (Fraunhofer Institute for Mechanics of Materials IWM)*

10:10 AM Lecture

Systematic approach to develop scan strategies for Laser Directed Energy Deposition using reinforcement machine learning

Adler, N.E. (Speaker)¹; Evans, A.²; Penchev, P.³; Essa, K.¹

¹University of Birmingham; ²Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; ³University of Birmingham

10:30 AM Lecture

Machine learning-assisted process development of series production for Laser Powder Bed Fusion technology
Wu, L. (Speaker); Das, S.; Leuders, S. voestalpine Additive Manufacturing Center GmbH, Düsseldorf

ALM.01: Lightmetals I

Session Chairs: *Univ.-Prof. Dr.-Ing. habil. Olaf KeBler (University of Rostock)*

11:40 AM Lecture

Development, Validation and Application of High Performance Printing Ti6Al4V for Aerospace

Bielefeld, T. (Speaker)¹; Schunk, C.²

¹Airbus Aerostructures GmbH, Varel; ²Colibrium Additive, Lichtenfels

12:00 PM Lecture

Analysis of additively manufactured AlSi10Mg samples after milling under cryogenic temperatures

Kaja Mohideen, N.A. (Speaker)¹; Barbosa, J.M.d.A.²; Aurich, J.C.²; Kirsch, B.²; Kerschler, E.¹

¹Arbeitsgruppe Werkstoffprüfung, Kaiserslautern; ²Fertigungstechnik und Betriebsorganisation, Kaiserslautern

12:20 PM Lecture

Linking Photodiode Signals to Surface Roughness in Textured Additive Manufactured Ti-6Al-4V Parts by Direct Laser Interference Patterning

Sallese, M. (Speaker)¹; Wang, W.²; Tabares, I.¹; Vuckovic, F.³; Steiger, C.³; Soldera, M.¹; Lasagni, A.F.¹

¹TU Dresden; ²Surfunction GmbH, Saarbrücken; ³nLIGHT plasmo GmbH, Vienna (Austria)

12:40 PM Lecture

Additive manufactured wear resistant bronze coatings on aluminium

Witte, C. (Speaker)¹; Solterbeck, C.-H.¹; FreiBe, H.²; Wiesheier, J.³; Rubenbauer, T.³; Ebert, A.⁴; Barz, J.⁴; Schloesser, J.¹

¹University of Applied Science Kiel; ²Kugler Bimetal SA, Genf (Switzerland); ³Schlenk Metallic Pigments GmbH, Roth; ⁴Schmelzmetall Deutschland GmbH, Steinfeld-Hausen

ALM.02: Lightmetals II

Session Chairs: *Prof. Dr. Jana Schloesser (Hochschule für angewandte Wissenschaften Kiel)*

3:10 PM Lecture

Effect of stirring pin geometry on weld appearance and microstructure in wire-based friction stir additive manufacturing of aluminium components
Donaubauer, S. (Speaker); Weihe, S.; Werz, M. MPA Universität Stuttgart

3:30 PM Lecture

Heat Treatment Influence in a Large-Scale Interlaboratory Study on Laser Powder Bed Fusion of Aluminium Alloy Al10SiMg
Tönjes, A.¹; Surm, H.¹; Steuer, R.²; Kusoglu, I.M.³; Ziefuss, A.R.³; Barcikowski, S.³; KeBler, O. (Speaker)²

¹Leibniz IWT, Bremen; ²University of Rostock; ³University of Duisburg Essen

3:50 PM Lecture

Microstructure and mechanical properties of AlSi10Mg plate lattice structures
Maier, M. (Speaker); Hartl, F.; Huber, O.; Saage, H. Hochschule Landshut

4:10 PM Lecture online

Microstructure and hardness evolution in LPBF processed Mg2Si-rich aluminum alloy
Solanki, K. (Speaker); Zinn, C.; von Hehl, A. University of Siegen

E.01: Residual Stresses and Advanced Characterization I

Session Chairs: *Dr. Steven Van Petegem (Paul Scherrer Institute PSI)*

5:00 PM Lecture

In-situ Monitoring of Material Composition in Electron Beam Powder Bed Fusion Enabled by Multi-Detector Electron-Optical Imaging
Berger, T. (Speaker); Renner, J.; Wahlmann, B.; Körner, C. Friedrich-Alexander-Universität Erlangen-Nürnberg

5:20 PM Lecture

In-situ observation of melt pool and spatter dynamics in PBF-LB/M
May, J. (Speaker); Müller, M.; Schwarz, N.; Kaierle, S. Laser Zentrum Hannover

5:40 PM Lecture

Optical Emission Spectroscopy for robust in-situ process monitoring in laser powder bed fusion
Gabriel, P.¹; Stutzenberger, M. (Speaker)¹; Ziefuss, A.R.¹; Eibl, F.²; Barcikowski, S.¹

¹University of Duisburg-Essen; ²Aconity GmbH, Herzogenrath

Seminar Room 6

B.01: Polymers I

Session Chairs: *Dr. Anna Rosa Ziefuß (University of Duisburg-Essen)*

10:10 AM Lecture

Continuous fiber reinforcing lithography-based additive manufacturing

Bornemann, J. (Speaker); Hager, F.; Laa, D.; Stampfl, J.
TU Wien, Vienna (Austria)

10:30 AM Lecture

Investigation of the Aging Behavior of Polyamide 12 and Comparison with a Kinetic Aging Model Using Dielectric Analysis

Burchard, B. (Speaker); Wudy, K.
Technical University of Munich, Garching

AFU.01: Functional I

Session Chairs: *Dr. Steven Van Petegem (Paul Scherrer Institute PSI)*

11:40 AM Lecture

Manufacture of feedstocks for AM of (inter) metallic materials – recent developments and potential using EIGA technology and pre-routes for this

Achtermann, M. (Speaker); Ratschbacher, K.
GfE Metalle und Materialien GmbH / AMG
Titanium Germany, Nürnberg

12:00 PM Lecture

Processing of a non-equiatomic refractory high-entropy alloy via electron beam powder bed fusion

Baumann, N. (Speaker)¹; Franke, M.¹; Ratschbacher, K.²; Körner, C.³
¹Neue Materialien Fürth GmbH; ²GfE Metalle und Materialien GmbH, Nürnberg; ³Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

12:20 PM Lecture online

Additively manufactured Co–Cr–Ni multi-principal element alloys with excellent strength and ductility at room and cryogenic temperatures

Chandraker, A.; Sharma, K.; Konkati, C.; Barik, S.; Sisodia, S.; Chatterjee, K.; Chauhan, A. (Speaker)
Indian Institute of Science, Bengaluru (India)

AFU.02: Functional II

Session Chairs: *Samira Gruber (Fraunhofer Institute for Material and Beam Technology IWS Dresden)*

3:10 PM Lecture online

Process-Integrated In-Situ Treatment for Microstructural Refinement and Functional Enhancement of LPBF-Fabricated NiTi Shape Memory Alloys

Algamil, A.; Behvar, A.; Bajaj, H.; Celebi, A. (Speaker); Elahinia, M.
University of Toledo, Ohio (United States)

3:30 PM Lecture online

Size-effects in additively manufactured Zr-based bulk metallic glass

Wegner, J. (Speaker); Bruckhaus, L.; Kleszczynski, S.
Universität Duisburg-Essen

3:50 PM Lecture

Experimental Investigation of Residual Stress and Crack Formation during Laser-Based Powder Bed Fusion of Binary Metallic Glasses from the NiNb System
Kleszczynski, S. (Speaker)¹; Schwöppe, D.¹; Busch, R.²; Ellendt, N.³; Geppert, A.³; Wegner, J.¹

¹Universität Duisburg-Essen; ²Universität des Saarlandes, Saarbrücken; ³Universität Bremen

4:10 PM Lecture

Microstructure engineering in additively manufactured Fe-based shape memory alloys using in situ alloying

Schmidt, J. (Speaker); Toenjes, A.
Leibniz Institute for Materials Engineering - IWT, Bremen

C.01: Ceramics I

Session Chairs: *Dr.-Ing. Stefan Kleszczynski (University of Duisburg-Essen)*

5:00 PM Lecture

Preparation of Ceramic–Metal Composites via FDM-Based Additive Manufacturing and Liquid Metal Infiltration

Nagy, S. (Speaker)¹; Vály, L.²; Vozárová, M.²; Dvorák, T.¹; Opálek, A.¹; Nagy Trembošová, V.¹; Neubauer, E.²

¹Slovak Academy of Sciences, Bratislava (Slovakia); ²RHP-Technology GmbH, Seibersdorf (Austria)

5:20 PM Lecture

Application of metals tracks onto ceramic layers using the direct energy deposition

Becks, P.-S. (Speaker); Kraemer, K.M.; Reitz, R.; Oechsner, M.
Technical University of Darmstadt

5:40 PM Lecture

Additive manufacturing as processing route for particle-reinforced alloys

Jäggle, E. (Speaker)
Universität der Bundeswehr München, Neubiberg

Foyer

Breaks

10:00 AM - 10:10 AM

Short Break

11:10 AM - 11:40 AM

Coffee Break

1:00 PM - 2:00 PM

Lunch Break

3:00 PM - 3:10 PM

Short Break

4:30 PM - 5:00 PM

Coffee Break

6:00 PM - 6:10 PM

Short Break

Poster Evening

7:30 PM - 9:00 PM

Poster Evening

25 Mar 2026 (Wed)

Lecture Room 5

Plenary Session III

Session Chairs: *Prof. Dr. Katrin Wudy (Technical University of Munich)*

9:00 AM Plenary Talk

Additive Manufacturing of Ceramics: issues, potentialities and opportunities
Günster, J. (Speaker)

Bundesanstalt für Materialforschung und -prüfung (BAM) and Clausthal University of Technology, Berlin

Highlight Lecture III

Session Chairs: *Prof. Dr. Katrin Wudy (Technical University of Munich)*

9:40 AM Highlight Lecture

Surface-Selective Melting: How Nanoparticles Enable Efficient and Tailored Diode Laser Processing of Polymers

Ziefuß, A.R. (Speaker)¹; Willeke, M.²; Stratmann, N.²; Leupold, S.³; Schmidt, M.³; Barcikowski, S.²

¹University of Duisburg-Essen; ²University of Duisburg-Essen; ³Friedrich-Alexander-University of Erlangen-Nürnberg

B.02: Polymers II

Session Chairs: *Prof. Dr. Katrin Wudy (Technical University of Munich)*

10:10 AM Lecture

UV-Assisted DIW of Silicone Elastomers for Medical Phantoms and Soft Robotics
Gurbuz, P. (Speaker); Edmondson, S.

The University of Manchester

10:30 AM Lecture

Challenges in processing self-compounded liquid silicone rubbers in 3D printing

Klier, K. (Speaker); Giesen, R.-U.; Heim, H.-P.
University of Kassel

10:50 AM Lecture

Voxel-based multi-material 3d printing
Laa, D. (Speaker); Geyer, S.; Koch, T.; Stampfl, J.
Technische Universität Wien

11:10 AM Company Presentation
Company Presentation - Oxford Lasers Ltd

Beeston, M. (Speaker)
Oxford Lasers Ltd, Didcot (United Kingdom)

AST.03: Steel III

Session Chairs: *Dr.-Ing. Thomas Wegener (Technical University of Darmstadt)*

11:40 AM Lecture

Microstructure evolution of additively manufactured medium-manganese steels during intercritical annealing
de Castro, P.J. (Speaker); Belkacemi, L.; Epp, J.; Fechte-Heinen, R.

Leibniz Institute for Materials Engineering - IWT, Bremen

12:00 PM Lecture

Effect of sulphur on the defect mitigation during processing of a metastable stainless steel X2CrMnNi16-7-4.5 in PBF-EB/AM

Langenhan, S.G. (Speaker); Sherstneva, A.; Wendler, M.; Burkhardt, C.; Weidner, A.; Volkova, O.; Biermann, H.
Technische Universität Bergakademie Freiberg

12:20 PM Lecture

Phase Transformation behaviour of pure Iron Powder

Javed, M.Y. (Speaker)
TU Bergakademie Freiberg

12:40 PM Lecture

On the role of the manufacturing-induced cell structure in laser-powder-bed-fused stainless steel 316L during cyclic plastic deformation

Werner, T.; Avila, L. (Speaker); Agudo Jácome, L.; Nolze, G.; Saliwan Neumann, R.; Sonnenburg, E.; Skrotzki, B.; Madia, M.; Evans, A.

Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

Highlight Lecture IV

Session Chairs: *Prof. Dr. Carolin Körner (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))*

2:00 PM Highlight Lecture

On the applicability of recycled feedstock materials in powder bed fusion processes

Richter, J. (Speaker)¹; Velmurugan, T.²; Kratzsch, R.³; Peuker, U.³; Friedrich, B.²; Song, W.⁴; Niendorf, T.⁴

¹University of Kassel; ²RWTH Aachen University; ³TU Bergakademie Freiberg; ⁴University of Kassel

Highlight Lecture V

Session Chairs: Prof. Dr. Carolin Körner
(Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))

2:20 PM Highlight Lecture Advanced powder bed fusion: numerically driven process optimization through digital twins

Markl, M. (Speaker)¹; Körner, C.²
¹Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU); ²Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

ALM.03: Lightmetals III

Session Chairs: Prof. Dr. Carolin Körner
(Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))

3:00 PM Lecture From untextured to high strength Titanium in PBF-LB/M: Mastering the thermal conditions for superior toughness

Altmann, M.L. (Speaker); Toenjes, A.
Leibniz-Institut für Werkstofforientierte Technologien – IWT, Bremen

3:20 PM Lecture Microstructure design of additively manufactured beta Ti-Nb alloy for controlling the mechanical performance in view of implant applications

Gebert, A. (Speaker)¹; Pilz, S.¹; Günther, F.²; Akman, A.¹; Zimmermann, M.²
¹Leibniz IFW Dresden; ²IfWW TU Dresden

3:40 PM Lecture Additive Manufacturing of Hierarchically Porous Silicon and Silica Glass

Schattmann, C. (Speaker)¹; Acikgöz, S.¹; Maiwald, M.I.¹; May, M.¹; Herzog, D.¹; Kelbassa, I.²; Huber, P.³
¹Hamburg University of Technology; ²Fraunhofer IPT, Hamburg; ³Deutsches Elektronen-Synchrotron DESY, Hamburg

4:00 PM Lecture On the structural integrity of AlSi40 alloy processed by laser-based powder bed fusion

Wegener, T. (Speaker)¹; Niendorf, T.¹; Günther, J.²
¹Universität Kassel; ²ifw Jena

ALM.04: Lightmetals IV

Session Chairs: Dr.-Ing. Anastasiya Tönjes
(Leibniz Institute for Materials Engineering - IWT)

4:50 PM Lecture Processing of high-strength aluminium alloys in laser powder bed fusion (LPBF)-like conditions using Coherent Beam Combining (CBC)

Fritz, S. (Speaker); O'Toole, P.; Werz, M.; Hagenlocher, C.; Graf, T.; Weihe, S.
Universität Stuttgart

5:10 PM Lecture Machine learning-informed design of additively manufactured high-strength aluminum alloys

Ozdemir, H.C. (Speaker); Basu, S.; Brasche, F.L.; Haase, C.; Stockmar, J.
TU Berlin

5:30 PM Lecture online On the Influence of Direct Natural Ageing on Artificial Ageing of Aluminium Alloy AlSi10Mg After Laser Powder-Bed Fusion

Steuer, R. (Speaker)¹; Schöning, H.²; Plenaitis, S.³; Fuchs, N.⁴; Tönjes, A.⁵; Hengsbach, F.⁶; Keßler, O.²
¹University of Rostock; ²University of Rostock; ³SLV Rostock; ⁴University of Applied Science Stralsund; ⁵Leibniz IWT, Bremen; ⁶University of Paderborn

Lecture Room 4

E.02: Residual Stresses and Advanced Characterization II

Session Chairs: Dr. Yunhui Chen (RMIT University)

10:10 AM Lecture online Impact of In-Process Thermal Management Strategies in Wire Arc Additive Manufacturing on Microstructure, Properties and Residual Stress

Hempel, N. (Speaker)¹; Reindl, T.²; Hegele, P.²; Mayr, P.²
¹University of Stuttgart; ²Technical University of Munich

10:30 AM Lecture Monitoring the microstructure evolution in laser-based AM by in situ X-ray techniques

Van Petegem, S. (Speaker); Özsoy, A.; Gauduz, S.; Hearn, W.; Garrivier, N.; Makowska, M.
Paul Scherrer Institut, Villigen (Switzerland)

10:50 AM Lecture Damage mechanisms of additively manufactured gyroid structures in compression mode using in-situ X-ray computed tomography (XCT)

Widjaja, M.P. (Speaker)
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

AHT.03: High Temperature III

Session Chairs: Dr.-Ing. Benjamin Wahlmann
(Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))

11:40 AM Lecture Influence of Initial Powder Oxidation on Mechanical Properties of Components Fabricated using Nickel-based Haynes 282 via Laser Powder Bed Fusion

Dávila, J. (Speaker)¹; Agudo Jácome, L.¹; Hilgenberg, K.¹; Kleba-Ehrhardt, R.²; Mohr, G.¹
¹Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; ²Technische Universität Berlin

12:00 PM Lecture
Microstructural and Mechanical Correlations in IN718 from different manufacturing routes
Kirmaier, F. (Speaker); Brune, T.; Kraemer, K.M.; Wegener, T.; Oechsner, M.
Technical University of Darmstadt

12:20 PM Lecture
On the Processability of Novel, Metal Dusting Resistant Ni-Cu-Al Alloys for PBF-LB/M
Roy, S. (Speaker)¹; Öztürk, B.²; Oppermann, F.¹; Schlereth, C.²; Kreins, M.¹; White, E.²; Galetz, M.²; Krupp, U.¹
¹Institut für Eisenhüttenkunde, RWTH Aachen University; ²DECHEMA Forschungsinstitut, Frankfurt am Main

12:40 PM Lecture
Effect Of LPBF Process Parameters on Post-Heat Treatment Microstructures of Hastelloy X
Aydemir, A. (Speaker); Leparoux, M.; Leinenbach, C.
Swiss Federal Laboratories for Materials Science and Technology (EMPA), Thun (Switzerland)

E.03: Residual Stresses and Advanced Characterization III

Session Chairs: *Prof. Dr.-Ing. Florian Eibl (University of Duisburg-Essen)*

3:00 PM Lecture
Characterisation of residual stress in laser powder bed fusion alloys using diffraction based methods
Evans, A. (Speaker)
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

3:20 PM Lecture
Mechanical Surface Treatment Applied for Additive Manufacturing - Effects on Fatigue Strength at Specimen and Component level
Fliegenger, S. (Speaker)¹; Heiß, A.²; Keil, F.¹; Radners, J.¹; Schubnell, J.¹
¹Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg; ²fem Research Institute, Schwäbisch Gmünd

3:40 PM Lecture
Residual stress analysis in annealed PBF-LB CM247LC parts using energy dispersive X-ray diffraction
Mishurova, T. (Speaker)¹; Boin, M.¹; Brodin, H.²; Fardan, A.³; Hryha, E.³; Klaus, M.¹
¹Helmholtz Zentrum Berlin für Materialien und Energie GmbH; ²Siemens Energy AB, Finspång (Sweden); ³Chalmers University of Technology, Gothenburg (Sweden)

4:00 PM Lecture
Residual stress analysis in DED-Arc manufactured high strength low alloy steel thin-walled structures
Sarmast, A. (Speaker)¹; Köhler, M.²; Schubnell, J.¹; Preussner, J.¹; Hinterstein, M.¹; Luzin, V.³; Dilger, K.⁴
¹Fraunhofer Institute for Mechanics of Materials IWM, Freiburg im Breisgau; ²University of Technology Chemnitz, Chemnitz; ³Australian Nuclear Science and Technology Organization, Lucas Heights New South Wales (Australia); ⁴TU Braunschweig

ACO.02: Computational Approaches II

Session Chairs: *Dr.-Ing. Matthias Markl (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))*

4:50 PM Lecture
Finite Element Simulation of Shot Peening on AM Materials Considering Shot Kinematics
Keil, F. (Speaker)¹; Behler, J.²; Fliegenger, S.¹; Schubnell, J.¹
¹Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg im Breisgau; ²Sentenso GmbH, Datteln

5:10 PM Lecture
Embedding Learning for In Situ Crack Detection in Metal Additive Manufacturing
Kononenko, D. (Speaker)¹; Chernyavsky, D.¹; Seleznev, M.²; Weidner, A.²; Hufenbach, J.K.¹; Brink, J.v.d.¹; Kosiba, K.¹
¹Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden; ²Technische Universität Bergakademie Freiberg

5:30 PM Lecture
Laser powder bed fusion of defect-free components via Bayesian machine learning
Kosiba, K. (Speaker); Chernyavsky, D.; Hufenbach, J.K.; Kononenko, D.Y.; van den Brink, J.
Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden

5:50 PM Lecture
Expanding the Capabilities to Simulate Powder Bed Fusion (PBF) Processes with Thermo-Calc & Additive Manufacturing Module
Mehta, B.; Malik, A.; Quang, M.D.; Markström, A.; Schneider, A. (Speaker); Jeppsson, J.
Thermo-Calc Software AB, Solna (Sweden)

Seminar Room 6

C.02: Ceramics II

Session Chairs: *Prof. Dr. Jens Günster*
(Bundesanstalt für Materialforschung und -prüfung (BAM))

10:10 AM Lecture

Inkjet printing of thin, lead-free barium titanate piezoceramics

Ketterer, I. (Speaker)¹; Hanemann, T.²; Krämer, J.¹; Yang, C.-K.¹

¹Albert-Ludwigs-Universität Freiburg;
²Karlsruhe Institute of Technology

10:30 AM Lecture

From Conventional to Recycled Silicon: Process Development for Additive Manufacturing

Kunz, C. (Speaker)¹; Kuns, S.²; Schnurre, S.M.²; Schierning, G.³; Hufenbach, J.K.¹

¹Leibniz IFW Dresden; ²Institut für Umwelt & Energie, Technik & Analytik e.V., Duisburg;
³University of Duisburg-Essen, Institute for Energy and Materials Processes

AGR.01: Graded

Session Chairs: *Dr. Franziska Scheibel* (Technical University of Darmstadt)

11:40 AM Lecture online

Selective Laser Melting of uniform and graded Ti64 porous structures for hydrogen fuel cell technology

Babaló, V. (Speaker); Pereira, M.; Xu, W.; Wang, Y.; Paulino, M.
Deakin University, Geelong (Australia)

12:00 PM Lecture

Analysing the local mechanical, electrical and magnetic properties of hybrid structures made of 316L and 17-4 PH

Hoffmann, M.A.¹; Faßhauer, M.²; Hassel, T.²; Maier, H.J.²; Beck, T.¹; Blinn, B. (Speaker)¹
¹RPTU Kaiserslautern-Landau; ²Leibniz University Hannover

12:20 PM Lecture

Interface tailoring of steel-copper multimetal parts through Wire Electron Beam Additive Manufacturing (WEBAM)

Borges Esteves, P.D. (Speaker)
Swiss Federal Laboratories for Materials Science and Technology (EMPA), Thun (Switzerland)

12:40 PM Lecture

Thermal Analysis of Additively Manufactured Interpenetrating Copper-Steel Composites

Siegmund, F.; Böck, F. (Speaker); Dittman, K.; Weidenmann, K.A.
Universität Augsburg

G.01: Advanced laser-based post-processing in AM

Session Chairs: *Dr.-Ing. Matthias Markl*
(Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))

3:00 PM Lecture

From Polishing to Patterning: CLASCO's Intelligent Dual-Laser Solution for Advanced Surface Finishing

Andral, U. (Speaker)¹; Wang, W.²; Voisiat, B.²; Britz, D.²; Tabares, I.J.³; Heravi, H.⁴; Danishvar, M.⁴; Rostohar, D.⁴; Musavi, A.⁴; Cabañas, I.⁵; Steiger, C.⁶; Burry, T.¹; Lasagni, A.F.⁷
¹Sylas SAS, Port (France); ²Surfunction, Saarbrücken; ³Technische Universität Dresden; ⁴Z prime, London (United Kingdom); ⁵New Infrared Technologies, Madrid (Spain); ⁶Light Plasmio, Vienna (Austria); ⁷Fraunhofer institute for Material and Beam Technology IWS, Dresden

3:20 PM Lecture

Ti6Al4V medical devices with functional laser textures

Cloonan, A. (Speaker)¹; Tabares, I.²; Leavy, E.¹; Murphy, S.¹; Kavanagh, E.¹; Lasagni, A.²
¹Johnson & Johnson MedTech, Cork (Ireland); ²Technische Universität Dresden,

3:40 PM Lecture

Improvement of the Fatigue Behaviour of Additive Manufactured Alloys by Using Surface Improvement Processes Like Shot- and Laser Peening

Schepers, M. (Speaker)
Curtiss Wright, Unna

4:00 PM Lecture

Sustainable Laser-Based Post-Processing of LPBF Scalmetalloy®: From Surface Smoothing to Functional Microstructuring

Tabares, I. (Speaker)¹; Andral, U.²; Escudero Rodriguez, M.³; Lasagni, A.F.¹; Perrián Butrón, A.³; Voisiat, B.⁴; Wang, W.⁴
¹TU Dresden; ²SYLAS, Port (France); ³CATEC, Seville (Spain); ⁴Surfunction GmbH, Saarbrücken

AFU.03: Functional III

Session Chairs: *Prof. Dr. Isabella Gallino* (TU Berlin)

4:50 PM Lecture

Recent advances in additive manufacturing of Zr-, Cu, Ti, Ni, and Fe-based metallic glasses

Busch, R. (Speaker)
Saarland University, Saarbrücken

5:10 PM Lecture

Tailored gas atomization processes for the synthesis of amorphous metallic glass powders for additive manufacturing

Ellendt, N. (Speaker)¹; Wegner, J.²; Kleszczynski, S.²; Busch, R.³; Geppert, A.⁴
¹Universität Bremen; ²Universität Duisburg-Essen; ³Universität des Saarlandes, Saarbrücken; ⁴Leibniz-Institut für Werkstofforientierte Technologien, Bremen

5:30 PM Lecture

Structural Relaxation in PBF-LB/M of Ti-Based Bulk Metallic Glasses - Impact of Thermal History and Oxygen Uptake
Schönrrath, H.¹; Eisenhut, L.²; Wegner, J.¹; Busch, R.²; Kleszczynski, S. (Speaker)¹
¹Universität Duisburg-Essen; ²Universität des Saarlandes, Saarbrücken

5:50 PM Lecture

Additive Manufacturing of Bulk Metallic Glasses for Highly Resilient Compliant Mechanisms
Schwöppe, D. (Speaker)¹; Bruckhaus, L.¹; Busch, R.²; Ellendt, N.³; Kleszczynski, S.¹; Wegner, J.¹
¹University of Duisburg-Essen; ²Saarland University, Saarbrücken; ³University of Bremen

Foyer

Breaks

10:00 AM - 10:10 AM

Short Break

11:10 AM - 11:40 AM

Coffee Break

1:00 PM - 2:00 PM

Lunch Break

2:40 PM - 2:50 PM

Group Picture

2:50 PM - 3:00 PM

Short Break

4:20 PM - 4:50 PM

Coffee Break

Orangerie

Conference Dinner

7:30 PM - 11:00 PM

Conference Dinner @ Gartensaal at the Orangerie

26 Mar 2026 (Thu)

Lecture Room 5

Plenary Session IV

Session Chairs: *Dr.-Ing. Julia Richter (University of Kassel)*

9:00 AM Plenary Talk

Spatially Resolved Material Modification through Software and Machine Control: The Next Level of Additive Manufacturing
Kiener, C. (Speaker)¹; Kamps, T.²; Otto, R.¹; Reisch, R.T.¹; Söllner, U.¹
¹Siemens AG, München; ²Siemens AG

AST.04: Steel IV

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf (University of Kassel)*

9:50 AM Lecture

Influence of manufacturing characteristics of L-DED and WAAM on the microstructure of additively manufactured 316L and 17-4PH stainless steels

Triebe, A. (Speaker); Hebestreit, A.; Kerscher, E.
RPTU Kaiserslautern-Landau

10:10 AM Lecture

Modelling of nitrogen transport and loss during the additive manufacturing of martensitic steels

Büchholz, L. (Speaker)¹; Garthe, S.²; Becker, L.²; Mädler, L.¹; Weber, S.²; Ellendt, N.¹
¹University of Bremen; ²Ruhr-University Bochum

10:30 AM Lecture

Processing of High-Nitrogen Steel HNS in Series Production with MoldJet®

Gabriel, P. (Speaker)¹; Herzer, N.²; Teuber, R.¹
¹ProMateria GmbH, Essen; ²Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung IFAM, Dresden

10:50 AM Lecture

A novel high-performance medium-carbon tool steel adapted for laser powder bed fusion

Jin, Z. (Speaker); Kosiba, K.; Hufenbach, J.K.
Leibniz Institute for Solid State and Materials Research (IFW) Dresden

AST.05: Steel V

Session Chairs: *Dr.-Ing. Nils Ellendt (University of Bremen)*

11:40 AM Lecture

Production and characterization of novel Fe-based hard-face coating

Atalay, S.E. (Speaker)¹; Büyükuslu, Ö.K.²; Möbius, J.³; Oppermann, F.¹; Kreins, M.¹; to Baben, M.²; Lippmann, S.³; Neyer, C.⁴; Kopruch, L.¹; Krupp, U.¹
¹RWTH Aachen University; ²GTT-Technologies, Herzogenrath; ³Friedrich Schiller University Jena; ⁴stahlotec GmbH, Hagen

12:00 PM Lecture

Effect of surface condition on the fatigue strength of DED-Arc high-strength steel specimens

Köhler, M. (Speaker); Höfer, K.; Hensel, J.
TU Chemnitz

12:20 PM Lecture

Microstructural and Mechanical Characterization of High-Speed Steel Processed via Powder Metallurgy and Additive Manufacturing

Sahu, S. (Speaker)¹; Upadhyaya, A.¹; Krupp, U.²
¹Indian Institute of Technology Kanpur; ²RWTH Aachen University

12:40 PM Lecture
Microstructural Modification for Crack-Free Additive Manufacturing of Quenched and Tempered Martensitic Steels
Vyas, V. (Speaker)¹; Fleischer, R.²; Kreins, M.¹; Oppermann, F.¹; Hengsbach, F.²; Schaper, M.²; Krupp, U.¹
¹RWTH Aachen University; ²Universität Paderborn

Highlight Lecture VI

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf (University of Kassel)*

1:10 PM Highlight Lecture
Additive Manufacturing of copper and copper alloys: Managing the heat during the build process and in the final application

Gruber, S. (Speaker)¹; Schumpa, T.²; Stepien, L.³; Lopez, E.³; Brückner, F.⁴; Leyens, C.⁵
¹Fraunhofer Institute for Material and Beam Technology IWS Dresden; ²Fraunhofer Institute for Electron Beam and Plasma Technology FEP; ³Fraunhofer Institute for Material and Beam Technology IWS Dresden; ⁴Fraunhofer Institute for Material and Beam Technology IWS Dresden and Luleå University of Technology; ⁵Fraunhofer Institute for Material and Beam Technology University IWS and TU Dresden

Highlight Lecture VII

Session Chairs: *Prof. Dr.-Ing. Thomas Niendorf (University of Kassel)*

1:30 PM Highlight Lecture
Additive manufacturing of Nickel-Titanium based Shape Memory Alloys
Maaß, B. (Speaker)¹; Großmann, C.²
¹Ingpuls GmbH, Bochum; ²Ingpuls GmbH

General

1:50 PM - 2:00 PM
Poster Award and Closing Address
Niendorf, T. (Speaker)
University of Kassel

Lecture Room 4

ALM.05: Lightmetals V

Session Chairs: *Dr.-Ing. Julia Richter (University of Kassel)*

9:50 AM Lecture
Deformation mechanisms and deciding microstructural features in additively manufactured aluminium alloys
Basu, S. (Speaker); Brasche, F.; Haase, C.; Stockmar, J.
TU Berlin

10:10 AM Lecture
Microstructure, mechanical, and corrosion properties for additively manufactured AlSi10Mg alloy with deep rolling
Srivastav, H. (Speaker)¹; Koch, A.¹; Mrzljak, S.¹; Ott, L.²; Wegener, T.²; Niendorf, T.²; Walther, F.¹
¹TU Dortmund University; ²Universität Kassel

10:30 AM Lecture
PBF-LB/M in-situ deep rolling for microstructure modification and grain refinement
Tönjes, A. (Speaker)¹; Eibl, F.²; Mensching, N.¹; Meyer, D.¹; Altmann, M.L.¹
¹Leibniz Institute for Materials Engineering - IWT, Bremen; ²Aconity GmbH, Herzogenrath

AFU.04: Functional IV

Session Chairs: *Prof. Dr. Ralf Busch (Saarland University)*

11:40 AM Lecture
Additive manufacturing of Fe-based amorphous alloys for soft magnetics
Gallino, I. (Speaker)
TU Berlin

12:00 PM Lecture
Material development and characterization of soft magnetic FeCo49V2 alloys for additive manufacturing of electrical machines
Pelz, A. (Speaker)¹; Gianotta, N.²; Kallenbach, B.³
¹m4p material solutions GmbH, Magdeburg; ²Raw Power srl, Regio Emilia (Italy); ³m4p material solutions GmbH, Feistritz i.R. (Austria)

12:20 PM Lecture
Developing Fe-based Co-free soft magnetic amorphous alloys for the additive manufacturing of motor parts
Ghavimi, A. (Speaker)¹; Rahimi Chegeni, M.¹; Rajput, U.²; Sharangi, P.²; Tiberto, P.²; Barrera, G.²; Ferrara, E.²; Gallino, I.³; Busch, R.¹
¹Saarland University, Saarbrücken; ²INRIM, Istituto Nazionale di Ricerca Metrologica, Torino (Italy); ³Technical University of Berlin

12:40 PM Lecture
Additive Manufacturing of magneto- and multi-caloric materials – Advantages and challenges over the entire processing chain
Scheibel, F. (Speaker)
Technical University of Darmstadt

Seminar Room 6

ACO.03: Computational Approaches III

Session Chairs: *Dr.-Ing. Konrad Kosiba (Leibniz Institute for Solid State and Materials Research Dresden)*

9:50 AM Lecture

Particle-based modelling of the laser powder bed fusion process of metals, taking into account arbitrary laser profiles and temperature- and wavelength-dependent optical material properties

Wahn, A. (Speaker); Bierwisch, C. Fraunhofer IWM, Freiburg

10:10 AM Lecture

ML-based thermal management in Laser Powder Bed Fusion

Hanemann, T. (Speaker); Hackl, F.; Krauss, H.; Kleinhans, U.

EOS GmbH Electro Optical Systems, Krailling

10:30 AM Lecture

A Multi-Scale Framework for Macro-Scale LPBF Process Simulation – Case Study with Copper

Kremer, R. (Speaker)¹; Appel, T.²; Buhl, J.³; Foadian, F.⁴; Palkowski, H.³

¹FH Dortmund & TU Clausthal, Dortmund & Clausthal; ²FH Dortmund; ³TU Clausthal;

⁴BENTELER Steel/Tube GmbH & Co. KG, Dinslaken

AFU.05: Functional V

Session Chairs: *Dr.-Ing. Bastian Blinn (RPTU Kaiserslautern-Landau)*

11:40 AM Lecture

Printing Pure Cu on Ceramic Power Electronics Substrates

Sarfert, F. (Speaker); Echaniz, A.; Günther, I.; Schuster, S.; Zillmann, B.

Robert Bosch GmbH, Renningen

12:00 PM Lecture online

Physics-based integrated computational materials engineering in metal additive manufacturing processes

Bayat, M. (Speaker)

Technical University of Denmark, Kongens Lyngby (Denmark)

12:20 PM Lecture

Microstructural Evolution and Diffraction-Based Residual Stress Characterization in Additively Manufactured Copper

Niendorf, T. (Speaker)¹; Zeisberg, J.²

¹University of Kassel; ²University of Kassel

12:40 PM Lecture

In-situ monitoring and crack detection in laser powder bed fusion of power electronics for electric mobility

Bugatti, M. (Speaker)¹; Colosimo, B.M.¹;

Echaniz, A.²; Grasso, M.¹; Sarfert, F.²

¹Politecnico di Milano; ²Robert Bosch GmbH, Stuttgart

Foyer

Breaks

9:40 AM - 9:50 AM

Short Break

11:10 AM - 11:40 AM

Coffee Break

1:00 PM - 1:10 PM

Short Break

Poster

A: AM with metals

A-18 Poster-Pitch-Presentation online

Development of Axial-Flow Impeller with Multi-material Blades of IN718 and SS316L by Wire Arc Additive Manufacturing and its Mechanical Properties

Ejiri, S. (Speaker)

A-61 Poster-Pitch-Presentation

Challenges in predictive design and manufacturing regarding fatigue

performance of DED-Arc components

Köhler, M. (Speaker); Höfer, K.; Hensel, J.

A-103 Poster-Pitch-Presentation

The Crystallographic Texture Effect in Additively Manufactured 316L Stainless Steel Biomaterials

Türkpençesi, B.İ. (Speaker)¹; Davut, K.¹; Garıpcan, B.²; Güden, M.¹; Hoyer, K.-P.³; Soykan, Ş.²; Uzer, B.¹

A-143 Poster-Pitch-Presentation

Unlocking New Materials and Applications with High-Productivity Slurry-based Binder Jetting of Near-Net-Shape Metal Components

Angenoorh, J.; Wächter, D.; Günther, D.; Erhard, P. (Speaker)

A-164 Poster-Pitch-Presentation

Additive Manufacturing of Bulk Metallic Glasses

Elsen, A. (Speaker)

A-169 Poster-Pitch-Presentation

Investigation of the Recrystallization Mechanism in Additively Manufactured Inconel 718 Through Comparison of the Heat Treatment of DED-Arc/W, DED-LB/P, and PBF-LB

Nazarahari, A. (Speaker)¹; Joseph, C.²; Ghassemali, E.¹

A-170 Poster-Pitch-Presentation

Effect of powder feed rate on microstructure evolution and martensitic transformation in Co-Ni-Ga high temperature shape memory alloy processed by laser beam directed energy deposition

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

A-173 Poster-Pitch-Presentation
In Situ X-Ray Imaging of Particle Behavior in the Melt Pool During DED Additive Manufacturing
Dommaschk, T. (Speaker)¹; Nobach, M.¹; Lauhoff, C.¹; Bolender, A.¹; Chapman, H.²; Chen, Y.³; Sket, F.⁴; Lee, P.D.²; Niendorf, T.¹

A-174 Poster-Pitch-Presentation
Learning From EOSTATE Exposure OT: A Deep Learning Path to Scalable, Pre-Build Quality Prediction
Hackl, F. (Speaker); Hanemann, T.; Krauss, H.

A-176 Poster-Pitch-Presentation
Study of the Functional Properties of Ni-Mn-Ga-Cu Magnetic Shape Memory Alloys Powder in an ABS-matrix Composite Filament
Vaquero-Crespi, J. (Speaker)¹; Salas, D.¹; Herrera, E.G.²; Torrens-Serra, J.¹; Santamarta, R.¹; Seguí, C.¹; Sánchez-Alarcos, V.²; Pons, J.¹

A-178 Poster-Pitch-Presentation online
NiTi-Ti layered material 3D-printed with electron beam and wire
Koval, Y.; Filatova, V.; Kedrovskiy, S.; Odnosum, V.; Bondarchuk, V.; Filatov, A.; Firstov, G. (Speaker)

A-179 Poster-Pitch-Presentation
The influence of welding speed on geometry, porosity, and microstructure of AlSi10Mg multilayer structures manufactured with plasma arc and powder-based DED
Vieweger, D. (Speaker); Rotzsche, S.; Tong, Y.; Vincic, J.; Mayr, P.

A-184 Poster-Pitch-Presentation
Additive Manufacturing of Spinodoid Architectures Via Laser Powder Bed Fusion
Kancharla, D. (Speaker); Leyens, C.; Marquardt, A.

B: AM with polymers

B-31 Poster-Pitch-Presentation
Compensation of Under- and Over-Extrusion caused by sudden Feed Rate Changes using a Single-Screw Extruder
Johannsen, E. (Speaker)¹; Schmidt, J.-U. R.¹; Jaehnicke, J.²; Janning, T.S.¹

B-182 Poster-Pitch-Presentation
Fourier Transform Infrared Spectroscopy Analysis of Arburg Plastic Free-formed Electrically Conductive PVDF Components Processed in Different Form Factors
Arikan, N. (Speaker)¹; Celik, O.¹; Klier, K.²; Hartung, M.²; Mutlu, I.¹; Yagci, Y.E.³; Kadiroglu, U.¹; Heim, H.-P.²

C: AM with ceramics

C-131 Poster-Pitch-Presentation
Fabrication of Polymer-Derived Ceramic Thin-Films via Inkjet Printing
Qazzazie-Hauser, A. (Speaker)¹; Krämer, J.¹; Honnef, K.¹; Hanemann, T.²

D: Direct design of microstructure and properties

D-44 Poster-Pitch-Presentation
Substitution of case hardening process by laser metal deposition generated bulk material with carbon gradient
Stelling, O. (Speaker)¹; Steinbacher, M.²; Ellendt, N.¹

D-89 Poster-Pitch-Presentation
Modelling and 3D printing of square grid auxetic structure: experimental and simulation study of the impact of changing unit cell parameters on mechanical properties
Hassan, H. (Speaker); Vandeginste, V.

D-134 Poster-Pitch-Presentation
Microstructure Design via Additive Manufacturing of Magnetic Shape Memory Heusler Alloys for Multicaloric Applications
Teinor, N.N. (Speaker)

D-136 Poster-Pitch-Presentation
Unraveling the Magnetic Interactions of Nanocrystalline Rare-Earth-Lean Nd-Fe-B Powder and the Influence of Additive Manufacturing on the Magnetic Properties
Sahoo, P. (Speaker)¹; Schäfer, L.¹; Schäfer, K.¹; Adabifiroozjaei, E.¹; Hlawaty, R.¹; Gabriel, P.²; Stratmann, N.²; Bruder, E.¹; Molina-Luna, L.¹; Durst, K.¹; Ziefuß, A.R.²; Barcikowski, S.²; Gutfleisch, O.¹; Skokov, K.¹

E: Process monitoring and process quality assurance in AM – From in-situ methods to post-processing routines

E-145 Poster-Pitch-Presentation
In-situ XRD Analysis of Phase Transformations in CrMnNi TRIP Steel during DED-LAM
Farashi, Z. (Speaker)¹; Bolender, A.²; Honkimaki, V.³; Hunt, S.⁴; Lee, P.⁵; Niendorf, T.²; Le, T.¹; Easton, M.¹; Chen, Y.¹

F: Development of AM feedstocks, alloys and processes by experimental and/or simulation-based methods

F-165 Poster-Pitch-Presentation
High-Temperature Gas Atomization: Reduced Gas Consumption and Enhanced Powder Fineness for Additive Manufacturing
Geppert, A.K. (Speaker)¹; Weicht, A.¹; Evers, S.²; Achelis, L.²; Uhlenwinkel, V.¹; Fritsching, U.²

F-168 Poster-Pitch-Presentation
**Phase-Field-Crystal Plasticity
Modeling of Solidification and Type-
III Residual Stress in Nickel-Based
Superalloy CM247LC**

Salem, M. (Speaker)¹; Espadero, M.¹; Banes, H.¹; Jadhav, P.¹; Lu, Y.²; Basoalto, H.¹

F-181 Poster-Pitch-Presentation
**From Irregular Powders to Engineered
Particles: Microwave Plasma Gas-
Phase Processing of Spherical Micro-
and Nanomaterials for Additive
Manufacturing Applications**

Kuns, S.¹; Kunze, F.¹; Underberg, M.¹; Stahlmecke, B.¹; Kunz, C.²; Hufenbach, J.K.²; Hülser, T.P.¹; Schnurre, S.M. (Speaker)¹

**G: Advanced laser-based post-
processing in AM**

G-177 Poster-Pitch-Presentation
**Wettability tailoring of AM Ti64
and Scalmalloy via a dual process
of laser polishing and Direct Laser
Interference Patterning**

Tabares, I. (Speaker)¹; Andral, U.²; Cloonan, A.³; Escudero Rodriguez, M.⁴; Kavanagh, E.³; Lasagni, A.F.¹; Periñan Butrón, A.⁴

**H: Additive Manufacturing on
Hybrid Substrates**

H-135 Poster-Pitch-Presentation online
**Hydrogen Resistant Coatings for Existing
Pipelines and Novel Pipelines Made of
Woven Carbon Fiber Using High-Speed
DED Process**

Müller, C.J. (Speaker); Grigat, N.; Grün, V.

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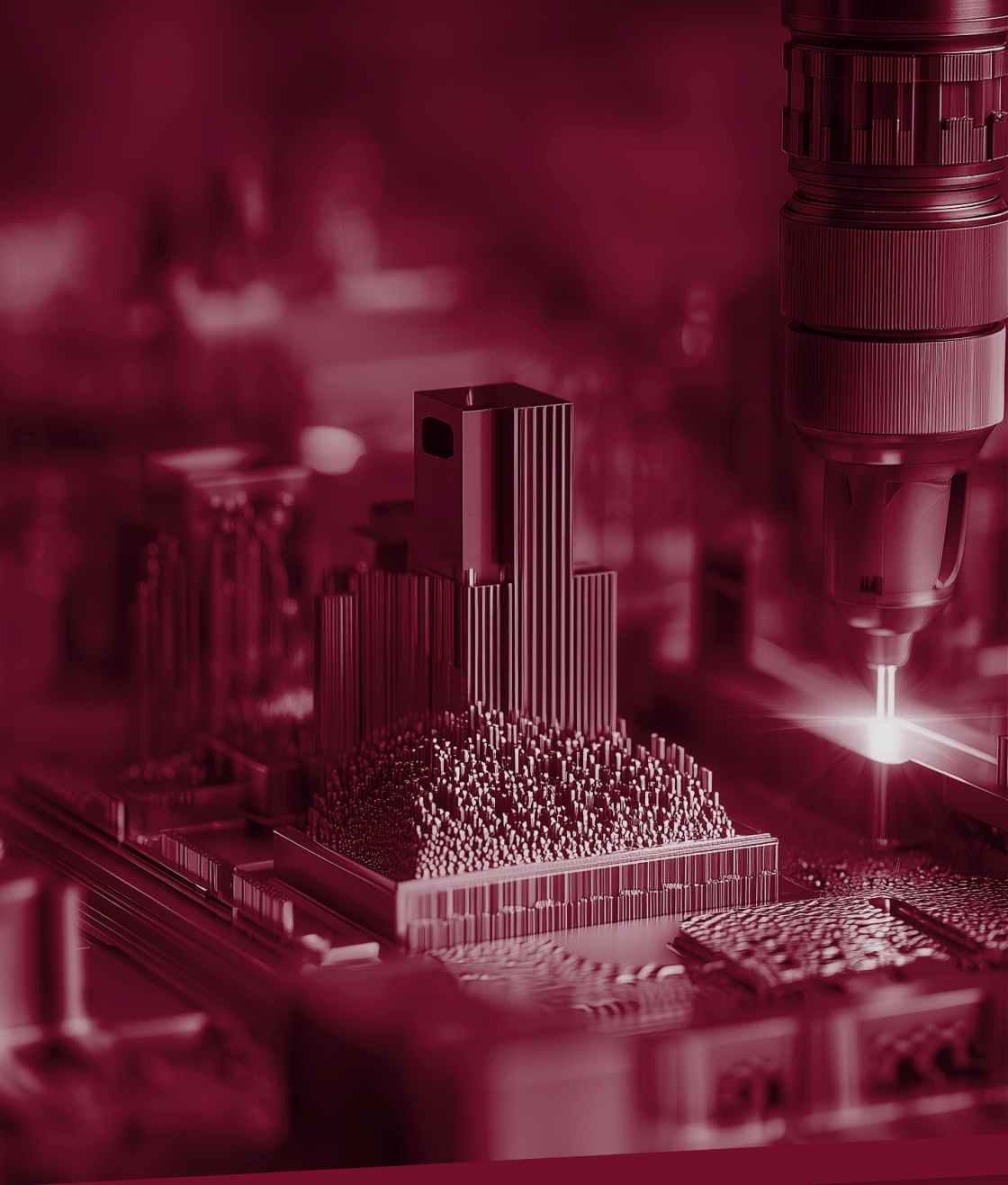
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