# EMATec 2026

2-5 June 2026, Dresden / Radebeul

Fraunhofer IFAM

EMATec

## Tuesday, 2 June 2026

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| 17:00 | **Registration** |
| 19:00 | **Welcome Reception** |

## Wednesday, 3 June 2026

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| 09:00 | **OPENING**<br>**Prof. Dr.-Ing. Thomas Weißgärber**<br>Fraunhofer IFAM Dresden / TU Dresden<br><br>**WELCOME ADDRESS**<br>**Prof. Dr. Heike Graßmann**<br>State Secretary at the Saxon State Ministry for Science, Culture and Tourism<br>**Jan Pratzka**<br>Mayor of the City of Dresden; Division Economy, Digital, Personnel and Security<br>**Prof. Dr.-Ing. Thorsten Schmidt**<br>Dean of the Faculty of Mechanical Engineering, TU Dresden |
| | **PLENARY SESSION**<br>(Chair: Prof. Dr.-Ing. Thomas Weißgärber) |
| 09:30 | **Markus Schneider, GKN Sinter Metals**<br>The production of functional materials via powder metallurgy and its dependency on the global supply chain |
| 10:00 | **Arno Plankensteiner, Plansee**<br>Mechanism-based modeling and numerical simulation enhancing data-driven PM process and component optimization for refractory metals applications |
| 10:30 | Coffee Break |

| | Powder Manufacturing<br>(Chair: Jai-Sung Lee, Hanyang University) | H2 - Materials for Electrolysis<br>(Chair: Christian Bernäcker, Fraunhofer IFAM Dresden) | Soft Magnets – Nanocrystalline<br>(Chair: Konrad Güth, Fraunhofer IWKS) |
|---|---|---|---|
| 11:00 | **Burghardt Klöden, m4p material solutions GmbH**<br>Pushing the boundaries in additive manufacturing: customized alloys for specific applications & powder quality aspect | **Vesna Middelkoop, VITO**<br>3D printing of architectures for photo- and electro-chemical applications - multiscale characterisation | **Jae Won Jeong, Korea Institute of Materials Science**<br>Effect of co-added transition metal elements on the glass forming ability and soft magnetic properties of high-Ms nanocrystalline alloys |
| 11:20 | **Kenan Boz, EPMA**<br>Sustainable solutions for Titanium supply in Additive Manufacturing | **Nadine Eißmann, Fraunhofer IFAM Dresden**<br>Tailoring the properties of open-porous metallic foams by powder metallurgical coatings | **Przemysław Zackiewicz, Lukasiewicz Research Network - Institute of Non-Ferrous Metals**<br>Enhancing magnetizable concrete cores with nanocrystalline additives |
| 11:40 | **Arun Chattopadhyay, AMAERO Inc**<br>Atomization and characterization of Tungsten heavy alloy powders | **Oluwajuyigbe Tomisin, University of Waterloo**<br>Porous transport layer optimization via Additive Manufacturing of Inconel 718 lattice structures | **Peter Nahringbauer, TU Wien**<br>Ultrasonic atomization as a route to nanocrystalline soft magnetic powders |
| 12:00 | **Philip Grimm, Leibniz Institute for Solid State and Materials Research Dresden**<br>Casting assisted design of a high-performance Sc-free Al-Mg-Si-Zr alloy for laser powder bed fusion | **Sebastian Riecker, Fraunhofer IFAM Dresden**<br>Advancing hydrogen technologies through Additive Manufacturing | **Merlin Thamm, Fraunhofer IFAM Dresden**<br>Powder metallurgical processing of nanocrystalline soft magnets |
| 12:20 | Lunch | | |

| | AM Process Design<br>(Chair: Christian Kukla, Montanuniversität Leoben) | H2 Storage Materials I<br>(Chair: Guilherme Zepon, Federal University of São Carlos) | Soft Magnets – AM<br>(Chair: Thomas Studnitzky, Fraunhofer IFAM Dresden) |
|---|---|---|---|
| 13:50 | **Simon Leupold, Friedrich-Alexander-Universität Erlangen-Nürnberg**<br>ColdMetalFusion of AISI 316L stainless steel: Effects of laser wavelength on density, surface roughness and dimensional accuracy | **Claudio Pistidda, Helmholtz-Zentrum Hereon**<br>Advancing circularity: Hydrogen-storage materials and strategic metal recovery | **Julian Schurr, Aalen University**<br>Additive Manufacturing of multi-material soft magnetic components for electrical machines |
| 14:10 | **Quentin Schmid, RMIT Europe**<br>High fidelity environmental impact prediction of AM-based hybrid manufacturing systems | **Marcus Vogt, Fraunhofer IFAM Dresden**<br>A circular magnesium route linking PM electrodes, electrolysis and POWERPASTE | **Taehyeob Im, Hanyang University**<br>Sinter-based 3D-printed metal-insulation-metal (MIM) structures using Fe-6.5Si for soft magnetic cores |
| 14:30 | **Feyzi Emrah Başar, TUD Dresden University of Technology**<br>A concept for automated support removal in SLM using 5-axis CNC milling | **Bruno Hessel Silva, University of Oslo**<br>Design of multicomponent alloys for room temperature hydrogen storage: engineering microstructure and tuning properties | **Bruno Weise, Fraunhofer IFAM Dresden**<br>Advances in additive screen printing of electrical steel |
| 14:50 | **Eberechukwu Dim, Enugu State University of Science and Technology**<br>Technological maturity assessment of Additive Manufacturing technology reviewed | **Nicol Daniela Jaramillo Rodriguez, Helmholtz-Zentrum Hereon**<br>Sustainable synthesis of TiFe-based alloys for hydrogen storage: Influence of synthesis method and manganese substitution | |

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## Wednesday, 3 June 2026 (continued)

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|---|---|---|---|
| 15:10 | Coffee Break | | |
| | **AM Production**<br>(Chair: Burghardt Klöden, m4p material solution GmbH) | **H2 Storage Systems**<br>(Chair: Felix Heubner, Fraunhofer IFAM Dresden) | **PM for Nuclear Applications**<br>(Chair: Dariusz Garbiec, Łukasiewicz – PIT) |
| 15:40 | **Christian Staudigel, Headmade Materials**<br>ColdMetalFusion - Eliminating laser-sintering porosity in green parts via Cold Isostatic Pressing | **Xin Wei, Johnson Electric Aachen GmbH**<br>AI-driven alloy design and industrial manufacturing of metal hydride systems | **Jai-Sung Lee, Hanyang University ERICA**<br>Advances in high-density W-Cu alloy processing by nanopowder technology |
| 16:00 | **Omer Sagi, Tritone**<br>Additive Manufacturing of fully enclosed hollow metal structures with complex internal geometry | **Jan Warfsmann, Helmholtz-Zentrum Hereon**<br>Investigation of the hydrogen storage performance by the in-situ combination of an AB2-metal hydride and PCM | **Mike Parkin, CERN - European Organisation for Nuclear Research**<br>Hot-isostatic pressing for CERN's beam intercepting devices |
| 16:20 | **Christian Staudigel, Headmade Materials**<br>ColdMetalFusion - Industrial process capability in production | **Alexander Wimmer, DLR-TT**<br>Additive manufactured high-performance reactor for metal hydride-based air-conditioning of fuel cell electric vehicles | **Uwe Funk, Dr. Fritsch GmbH**<br>Industrialization of intelligent alloys (SMART) and tungsten fiber reinforced tungsten composites (FitWf/W) for fusion power plants |
| 16:40 | **Uta Klement, Chalmers University of Technology**<br>Incorporation and characterization of graphene derivatives in thermal spray coatings and additively manufactured parts | **Davide Violi, MetHydor Srl**<br>Improving thermal conductivity on a metal hydride hydrogen storage tank | **Goulven Janod, CEA Grenoble**<br>Automated heatsink optimization for divertor cooling application |
| 17:00 | Coffee Break | | |
| | **Nickel-based AM**<br>(Chair: Martin Werz, MPA Stuttgart) | **Materials for Thermal Energy Storage**<br>(Chair: Nadine Eißmann, Fraunhofer IFAM Dresden) | **Hard Magnets I**<br>(Chair: Jae Won Jeong, Korea Institute of Materials Science) |
| 17:30 | **So-Yeon Park, Inha University**<br>Plate-strut hybrid design for strengthening Kelvin-Truss Inconel 718 lattice structures | **Sabrine Medjouel, CIRIMAT**<br>Innovative Freeze-Casting Manufacturing of 3D Copper Foams with Tailored Architecture for Energy Applications | **Lukas Schäfer, Technische Universität Darmstadt**<br>Recycling and Additive Manufacturing of Nd-Fe-B: Challenges and prospects for resource Efficient permanent magnets |
| 17:50 | **Ho Jin Ryu, Korea Advanced Institute of Science and Technology KAIST**<br>In situ alloying in metal Additive Manufacturing of ceramic-reinforced Ni-base superalloys | **Rico Schmerler, Fraunhofer IWU**<br>Investigation of PCM infiltrated aluminum foam for heat storage in an EV battery system | **Konrad Güth, Fraunhofer IWKS**<br>The 2-powder method for producing resource-efficient and more sustainable Nd-Fe-B magnets |
| 18:10 | **Christian Staudigel, Headmade Materials**<br>ColdMetalFusion – Applications of Nickel-based alloys in oil & gas and energy | **Torsten Seidel, Fraunhofer IFAM Dresden**<br>Advancing air compression technologies with a thermal compressor utilizing phase change materials and metal fiber-based heat conductive structures | **Tae-Hoon Kim, Korea Institute of Materials Science**<br>Insight into Development of Pr-based Grain Boundary Diffusion Process for High-Performance HRE-Free Nd-Fe-B Sintered Magnets |
| 18:30 | Break | | |
| 19:00 | **Poster Session** | | |

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## Thursday, 4 June 2026

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| | **PLENARY SESSION**<br>(Chair: Dr.-Ing. Inge Lindemann) | | |
| 09:00 | **Animesh Bose, Shaping Innovations, Inc.**<br>Binderjet: Past, Present and Future | | |
| 09:30 | **Simon Höges, GKN AM**<br>Successes in serial production with AM technologies – How we can expand PM opportunities in new markets | | |
| | **AM Post Processing**<br>(Chair: Ho Jin Ryu, Korea Advanced Institute of Science and Technology KAIST) | **H2 Storage Materials – HEA**<br>(Chair: Mateusz Balcerzak, Fraunhofer IFAM Dresden) | **Hard Magnets II**<br>(Chair: Markus Schneider, GKN Sinter Metals) |
| 10:10 | **Florian Döring, Neue Materialien Bayreuth GmbH**<br>Automated surface treatment method for combined depowdering and smoothing of SLS-printed metal green parts using Cold Metal Fusion Technology (AutoSmooth) | **Guilherme Zepon, Federal University of São Carlos**<br>Gas Shielded Arc Melting (GSAM) process to produce hydride-forming multicomponent alloys | **Christian Kukla, Montanuniversität Leoben**<br>In-situ particle alignment in Powder Extrusion Moulding (PEM) of NdFeB magnets |
| 10:30 | **Konrad Kosiba, Leibniz Institute for Solid State and Materials Research Dresden**<br>Bayesian optimization for laser powder bed fusion of defect-free AA2024 | **Bartosz Morończyk, AMAZEMET Sp z o.o.**<br>Ultrasonic atomization of high-entropy metal powders for solid-state hydrogen storage | **H.J. Blüm, MUT Advanced Heating**<br>Hydrogen processing for rare-earth magnet production |
| 10:50 | **David Bacher, TUD Dresden University of Technology**<br>A generic pre-/postprocessor for non-planar G-code generation in FDM printing | **Jéssica Bruna Ponsoni, Federal University of São Carlos**<br>Tuning hydrogen absorption in the (Ti0.5Zr0.5)1(Fe0.5Mn0.5)2 C14 Laves phase alloy through Ce addition | **Mahmudul Hasan, Fraunhofer IWKS**<br>Dismantling and recyclability of Nd-Fe-B magnets from electric motors: strategies for circular product design |
| 11:10 | Coffee Break | | |
| | **AM Powder Bed Processes**<br>(Chair: Anke Kaletsch, RWTH Aachen) | **PM Recycling**<br>(Chair: Johannes Trapp, Fraunhofer IFAM Dresden) | **Thermal Management**<br>(Chair: Simon Höges, GKN AM) |
| 11:40 | **Sasidharan Periane Natarajan, Wayland Additive**<br>NeuBeam® Electron Beam AM: A novel and unique pathway for high-performance alloy 718 | **Min-Kyu Paek, Clausthal University of Technology**<br>Development of thermodynamic database for recycling and refining of Ti-V-Al alloy melt | **Giulia Ferri, Snam SpA**<br>Electrified steam methane reforming with 3D-printed copper structures: A novel approach for low-carbon hydrogen production |
| 12:00 | **Jingjia Sun, Nanjing University of Aeronautics and Astronautics**<br>Performance enhancement and crack control in Laser Powder Bed Fusion of Hastelloy X | **Abhishek Maurya, Indian Institute of Technology Madras**<br>Green recycling of Aluminium alloys: Microwave-based solid-state technique for composite sheet fabrication | **Thomas Hutsch, Fraunhofer IFAM Dresden**<br>Complex shaping of copper diamond using gel casting and quasi-static SPS |
| 12:20 | **Alexander Wenda, Montanuniversität Leoben**<br>Processing of a novel oxide dispersion strengthened iron based high temperature alloy via Laser-Powder Bed Fusion | **Gabriel Caballero García, Universidad Carlos III de Madrid**<br>Circular metal powders: Transforming scrap into AM-grade feedstocks for g-MEX extrusion | **Paul Peritsch, Incus GmbH**<br>High-performance copper components via Lithography-Based Metal Manufacturing for advanced thermal management |
| 12:40 | **Martin Werz, Materialprüfungsanstalt Universität Stuttgart**<br>Mechanical and corrosion testing of additively manufactured Inconel 718 and AISI 316L at high temperatures | **Samuel Lister, University of Sheffield**<br>Dissimilar rotary friction welding of Titanium swarf billets consolidated via Field Assisted Sintering technology | **Sandra Wieland, Fraunhofer IFAM Bremen**<br>Metal-powder-rich polymer composites for lightweight conductive structures, heat dissipation and EMC protection |
| 13:00 | Lunch | | |
| 14:30 | **KEYNOTE**<br>(Chair: Prof. Dr.-Ing. Thomas Weißgärber)<br>**Olaf Andersen, Fraunhofer IFAM Dresden**<br>Status and Prospects for the Application of Cellular Metals in Industrial Practice | | |
| | **AM Debinding & Sintering**<br>(Chair: Oliver Schenk, RWTH Aachen) | **PM Characterisation**<br>(Chair: Hongyu Chen, Nanjing University) | **Biomaterials**<br>(Chair: Kee-Ahn Lee, Inha University) |
| 15:10 | **Florian Jürries, Chalmers University of Technology**<br>Multi-material lithography-based Additive Manufacturing: Considerations for debinding | **Gerhard Weber, Dr. Fritsch GmbH**<br>Audio-Sense: Analyzing FAST/SPS audio signals | **György Harakaly, Incus GmbH**<br>Lithography-based Metal Manufacturing: Process development for biomedical devices |
| 15:30 | **Gabriele Muraca, Chalmers University of Technology**<br>Debinding optimization for Multi-Material Cu-$Al_2O_3$ components produced via Lithography-based Additive Manufacturing | **Julian Reeh, Headmade Materials**<br>ColdMetalFusion - Fatique of Ti6Al4V as-sintered and HIP | **Dumitru Mitrica, R&D Institute for Nonferrous and Rare Metals - IMNR**<br>Modelling and selection of high entropy alloys for bacterial corrosion resistance |
| 15:50 | **Tim Küsters, Carbolite Gero GmbH & Co. KG**<br>Part quality, sustainability, and performance: A comparison between graphite and metallic lined MIM furnaces | **Ulrike Jehring, Fraunhofer IFAM Dresden**<br>Mechanical characterisation of PM and AM components | **Jia-Chang Wang, National Taipei University of Technology**<br>Feasibility study of dental Zirconia discs Recycling applied to solvent-based slurry stereolithography printing |
| 16:10 | **Thomas Studnitzky, Fraunhofer IFAM Dresden**<br>Materials and processes in Additive Manufacturing – is any combination possible? | **Witold Węglewski, Institute of Fundamental Technological Research Polish Academy of Sciences**<br>The influence of material models and mesh quality on the accuracy of micro-XCT-based finite element simulations of thermal residual stresses in alumina-chromium sintered composites | |

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|---|---|---|---|
| 16:30 | Coffee Break | | |
| | **Space & Defense**<br>(Chair: Olaf Andersen, Fraunhofer IFAM Dresden) | **New Material Concepts I**<br>(Chair: Sebastian Riecker, Fraunhofer IFAM Dresden) | **Workshop on high-performance aluminium alloys and composites (parallel project meeting for separate registrations only)** |
| 17:00 | **Erich Neubauer, RHP Technologies**<br>Assessment of different Additive Manufacturing methods for printing of 4D components | **Yohann Thimont, CIRIMAT**<br>Binder Jetting coupled with Spark Plasma Sintering for the manufacturing of MnSiy thermoelements with specific geometries | |
| 17:20 | **Fatih Gözüküçük, Hamburg University of Applied Sciences**<br>Additive Manufacturing and Compression Behaviour of Spherene, Gyroid, and Hexagonal Cellular Structures via Metal Fused Granulate Fabrication | **Kamil Bochenek, IPPT PAN**<br>Rhenium-modified hot-pressed AlCoCrFeNi high-entropy alloys: Strengthening and microstructural refinement effect | |
| 17:40 | **Javier Hidalgo, Universidad de Castilla-La Mancha**<br>Pushing material extrusion Additive Manufacturing toward Titanium mesostructures for next-generation aerospace applications | **Johannes Pötschke, Fraunhofer IKTS**<br>Beyond WC-Co: Supply-resilient hardmetals based on the high-entropy concept | |
| 18:00 | Break | | |
| 19:00 | **Conference Dinner** | | |

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| | Friday, 5 June 2026 | |
|---|---|---|
| | **PLENARY SESSION**<br>(Chair: Dr.-Ing. Felix Heubner) | |
| 09:00 | **Matthias Scharvogel, Element 22**<br>Scaling up the manufacturing of Titanium powder metallurgy products used in medical, aerospace, energy and high-end consumer products industries | |
| 09:30 | **Kee-Ahn Lee, Inha University**<br>Fabrication, structural and mechanical properties of porous materials by using powder metallurgy and Additive Manufacturing | |
| | **H2 Storage Materials II**<br>(Chair: Claudio Pistidda, Helmholtz Zentrum Hereon) | **New Material Concepts II**<br>(Chair: Bruno Weise, Fraunhofer IFAM Dresden) |
| 10:10 | **Peter Hannappel, Fraunhofer IFAM Dresden**<br>Digitalizing materials development for hydrogen storage applications | **Parthiban Ramasamy, Erich Schmid Institute of Materials Science of the Austrian Academy of Sciences**<br>Influence of Mo micro-particles on crack formation, microstructure, and mechanical behaviour of laser powder bed fusion fabricated CuZrAl bulk metallic glass composites |
| 10:30 | **Jan Krusenbaum, RWTH Aachen**<br>Mechanochemical synthesis and recycling of a deactivated TiMn2 hydrogen storage alloy | **Jiayan Yu, TU Bergakademie Freiberg**<br>In-situ formation of TiC from recycled MgO-C refractories and structural characterization by Rietveld refinement |
| 10:50 | **Gabriela C. Mayer, Federal University of São Carlos**<br>Impact of distinct cycling conditions on hydride stability of the Ti11Nb61Cr28 alloy for hydrogen storage | **Behzad Sadeghi, Austrian Academy of Sciences**<br>Laminated CNT-RGO/Al hybrid composites for exceptional high-cycle fatigue and impact energy absorption |
| 11:10 | Coffee Break | |
| | **Materials for Extreme Environments**<br>(Chair: Erich Neubauer, RHP Technologies) | **AM Simulation**<br>(Chair: Florian Jürries, Chalmers University) |
| 11:40 | **Hongju Chen, Nanjing University of Aeronautics and Astronautics**<br>Unusual deformation substructure and strain hardening in an additively manufactured CoCrFeMnNi high entropy alloy under extreme environment | **Oliver Schenk, RWTH Aachen**<br>AI-based prediction of the microstructure of green bodies produced by LMM |
| 12:00 | **Dinh Van Cong, University of Ulsan**<br>Effects of thermal exposure on microstructural stability and mechanical performance of an ODS Ni-based alloy fabricated by Spark Plasma Sintering | **Jakob Scheibler, Fraunhofer IFAM Dresden**<br>Prediction of sinter deformation in sinter-based AM – Simulation vs. reality |
| 12:20 | **Adam Hunt, Globus Metal Powders**<br>Development of 718 Nickel superalloy via PM-HIP for oil and gas application | **Li Yanze, Nanjing University of Aeronautics and Astronautics**<br>Multi-scale phase field modeling for Laser Additive Manufacturing: Crystal growth prediction and mechanical property enhancement |
| 12:40 | **Yanan Zhao, Nanjing University of Aeronautics and Astronautics**<br>Composition design and strengthening-toughening of crack-resistant nickel-based superalloys for laser additive manufacturing | |
| 13:00 | **CLOSING** | |
| 13:10 | Lunch | |
| 14:30 - 18:00 | **Option: Excursion Fraunhofer Institute Center Dresden** | |

We would like to thank our sponsors and partners:

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DR. FRITSCH

WAYLAND ADDITIVE

I2SN Kofinanziert von der Europäischen Union. Diese Maßnahme wird mitfinanziert durch Steuermittel auf der Grundlage des vom Sächsischen Landtag beschlossenen Haushaltes.

IFW Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden

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