

International Symposium Materials Science and Technology of Additive Manufacturing



08:00 – 09:00 Registration (Bremen Airport, Bremenhalle, 2nd Floor)

Day 1: Dec. 10th Introduction & Keynotes	
<i>Prof. Dr.-Ing. Vasily Ploshikhin, Head of Airbus endowed chair ISEMP, University of Bremen, Germany</i>	
09:00 – 09:15	Opening Prof. Dr.-Ing. Vasily Ploshikhin, Head of Airbus endowed chair ISEMP, University of Bremen, Germany
09:15 – 09:30	Welcome Address Hans-Georg Tschupke, Ministry of Economic Affairs, Labour and Ports, Bremen, Germany
09:30 – 09:50	Keynote: Direct Energy Deposition @Airbus Dr. Claudio Dalle Donne, Head of Materials, Process and Testing Airbus Bremen, Germany
09:50 – 10:10	Keynote: NextGenAM: new generation of industrial metal additive manufacturing Dr.-Ing. Thomas Bielefeld, Head of Additive Manufacturing Premium AEROTEC GmbH, Germany
10:10 – 10:30	Keynote: Perspectives of Additive Manufacturing @ ArianeGroup Moritz Brünger, AM and R&T Coordinator, Future Launchers Architecture ArianeGroup GmbH, Germany
10:30 – 11:00	Networking & Exhibiton Break
Session 1 Novel AM Materials & PBF Processes	
<i>Frank Palm, Senior Expert Additive Manufacturing & Welding Airbus Central Research & Technology, Germany</i>	
11:00 – 11:15	Adjusted process conditions in Laser Powder Bed Fusion to obtain a single-crystal-like microstructure in IN718 M.Sc. Christoph Seyfert, EOS GmbH, Germany
11:15 – 11:30	Industrial Aerospace applications of Scalmalloy Sébastien Eyrygnoux, LISI AEROSPACE Additive Manufacturing, France
11:30 – 11:45	PBF-LB Process Parameter Development and Heat Treatments for a nano-duplex AlCrFe2Ni2-based High Entropy Alloy Dimitrios Vogiatzief, Oerlikon AM GmbH, Germany
11:45 – 12:00	Additive manufacturing of the refractory metal high entropy alloy W20Mo20Ta20Nb20V20 M.Sc. Florian Huber, Lehrstuhl für Photonische Technologien, Germany
12:00 – 13:15	Lunch & Exhibition Break
Session 2 Material & Process Control, Testing & Qualification	
<i>Dr.-Ing. Kai Schimanski, Head of Industrial Technology Varel Premium AEROTEC GmbH, Germany</i>	
13:15 – 13:30	Influence of powder bed density on part quality for laser fusion additive manufacturing Dipl.-Ing. (FH) Sebastian Edelhäuser, EOS GmbH Electro Optical Systems, Germany
13:30 – 13:45	Efficient qualification strategy of new tool steel alloys for Laser Powder Bed Fusion Dr.-Ing. Frederik Zanger, Karlsruher Institut für Technologie - wbk Institut für Produktionstechnik, Germany
13:45 – 14:00	Challenges and approaches for metrology of additive manufactured lattice structures by industrial X-ray computed tomography Philip Sperl, Volume Graphics GmbH, Germany
14:00 – 14:15	Diffraction-based experimental determination of Residual Stress in AM parts: A critical discussion Prof. Dr. Giovanni Bruno, Bundesanstalt für Materialforschung und -prüfung(BAM), Germany
14:15 – 14:30	Development and qualification of a serial production launcher part made of titanium Dr.-Ing. Loreen Mertens, ArianeGroup GmbH, Germany
14:30 – 15:00	Networking & Exhibiton Break
Session 3 Oral Poster Presentations	
<i>Dr.-Ing. Kai Schimanski, Head of Industrial Technology Varel Premium AEROTEC GmbH, Germany; Dr. Jan-Patrick Jürgens, Team Leader Thermal Simulations Airbus endowed chair ISEMP, University of Bremen, Germany</i>	
15:00 – 15:05	Printing and Laser Sintering of Ag and Cu Paste – Prospects and Challenges in Additive Manufacturing Dipl.-Ing. Juliane Fichtner, Fraunhofer Institute for Machine Tools and Forming Technology IWU, Germany
15:05 – 15:10	Next Generation of 3D printed tools for High Pressure Diecasting Sten Farre, RISE Research Institutes of Sweden, Sweden
15:10 – 15:15	Thermal analysis and simulation of selective laser melted wind turbine blade Abbas Razavykia, Department of Mechanical and Aerospace Engineering, Italy
15:15 – 15:20	Influence of Machine Parameters on Ti-6Al-4V small sized specimens made by laser metal deposition Sarah Milhomme, ESTIA Institute of Technology, France
15:20 – 15:25	Material Certification of Additive Manufacturing Materials Marc Mansfeld, TÜV SÜD Product Service, Germany
15:25 – 15:30	Influence of thermal cycles on precipitation kinetics during Selective Laser Melting and heat treatment of AlMgSc alloy Yuvaraj Patil, Airbus endowed chair ISEMP, University of Bremen, Germany
15:30 – 15:35	A data driven approach to the monitoring of the additive manufacturing process Jonas Holtmann, TESTIA GmbH, Germany
15:35 – 15:40	Simulation of texture evolution during SLM of Ti6Al4V with Cellular Automata Finite Difference method Mohammad Sadegh Mohebbi, Airbus endowed chair ISEMP, University of Bremen, Germany
15:40 – 15:45	Thermal based process monitoring for laser powder bed fusion (LPBF) M.Eng. Dieter Tyralla, Bremer Institut für angewandte Strahltechnik GmbH, Germany
15:45 – 15:50	In-situ alloying of tailored materials for LPBF Michael Norda, Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung (IFAM), Germany
15:50 – 16:30	Networking & Exhibiton Break
Session 4 Fatigue Behaviour of AM Parts	
<i>Dr.-Ing. Gesa Rolink, Head of Material Development SLM Solutions Group AG, Germany</i>	
16:30 – 16:45	Factors influencing the fatigue strength of additively manufactured Ti6Al4V Dipl.-Ing. (SFI/IWE) Sebastian Schettler, Fraunhofer Institut für Werkstoff- und Strahltechnik IWS, Germany
16:45 – 17:00	Fatigue resistance: Key criteria of Additive Manufactured Ti6Al4V for aerospace application Dr. Felix Reinert, CSEM Centre Suisse d'Electronique et de Microtechnique SA, Switzerland
17:00 – 17:15	A fatigue approach for additively manufactured components using representative structural elements M.Sc. Matilde Scurria, Fraunhofer Institute for Structural Durability and System Reliability LBF, Germany
Session 5 Development & Certification of Materials for AM Processing	
<i>Dr.-Ing. Gesa Rolink, Head of Material Development SLM Solutions Group AG, Germany</i>	
17:15 – 17:30	Alloy development for AM-processing in the system Al-Cr-Fe-Ni-Mo: pathways to novel materials with nano-scale duplex microstructures Sergej Gein, ACCESS e.V., Germany
17:30 – 17:45	Rapid Alloy Development (RAD) due to the combined use of Laser Powder Bed Fusion (LPBF) and Extreme High-Speed Laser Material Deposition (EHLA) M.Sc. Stephan Koss, RWTH Aachen University - Digital Additive Production DAP, Germany
19:00 – 22:00	Get Together Dinner (Atlantic Hotel Airport, Restaurant Blix)

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Day 2: Dec. 11th	Novel AM Materials & DED Processes
Session 6	<i>Dr.-Ing. Astrid Roto, Team Manager Material and Process Development Metal EOS GmbH, Germany</i>
09:00 – 09:15	Wire Arc Additive Manufacturing of Magnesium alloys – progress and future aims M.Eng. Danny Lubosch, GEFERTEC GmbH, Germany
09:15 – 09:30	Wire and Arc Additive Manufacture of Aluminium lithium alloys Dr. Eloise Eimer, Cranfield University, England
09:30 – 09:45	Laser Metal Deposition of Ultra-fine Duplex AlCrFe2Ni2-based High Entropy Alloy M.Sc. Veronica Molina, Fraunhofer-Institut für Lasertechnik ILT, Germany
09:45 – 10:00	Directed Energy Desposition(DED) Didier Boisselier, IREPA LASER, France
10:00 – 10:45	Photo-Session & Networking Break
Session 7	Microstructure & Properties of DED Processes <i>Julian Koopmann, Corporate Research for Special Materials Volkswagen AG, Germany</i>
10:45 – 11:00	Porosity reduction strategies and mechanical properties evaluation in WAAM of Aluminium alloys Nieves Rodríguez, IK4-LORTEK Research Centre,, Spain
11:00 – 11:15	Investigating the reproducibility of material properties in wire arc additive manufactured large titanium parts Dipl.-Ing. Christoph Halisch, BIAS - Bremer Institut für angewandte Strahltechnik GmbH, Germany
11:15 – 11:30	Microstructural and mechanical analysis of high performance parts produced by hybrid additive manufacturing of powder LMD on forged base components Dr. Susanne Hemes, ACCESS e.V., Germany
11:30 – 11:45	Study of the Anisotropy of Properties in Titanium Alloys made by Plasma Metal Deposition Erich Neubauer, RHP-Technology GmbH, Austria
11:45 – 12:00	Laser metal deposition of Fe- and Co-based shape-memory alloys M.Sc. Niklas Sommer, Universität Kassel , Germany
Session 8	Prediction of Microstructure & Properties of AM Materials <i>Dr. Jan-Patrick Jürgens, Team Leader Thermal Simulations Airbus endowed chair ISEMP, University of Bremen, Germany</i>
12:00 – 12:15	3D microstructure simulation of complex parts built additively from Ti64 powder by Selective Electron Beam Melting (SEBM) Dipl.-Ing. Johannes Köpf, Lehrstuhl Werkstoffkunde und Technologie der Metalle (WTM), Germany
12:15 – 12:30	Mechanical property prediction of additively manufactured metals by micromechanical modeling Dr.-Ing. Napat Vajragupta, Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Germany
12:30 – 13:30	Lunch & Exhibition Break
Impulse Lecture	Industrialization <i>Prof. Dr.-Ing. Vasily Ploshikhin, Head of Airbus endowed chair ISEMP, University of Bremen, Germany</i>
13:30 – 13:45	Industrialization of metal Additive Manufacturing: Current state and outlook Dr.-Ing. Maximilian Munsch, Managing Partner Ampower GmbH & Co. KG, Germany
Panel Discussion	Industrialization of Additive Manufacturing: Prospects for Materials & Process Development <i>Prof. Dr.-Ing. Jens Telgkamp, Hamburg University of Applied Sciences, Germany; Dr.-Ing. Kai Schimanski, Head of Industrial Technology Varel Premium AEROTECH GmbH, Germany</i>
13:45 – 14:30	Industrialization of Additive Manufacturing: Prospects for Materials & Process Development Dr. Claudio Dalle Donne, Head of Materials, Process and Testing Airbus Bremen, Germany; Julian Koopmann, Corporate Research for Special Materials Volkswagen AG, Germany; Frank Palm, Senior Expert Additive Manufacturing & Welding Airbus Central Research & Technology, Germany; Dr.-Ing. Kai Schimanski, Head of Industrial Technology Varel Premium AEROTECH GmbH, Germany; Dr.-Ing. Maximilian Munsch, Managing Partner Ampower GmbH & Co. KG, Germany; Dr. Eloise Eimer, Cranfield University, England; Moritz Brünger, AM and R&T Coordinator, Future Launchers Architecture ArianeGroup GmbH, Germany
14:30 – 15:00	Networking & Exhibiton Break
Session 9	Simulation-driven Development of Novel AM Processes, Residual Stress & Compensation of Distortion <i>Prof. Dr.-Ing. Jens Telgkamp, Hamburg University of Applied Sciences, Germany</i>
15:00 – 15:15	Thermal analysis and laser power mapping of selective laser melting on the flat overhang geometry of 316L stainless steel Ava Ashby, Lawrence Livermore National Laboratory, USA
15:15 – 15:30	Simulation-based Adaption of Scanning Strategies in L-PBF of Ti-6Al-4V M.Sc. Oliver Illies, Airbus endowed chair ISEMP, University of Bremen, Germany
15:30 – 15:45	Simulation aided process development with multi-spot strategies in laser powder-bed fusion Marcel Ślódczyk, Robert Bosch GmbH, Germany
15:45 – 16:00	Advanced prediction and compensation of distortions in L-PBF processes Dr. Patrick Mehmert, Simufact, Germany
End	Closing Remarks <i>Prof. Dr.-Ing. Vasily Ploshikhin, Head of Airbus endowed chair ISEMP, University of Bremen, Germany</i>

