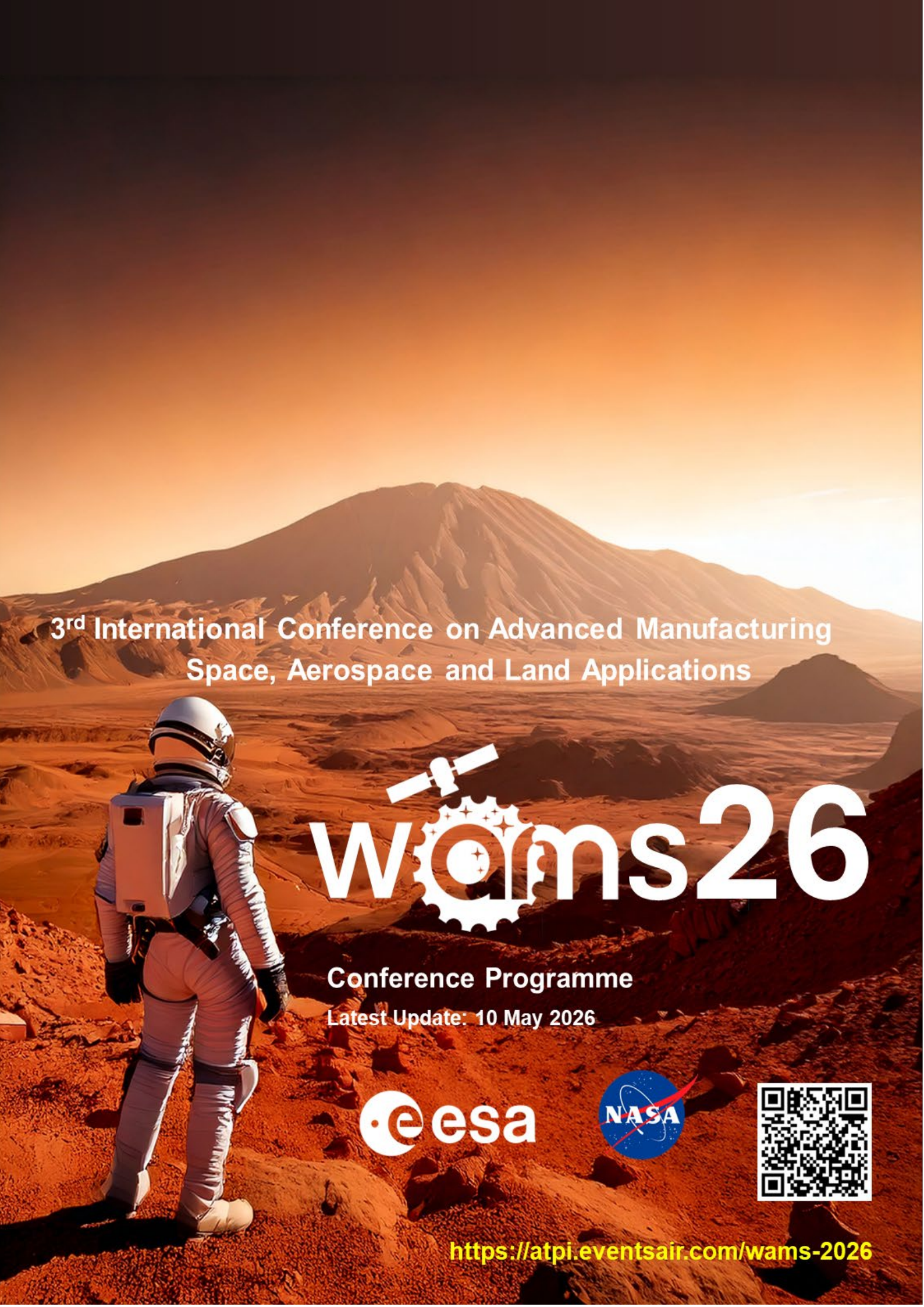
3rd International Conference on Advanced Manufacturing
Space, Aerospace and Land Applications
wams26
Conference Programme
Latest Update: 10 May 2026
esa
NASA
https://atpi.eventsair.com/wams-2026

Programme Overview

Monday 8th June 2026

Erasmus High Bay	Erasmus Auditorium	Newton 1	Newton 2	Einstein
Conference Registration				
LIGHT LUNCH AND REFRESHMENTS - TENNIS HALL				
CONFERENCE WELCOME				
COFFEE BREAK				
ADDITIVE MANUFACTURING PROCESS MONITORING & IN SITU	ADDITIVE MANUFACTURING MULTI MATERIALS 1	WELDING AND JOINING 1 FRCTION STIR WELDING	IN SPACE MANUFACTURING ISRU REGOLITH BASED MANUFACTURING 1	ADVANCED MANUFACTURING OF ELECTRONICS PRINTED ELECTRONICS
WELCOME RECEPTION BARBEQUE - ZEEMAUW NOORDWIJK AN ZEE				

Tuesday 9th June 2026

Erasmus High Bay	Erasmus Auditorium	Newton 1	Newton 2	Einstein
ADDITIVE MANUFACTURING POWDER FEEDSTOCK, REUSE & CHACTERISATION	ADDITIVE MANUFACTURING MULTI MATERIALS 2	WELDING AND JOINING 2 FRICTION BASED PROCESSING	IN SPACE MANUFACTURING ISRU REGOLITH BASED MANUFACTURING 2	ADVANCED MANUFACTURING OF ELECTRONICS MISCELANEOUS PROCESSING
COFFEE BREAK				
ADDITIVE MANUFACTURING STANDARDISATION AND QUALIFICATION	ADDITIVE MANUFACTURING ADVANCED MATERIALS	WELDING AND JOINING 3 MISCELANEOUS PROCESSES	IN SPACE MANUFACTURING ISRU REGOLITH BASED MANUFACTURING 3	SMART AND DIGITAL MANUFACTURING 1 MODEL BASED ENGINEERING
LUNCH (TENNIS HALL)				
KEYNOTE PRESENTATION: Development of a metal printer for printing on the ISS (Erasmus High Bay)				
ADDITIVE MANUFACTURING LATEST METAL AM DEVELOPMENT	ADDITIVE MANUFACTURING POST PROCESSING, FINISHING AND SURFACE ENGINEERNG	COMPOSITES 1 COMPOSITE STRUCTURES	IN SPACE MANUFACTURING BIO PRINTING IN SPACE	SMART AND DIGITAL MANUFACTURING 2 DIGITAL TWINS
COFFEE BREAK				
ADDITIVE MANUFACTURING SPACE PROPULSION 1	ADDITIVE MANUFACTURING ALLOY DEVELOPMENT AND NOVEL ALLOYS 1	COMPOSITES 2 MATERIALS DEVELOPMENT	IN SPACE MANUFACTURING ISRU REGOLITH BASED MANUFACTURING 4	SMART AND DIGITAL MANUFACTURING 3 ACCELERATED PRODUCTION
POSTER SESSION (Finger Food and Drink) - SPORTS HALL				

Notes:

1) **This is only a preliminary programme and is subject to change. Please check the conference website for the latest updates**
2) **No manuscripts are expected for this conference, just presentations**

Programme Overview

Wednesday 10th June 2026

Erasmus High Bay	Erasmus Auditorium	Newton 1	Newton 2	Einstein
TECHNOLOGY TRANSFER				
COFFEE BREAK				
TECHNOLOGY TRANSFER				
LUNCH (TENNIS HALL)				
ADDITIVE MANUFACTURING SPACE PROPULSION 2	ADDITIVE MANUFACTURING ALLOY DEVELOPMENT AND NOVEL ALLOYS 2	COMPOSITES 3 CERAMIC BASED COMPOSITES	IN SPACE MANUFACTURING PROCESS MONITORING AND VERIFICATION	SMART AND DIGITAL MANUFACTURING 4 AI ASSISTED MANUFACTURING
COFFEE BREAK				
ADDITIVE MANUFACTURING TESTING AND DEFECT ASSESSMENT	ADDITIVE MANUFACTURING HYBRID MANUFACTURING	COMPOSITES 4 RAPID MANUFACTURING	IN SPACE MANUFACTURING METAL AM, WELDING, CUTTING AND REPAIR 1	SMART AND DIGITAL MANUFACTURING 5 DATA MANAGEMENT AND PROCESSING
CONFERENCE DINNER - MADURODAM				

Thursday 11th June 2026

Erasmus High Bay	Erasmus Auditorium	Newton 1	Newton 2	Einstein
ADDITIVE MANUFACTURING THERMAL MANAGEMENT AND HEAT TRANSFER	ADDITIVE MANUFACTURING WAAM AND WIRE	COMPOSITES 5 THERMOPLASTIC COMPOSITES	IN SPACE MANUFACTURING METAL AM, WELDING, CUTTING AND REPAIR 2	ADDITIVE MANUFACTURING OPTICAL & MECHANICAL APPLICATIONS
COFFEE BREAK				
ADDITIVE MANUFACTURING SPACE MECHANISMS	ADDITIVE MANUFACTURING COMPOSITES	COMPOSITES 6 DESIGN AND MANUFACTURING	IN SPACE MANUFACTURING METAL AM, WELDING, CUTTING AND REPAIR 3	ADDITIVE MANUFACTURING LARGE STRUCTURES AND SCALE UP
LUNCH (TENNIS HALL)				
KEYNOTE PRESENTATION: Zack Cordero (MIT): Materials and Manufacturing for Space Applications (Erasmus High Bay)				
ADDITIVE MANUFACTURING RF & EMBEDDED SENSORS	ADDITIVE MANUFACTURING EXPLORATION	SURFACE ENGINEERING 1 RADIATION SHIELDING	IN SPACE MANUFACTURING IN SPACE MANUFACTURING OF POLYMERS	ADDITIVE MANUFACTURING TESTING AND MECHANICAL PERFORMANCE
COFFEE BREAK				
ADDITIVE MANUFACTURING COLD SPRAY	ADDITIVE MANUFACTURING POLYMER AM & 4D PRINTING	SURFACE ENGINEERING 2 FUNCTIONAL SURFACES AND COATINGS	IN SPACE MANUFACTURING MISCELLANEOUS PROCESSES	ADDITIVE MANUFACTURING PREFORMANCE PREDICTION AND MODELLING
CONFERENCE CLOSURE				

Notes:

1) **This is only a preliminary programme and is subject to change. Please check the conference website for the latest updates**
2) **No manuscripts are expected for this conference, just presentations**

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Erasmus High Bay

Theme: Conference Welcome and Keynote Presentations

11:00 – 13:00 Conference registration and light lunch (Escape, Tennis Hall)

13:00 Welcome to WAMS-26

13:20 Advanced Manufacturing for Space Applications, an ESA Perspective

Tommaso Ghidini, European Space Agency, Netherlands

14:10 NASA keynote presentation (tbc)

15:00 Coffee Break

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Process Monitoring & In Situ

15:30 From Monitoring to Qualification: A Custom Imaging Architecture for Porosity Detection in Metal Additive Manufacturing

Matteo Bugatti, *Politecnico Di Milano, Italy*

15:55 Development of in line non-destructive inspection techniques for advanced manufacturing

Nicolas Nutal, *Crm Group, Belgium*

16:20 Development of in-line NDI Techniques for advanced manufacturing (DED)

Ian Nicholson, *TWI, Ltd, United Kingdom*

16:45 Advanced Qualification and Certification Strategies using In Situ Process Monitoring and Computational Material Methods

Rick Russell, *The Barnes Global Advisors, United States*

Evening: *Welcome Reception Barbeque, Zeemauw, Noordwijk aan Zee*

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Multi Materials 1

15:30 Advancements in Multi-Material Powder Bed Fusion for Space Application

Constantin Jugert, *Fraunhofer IGCV, Germany*

15:55 Multi-Material Laser Beam Melting for Space Components

Sebastian Soller, *ArianeGroup, France*

16:20 Bridging materials and manufacturing: DED as a platform for advanced MMCS and FGMs

Eleonora Santecchia, *Universitá Politecnica delle Marche, Italy*

16:45 Advancing multi-material additive manufacturing (AM) for space application

John Aristeidakis, *Thermo-calc Solutions AB, Sweden*

Evening: *Welcome Reception Barbeque, Zeemauw, Noordwijk aan Zee*

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Newton 1

Theme: Welding and Joining 1

Topic: Friction Stir Welding

15:30 Refill Friction Stir Spot Welding (Refill FSSW) for skin-stringer-frame stiffening of Al Cu-Li cryogenic tanks

Pedro De Sousa Santos, *TWI, Ltd, United Kingdom*

15:55 Refill Friction Stir Spot Welding and Bobbin Tool Friction Stir Welding of AA2219 for Aerospace Structures

Matteo Bernardi, *Helmholtz Zentrum Hereon, Germany*

16:20 Advances in joining titanium alloys using FSW

Vito Di Pietro, *TWI, Ltd, United Kingdom*

16:45 High-Performance FSW and SS-FSW on T-Joints of AA2219-T31 Stiffened Panels: A Comprehensive Analysis of Mechanical Properties and Microstructure and surface finishing.

Luciano Bergmann, *Helmholtz Zentrum Hereon, Germany*

Evening: *Welcome Reception Barbeque, Zeemauw, Noordwijk aan Zee*

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Newton 2

Theme: In Space Manufacturing

Topic: ISRU Regolith Based Manufacturing 1

15:30 Refractory High-Entropy Alloys and Hybrid Additive Routes for Metallurgy in Lunar Mare, Highlands and KREEP Terranes

Siddhartha Yash Kovid, *Bimo Tech Sp. Z O. O., Poland*

15:55 Physical and chemical characterisation of reduced lunar highland regolith simulant for Laser Powder Bed Fusion and Directed Energy Deposition

Christopher Ogunlesi, *European Space Agency, France*

16:20 Direct and Indirect Fibre Integration Strategies for Lunar Regolith-Based Manufacturing

Miranda Fateri, *Hoschschule Aalen, Germany*

16:45 Additive Manufacturing of Martian Regolith Simulant for CO Production: A First Approach to In-situ Propellant Generation

Arturo Pajares, *Flemish Institute For Technological Research, Belgium*

Evening: *Welcome Reception Barbeque, Zeemauw, Noordwijk aan Zee*

Date: Monday 8th June 2026 **Time:** 15:30 – 17:10

Room: Einstein

Theme: Advanced Manufacturing of Electronics 1

Topic: Printed Electronics

15:30 Integrating Additive Manufacturing and 3D Printed Electronics: CRM Group's Unique Expertise for Heavy Industry and Harsh Environments

Guaino Philippe, *CRM Group, Belgium*

15:55 Advancing Printed Organic Field-Effect Transistors Performances: Overcoming the 100 MHz Barrier toward Ultra-High-Frequency

Martino Cambiaggio, *Istituto Italiano Di Tecnologia, Italy*

16:20 Comparing Indirect and Direct Printed Electronics approaches for Lightweight, Flexible and 3D-Integrated Functional Units,

Mariia Arseenko, *CRM Group, Belgium*

16:45 3D Microelectronics for Next-Gen Cubesats: Additive Manufacturing of Embedded Electronics and Thermal Management

Darragh Walsh, *Holst Centre, Tno, Netherlands*

Evening: *Welcome Reception Barbeque, Zeemauw, Noordwijk aan Zee*

Date: Tuesday 9th June 2026 **Time:** 09:00 – 10:40

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Powder Feedstock, Reuse and Characterisation

09:00 Powder boundary conditions in Directed Energy Deposition simulations and the relevance of particle size

Tijan Mede, *Institute Of Metals And Technology, Slovenia*

09:25 The role of powder quality in additive manufacturing of space hardware – a review of ESA studies on the relationship between powder-part characteristics, influence of the environment and lessons learnt on powder re-use

Martina Meisnar, *European Space Agency, United Kingdom*

09:50 Chemically Assisted Powder Declogging and Cleaning of Metal AM Microchannels

Agustin Diaz, *REM Surface Engineering, Germany*

10:15 The effects of powder reuse on powder and bulk properties of ABD®-900AM® in closed-loop laser powder bed fusion additive manufacturing systems

Ewa M. Hahn, *European Space Agency-ECSAT, United Kingdom*

10:45 Coffee Break

Date: Tuesday 9th June 2026 **Time:** 09:00 – 10:40

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Multi Materials 2

09:00 Interface engineering in additively manufactured multi-material structures for thermal protection systems

Davoud Jafari, *University Of Twente, Netherlands*

09:25 Multi-Material Laser Powder Bed Fusion Additive Manufacturing of MoS2-Integrated Metal Matrix Composites for Multifunctional Aerospace Energy Storage Applications, **Navid Alinejadian,** *KTH Royal Institute of Technology, Sweden*

09:50 Material Jetting and Co-Sintering of Functionally Graded Metal-Ceramic Structures **Davoud Jafari,** *University Of Twente, Netherlands*

10:15 A mesoscale multimaterial manufacturing for space applications: An Additive-subtractive laser approach

Vipin Richhariya, *University Of Minho, Portugal*

10:45 Coffee Break

Date: Tuesday 9th June 2026 **Time:** 09:00 – 10:40

Room: Newton 1

Theme: Welding and Joining 2

Topic: Friction Based Processing

09:00 Applicability of friction surfacing as solid-state layer technique – Process, structure & properties

Zina Kallien, *Helmholtz-Zentrum Hereon, Germany*

09:25 Friction stir channelling innovation for aerospace thermal management

Pedro De Sousa Santos, *TWI Ltd., United Kingdom*

09:50 Solid state spot welding of additive-manufactured and wrought aluminium alloys for aerospace structures

Sergio Amancio-Filho, *Graz University Of Technology, Austria*

10:15 Linear Friction Welding: Accelerating Advanced Manufacturing for Space Applications

Anthony McAndrew, *Kuka Systems Uk Ltd, United Kingdom*

10:45 Coffee Break

Date: Tuesday 9th June 2026 **Time:** 09:00 – 10:40

Room: Newton 2

Theme: In Space Manufacturing

Topic: ISRU Regolith Based Manufacturing 2

09:00 Understanding the 3D printing process using regolith-derived materials to construct durable and sustainable infrastructure for future human habitats on extraterrestrial sites

Amalia Ioannou, *Cyprus University of Technology, Cyprus*

09:25 Recent developments in laser beam melting of lunar regolith for in-situ resource utilisation

Tim Eismann, *Laser Zentrum Hannover e.V., Germany*

09:50 Low Temperature, Rapid Flash Sintering of Lunar Regolith Simulant

Ollie Osborn, *Lucideon Ltd, United Kingdom*

10:15 Powder-Bed Additive Manufacturing of Fibre-Reinforced Regolith Composites by Concentrated Solar Sintering

Juan Carlos Arañó Romero, *Dlr E.v., Germany*

10:45 Coffee Break

Date: Tuesday 9th June 2026 **Time:** 09:00 – 10:40

Room: Einstein

Theme: Advanced Manufacturing of Electronics 2

Topic: Miscellaneous Processing

09:00 Unlocking the Future of Space Electronics with the Advanced Manufacturing Revolution

Rita Palumbo, *European Space Agency, Netherlands*

09:25 Direct Atomic Layer Processing and Material Combinatorics for Next-Generation Electronics: Enabling Distributed and Zero-G Manufacturing with ATLANT 3D

Laszlo Izso, *Atlant 3d, Denmark*

09:50 Additive Manufacture of Electrical Wiring on 3D Surfaces: Integration of Q5D CY1000 into Industry 4.0 Production Environments

Tania Kyriakogkona, *Q5d Technologies Limited, United Kingdom*

10:15 Hybrid Thin Film Electronics Platform with Optimised Aerosol Jet Printed Interconnects and Printed Functional Sensors, Integrated with Embedded Electronic Components for Distributed Planetary Sensing

Davide Deganello, *Swansea University, United Kingdom*

10:45 Coffee Break

Date: Tuesday 9th June 2026 **Time:** 11:10 – 12:25

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Standardisation and Qualification

11:10 The Nadcap Aerospace Additive Manufacturing Accreditation Programme

Richard Freeman, *Performance Review Institute (PRI), United States*

11:35 Advancing Standardization and Part Qualification for PBF-LB/M: Areal Surface Characterization for Load-Bearing Area Correction in Tensile Testing

Theresa Buchenau, *Fraunhofer IFAM (Institute for Manufacturing Technology and Advanced Materials), Germany*

12:00 A Frank Discussion on Lessons Learned from Adopting and Applying NASA-STD-6030 for Spaceflight Systems

Tim Poe, *Nasa, United States*

12:50 Lunch (Tennis Hall, Escape)

Date: Tuesday 9th June 2026 **Time:** 11:10 – 12:50

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Advanced Materials

11:10 Advancement in Materials through Additive Manufacturing

Youping Gao, *Castheon Inc, United States*

11:35 Advanced textiles for space applications

Malgorzata Holynska, *European Space Agency, Netherlands*

12:00 Additive manufacturing of high-performance ceramics by vat photopolymerization – Status quo and way forward

Dominik Brouczek, *Lithoz GmbH, Austria*

12:25 Reusable Shape Memory Shock Absorption Elements for Future Landing Systems using Additive Manufacturing

Vaclav Pejchal, *CSEM, Switzerland*

12:50 Lunch (Tennis Hall, Escape)

Date: Tuesday 9th June 2026 **Time:** 11:10 – 12:50

Room: Newton 1

Theme: Welding and Joining 3

Topic: Miscellaneous Processes

11:10 How does Diffusion Bonding and Brazing enable technology development of advanced components

Abbasi Gandhi, *TWI, United Kingdom*

11:35 Solid-State Joining of Shape Memory Alloys using Cold Spray Deposition

Ashton Lyon, *Worcester Polytechnic Institute, United States*

12:00 Novel Joining and Additive Manufacturing Techniques for Next-Generation Aerospace Hybrid Structures

Sergio Amancio-Filho, *Graz University Of Technology, Austria*

12:25 Investigating Laser Beam Welding as an In-Space Joining Technique via Thermal Vacuum and Microgravity & Vacuum Experiments

Andrew O'Connor, *Nasa Marshall Space Flight Center, United States*

12:50 Lunch (Tennis Hall, Escape)

Date: Tuesday 9th June 2026 **Time:** 11:10 – 12:50

Room: Newton 2

Theme: In Space Manufacturing

Topic: ISRU Regolith Based Manufacturing 3

11:10 More than Highland and Mare: The importance of site-specific compositions in regolith laser processing

Emma Porsbjerg, *Danmarks Tekniske Universitet, Denmark*

11:35 In Situ Monitoring of Regolith L-PBF: Insights and Strategies for Printability Enhancement

Yassir Ben Dahou, *Politecnico Di Milano, Italy*

12:00 Mechanisms for Autonomous Material Deposition and Additive Manufacturing Using In-Situ Resources in Space Environments

Rui Pires, *Politécnico Da Guarda, Portugal*

12:25 Vacuum Laser Additive Manufacturing of Lunar Regolith: System Development and Performance Validation

Parker Shake, *Nasa MSFC, United States*

12:50 Lunch (Tennis Hall, Escape)

Date: Tuesday 9th June 2026 **Time:** 11:10 – 12:50

Room: Einstein

Theme: Smart and Digital Manufacturing 1

Topic: Model Based Engineering

11:10 SYMADE.ai: a Materials Informatics Discovery Platform for Next-Generation Radiation Shielding Materials for Harsh Environments

Sofia Colombi, *EmTDLab, Luxembourg*

11:35 Application of crystal plasticity finite element modelling to low cycle fatigue prediction in gas turbine component

Christos Argryakis, *Rolls-royce Plc, United Kingdom*

12:00 A Model-Based Engineering Toolbox for Thermoelectric Design in Radioisotope Power Generation

Aniruddha Ray, *RGS Development, Netherlands*

12:25 NewATHENA Optical Bench: Idea to TRL-6 —Concluding the Data-Driven Leap to TRL Next

André Seidel, *Rosa² GmbH, Germany*

12:50 Lunch (Tennis Hall, Escape)

Date: Tuesday 9th June 2026 **Time:** 13:50 – 14:35

Room: Erasmus High Bay

Theme: Keynote Presentation

13:50 Metal additive manufacturing on orbit – A journey towards a world first

Batiste Allilaire, *Airbus Defence and Space, Toulouse, France*

Wojciech Suder, *Cranfield University, United Kingdom*

Advenit Makaya, *European Space Agency, Netherlands*

Date: Tuesday 9th June 2026 **Time:** 14:45 – 17:45

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Latest Metal Development

14:45 Overview of the latest metal AM developments at European Space Agency

Thomas Rohr, *European Space Agency, The Netherlands*

15:10 AM for Large Space Structures

Nicola Aversano, *Thales Alenia Space, France*

15:35 Coffee Break

Topic: Space Propulsion 1

16:05 Advanced materials and manufacturing for reusable rocket engines

Zachary Cordero, *MIT, United States*

16:30 RAPTURE: A Rotary Printing Architecture for Multi-Material Rocket Nozzle

Michael Tucker, *ETH Zurich, Switzerland*

16:55 Design, hybrid manufacturing and hot-fire testing of an Inconel 718 rocket nozzle based on LP-DED, adapted heat treatment and accompanying detailed analyse

Henry Köhler, *DED Services GmbH, Germany*

17:20 Additive manufacturing of copper for space applications: laser powder bed fusion for propulsion and thermal management using GRCop-42 and pure copper

Chris Dalton, *Manufacturing Technology Centre, United Kingdom*

18:00 Poster Session (Escape, Sports Hall)

Date: Tuesday 9th June 2026 **Time:** 14:45 – 17:45

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Post Processing, Finishing and Surface Engineering

14:45 Finishing processes for additively manufactured metallic parts : exploration, development and industrialisation

Alexis Renaud, *IRT M2P, France*

15:10 Surface Finishing of Additive Manufactured Haynes® 282 Superalloy (PBF-LB and DED-LB/p) via Chemical and Chemical-Mechanical Polishing

Agustin Diaz, *REM Surface Engineering, Germany*

15:35 Coffee Break

Topic: Alloy Development and Novel Alloys 1

16:05 Development of a New Beta-metastable Titanium Alloy for Additive Manufacturing

Norberto Jimenez Mena, *Crmgroup, Belgium*

16:30 Development of a New high Strength Al-Zn-Mg alloy for DED additive manufacturing

Norberto Jimenez Mena, *Crmgroup, Belgium*

16:55 Toward Resilient Supply Chain for Refractory Alloys in Space Applications: Progress in W-Re and Mo-Re Alloys Development

Adrian Kukofka, *Progresja S.A., Poland*

17:20 Additive Manufacturing of High Strength Aluminium Alloys; Phase 2 Benchmarking Study.

Joseph Chamberlin, *The MTC, United Kingdom*

18:00 Poster Session (Escape, Sports Hall)

Date: Tuesday 9th June 2026 **Time:** 14:45 – 17:45

Room: Newton 1

Theme: Composites

Topic: Composite Structures

14:45 Healable composite structures for tank applications and beyond

Cecilia Scazzoli, *CompPair Technologies SA, Switzerland*

15:10 Sensorized carbon fiber composite turbine blade

Ingo Wirth, *Fraunhofer IFAM, Germany*

15:35 Coffee Break

Topic: Composite Materials Development

16:05 FibRaShield – Advanced Graded-Z Radiation Shielding for Space Application

Felix Schmidt, *Fibrecoat Gmbh, Germany*

16:30 Multifunctional PBI/PI/Carbon Black Yarns for Flame-Resistant and Sensing-Enabled Space Textiles

Piotr K. Szewczyk, *AGH University of Krakow, Poland*

16:55 Powder Metallurgical Manufacturing of Advanced Materials with tailored thermophysical properties

Erich Neubauer, *Rhp Technology Gmbh, Austria*

17:20 Rapid and energy efficient production of CFRP composite structures

Patrick Knaack, *TU Wien, Austria*

18:00 Poster Session (Escape, Sports Hall)

Date: Tuesday 9th June 2026 **Time:** 14:45 – 17:45

Room: Newton 2

Theme: In Space Manufacturing

Topic: Bio Printing In Space

14:45 Additive manufacturing of human tissues and tissue models in space

Michael Gelinsky, *Tu Dresden, Germany*

15:10 Opportunities and challenges for additive manufacturing in space – from drop-based 3D-bioprinting to blow extrusion of thermoplastic polymers

Andreas Blaeser, *Technical University Of Darmstadt, Germany*

15:35 Coffee Break

Topic: ISRU Regolith Based Manufacturing 4

16:05 Additive Manufacturing of PE–Lunar Regolith Simulant Composites for Maximized ISRU

Saré Moazen, *École De Technologie Superieure (ets), Canada*

16:30 Feasibility study on Friction Extrusion of AA6061 and Lunar Highlands Simulant Composite

Uceu Suhuddin, *Helmholtz Center Hereon, Germany*

16:55 Additive Manufacturing with lunar Regolith simulants: Recent progress from the ISRU Toulouse Taskforce

Julien Granier *Institut Clément Ader, France*

17:20 Polymer–Regolith Composites for In-Situ Manufacturing on the Moon and Mars

Meelad Ranaiefar, *NASA, United States*

18:00 Poster Session (Escape, Sports Hall)

Date: Tuesday 9th June 2026 **Time:** 14:45 – 17:45

Room: Einstein

Theme: Smart and Digital Manufacturing

Topic: Digital Twins

14:45 In-Process Anomaly Detection with Spatial Digital Twins based on Manufacturing Data

Oliver Heilmann, *Nebumind Gmbh, Germany*

15:10 Digital Twin for Additive Manufacturing of Ceramic Components

Shafi Khurieshi Mohammed, *Jotne Connect, Norway*

15:35 Coffee Break

Topic: Accelerated Production

16:05 Accelerating Materials Innovation for Aerospace and Defense Platforms- Leonardo Advanced Material Labs

Abhishek Kumar, *Leonardo Spa, Italy*

16:30 Digitally assisted manufacturing of complex space relevant parts

Uwe Teicher, *Fraunhofer IWU, Germany*

16:55 Closing the Iteration speed Gap: An AI–AM Framework for Fast Propulsion Component Development

Katharina Eissing, *Neoforge, France*

18:00 Poster Session (Escape, Sports Hall)

Date: Wednesday 10th June 2026 **Time:** 08:45 – 12:10

Room: Erasmus High Bay

Theme: Technology Transfer

08:45 Welcome and session introduction

Andrea Troise, *HE Space for ESA, The Netherlands*

08:50 Technology Transfer at ESA

Matthew Edwards, *ESA, The Netherlands*

09:00 Technology Transfer at NASA

Mallory S. James, *NASA, United States*

09:10 Industry Case Studies

Zach Courtright, *LeapFast, United States*

Andreas Funcke, *APWorks, Germany*

09:50 Panel Discussion: Enablers and Challenges of Tech Transfer

Moderator: **Vito Di Pietro**, *TWI Ltd, United Kingdom*

10:20 Coffee Break

10:50 Reverse Pitching: Industry Needs and R&D Challenges

Christos Argyrakis, *Rolls Royce, United Kingdom*

Massimiliano Buccioni, *Baker Hughes, Italy*

Raul Morón Bellester, *Fusion for Energy, Spain*

Rick Russell, *Barnes Global Advisors, United States*

11:50 Session Wrap Up

Vito Di Pietro, *TWI Ltd, United Kingdom*

12:00 Lunch (Escape, Tennis Hall)

Date: Wednesday 10th June 2026 **Time:** 13:00 – 16:00

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Space Propulsion 2

13:00 Overview of additive manufacturing developments for liquid propulsion

Aniss Kessaci, *Cnes, France*

13:25 Advanced Manufacturing for Space Transportation - Manufacturing Innovations within ESA's Future Launchers Preparatory Programme (FLPP)

Kate Underhill, *European Space Agency, France*

13:50 Low cost, innovative and green rockect nozzle extension demonstrator enabled by laser material deposition

Yingwei Wu, *Fraunhofer ILT, Germany*

14:15 Coffee Break

Topic: Testing and Defect Assessment

14:45 Optimization of damage-tolerant properties in DED-LB/CW Ti-6Al-4V through beta-annealing for aerospace applications

Xabat Orue, *Tekniker, Spain*

15:10 Parameter-controlled geometrically-undefined porosity in laser powder bed fusion of metals

Daniel Oropeza, *University Of California, Santa Barbara, United States*

15:35 In-line Multi-Sensor Monitoring and Point-Cloud Defect Detection for DED-Arc Preforms in Flowforming Process Chains

Robert Lau, *Fraunhofer Research Institution for Additive Manufacturing Technologies IAPT, Germany*

Evening: Conference Dinner at Madurodam

Date: Wednesday 10th June 2026 **Time:** 13:00 – 16:00

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Alloy Development and Novel Alloys 2

13:00 Solid-state additive manufacturing of aerospace aluminium alloy parts with a ready to launch microstructure

Martin Luckabauer, *University of Twente, Netherlands*

13:25 Next-Generation Niobium Alloys via Additive Manufacturing: Microstructure, Mechanical Properties, and Alloy Design

Nicholas Sim, *Alloyed Ltd., United Kingdom*

13:50 Future-ready aluminium: Airware® Structures & Aheadd® Additive Manufacturing Solutions for Space, Air, Land & Water

Bernard Demestral, *Constellum C-TEC, France*

14:15 Coffee Break

Topic: Hybrid Manufacturing

14:45 Hybrid Manufacturing for Space - Cost-effective and scalable Ceramic AM

Enya Collier, *Lucideon, United Kingdom*

15:10 Hybrid Manufacturing of Titanium Structures using Field-Assisted Sintering and Directed Energy Deposition

Thomas Klein, *Ait Austrian Institute Of Technology, Austria*

15:35 Vibration dampening metamaterials fabricated via Material Extrusion Additive Manufacturing

Bernardo Alves, *University Of Coimbra, Portugal*

Evening: Conference Dinner at Madurodam

Date: Wednesday 10th June 2026 **Time:** 13:00 – 16:00

Room: Newton 1

Theme: Composites

Topic: Ceramic Based Composites

13:00 Infusion fabricated oxide CMC for the automatable, near-net shape fabrication of all oxide ceramic matrix composites – Technology, scale-up and applications

Michael Welter, *Deutsches Zentrum Für Luft- und Raumfahrt, Germany*

13:25 IFOX deployment for industry: Bridging the gap between space applications and mainstream use for oxide Ceramic Matrix Composites

Vito Leisner, *German Aerospace Center, Germany*

13:50 Multifunctional Thermal Protection System: integrating ultra-high temperature ceramics into ceramic matrix composites

Yinglu Tang, *Delft University Of Technology, Netherlands*

14:15 Coffee Break

Topic: Rapid Manufacturing

14:45 Advanced structures production using Rapid Tow Shearing key concepts,. opportunities and demonstration results and challenges across space, aerospace and automotive applications

Trevor Seabrook, *Icomat Limited, United Kingdom*

15:10 Development of automated fiber placement (AFP) process parameters for the manufacturing of curved thermoplastic composite structures for space applications using 4D Printing of Composites (4DPC) technique

Suong Hoa, *Concordia University, Canada*

15:35 An overview of the research, capabilities and impact of NCC - the UK's National Centre of Excellence for Composite Research

Alex Hale, *Ncc, United Kingdom*

Evening: Conference Dinner at Madurodam

Date: Wednesday 10th June 2026 **Time:** 13:00 – 16:00

Room: Newton 2

Theme: In Space Manufacturing

Topic: Process Monitoring and Verification

13:00 Towards Resource Efficient Artificial Intelligence for In-Space Additive Manufacturing of Large Structures

Marco Grasso, *Politecnico Di Milano, Italy*

13:25 MPEC: A Novel Environmental Testing Platform for Space-Grade Materials Reveals Critical Degradation in Additively Manufactured Polymers

Gilles Bailet, *University Of Glasgow, United Kingdom*

13:50 Enabling in-space manufacturing with laser ultrasonics

Theodosia Stratoudaki, *University Of Strathclyde, United Kingdom*

14:15 Coffee Break

Topic: Metal AM, Welding, Cutting and Repair 1

14:45 Zero-Gravity Manufacturing of Advanced Materials on Earth and Space

Anushanth Karalasingam, *University of Edinburgh, United Kingdom*

15:10 Additive Manufacturing in Microgravity: Wire-DED and LPBF Experiments on ISS and MAPHEUS® as a Basis for Orbital Production Systems

Sonja Steinbach, *DLR - German Aerospace Center, Germany*

15:35 Towards circular fabrication of Off-Earth metal structures

Vittoria Laghi, *University Of Bologna, Italy*

Evening: Conference Dinner at Madurodam

Date: Wednesday 10th June 2026 **Time:** 13:00 – 16:00

Room: Einstein

Theme: Smart and Digital Manufacturing

Topic: AI Assisted Manufacturing

13:00 Generative AI for Advanced Manufacturing in Space Applications: Opportunities and Challenges

Bianca Maria Colosimo, *Politecnico Di Milano, Italy*

13:25 Data Centres in space – a case for digital and out-of-Earth manufacturing

Dawid Luczyniec, *European Space Agency, Netherlands*

13:50 The qualification systems for the systems through the model oriented by software agent : a digital engineering method before, during and after the manufacturing of a Space system

Djamel Metmati, *Csi, Italy*

14:15 Coffee Break

Topic: Data Management and Processing

14:45 DILAFACT + DILACERT: an integrated platform for planning, monitoring, and digital certification of laser-based manufacturing

Riccardo Tonello, *DTI, Denmark*

15:10 Micro-EDM for SubTHZ waveguide components

Alessandro Guida, *CNR – STIIMA, Italy*

Evening: Conference Dinner at Madurodam

Date: Thursday 11th June 2026 **Time:** 09:00 – 10:40

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Thermal Management and Heat Transfer

09:00 Wire arc Directed Energy Deposition(waDED) of high Copper alloys for high performance and high conductivity applications - Challenges and properties

Kamalesh Bharadwaj, *LKR Light Metals Technologies, AIT Austrian Institute of Technology, Austria*

09:25 Additively Manufactured NiTi Micropillar Surfaces on Silicon for Enhanced Pool Boiling Heat Transfer in Normal and Reduced Gravity

Mahshid Memarian, *University Of Twente, Netherlands*

09:50 Development of Copper-Inconel 718 multi material structure through laser powder bed fusion for heat transfer applications

Ehsan Marzban Sh., *University of Twente, Netherlands*

10:15 How the additive manufacturing process helps to define new standard in the heat exchanger domain

Damien Serret, *TEMISTh, France*

10:40 Coffee Break

Date: Thursday 11th June 2026 **Time:** 09:00 – 10:40

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: WAAM and Wire

09:00 Flexible, direct, small lot, and special alloy wire feedstocks for wire Directed Energy Deposition

Thomas Klein, *LKR Light Metal Technologies, Austria*

09:25 Aluminium Wire and Arc Additive Manufacturing

Eloise Eimer, *Cranfield University, United Kingdom*

09:50 Industrialising Large-Scale WAAM for Space: Process Control, Qualification, and Lean Production Models

Filippo Gilardi, *MX3D B.V., Netherlands*

10:15 Wire Arc Additive Manufacturing for replacing Ni-alloy forgings in rocket engine applications

Jonas Öhrman, *GKN Aerospace, United Kingdom*

10:40 Coffee Break

Date: Thursday 11th June 2026 **Time:** 09:00 – 10:40

Room: Newton 1

Theme: Composites

Topic: Thermoplastic Composites

09:00 Evaluating Crystallinity in Carbon Fiber/Thermoplastic Composites

Allison Christy, *Nasa Glenn Research Center, United States*

09:25 Assessment of Residual Stress and Lap Shear Strength of Ultrasonically Welded Thermoplastic Composites

Sandi Miller, *NASA, United States*

09:50 CO2 laser based continuous in-situ consolidation of high-performance carbon fiber-reinforced thermoplastic composite structures

Eric Pohl, *Fraunhofer IWS, Germany*

10:15 Development of Bio-Based Thermoplastic Composites for Advanced Air Mobility Vehicles

Meelad Ranaiefar, *NASA, United States*

10:40 Coffee Break

Date: Thursday 11th June 2026 **Time:** 09:00 – 10:40

Room: Newton 2

Theme: In Space Manufacturing

Topic: Metal AM, Welding, Cutting and Repair 2

09:00 First Metal 3D Printing experiment on the International Space Station reveals the role of Gravity in Metal Additive Manufacturing

Caterina Iantaffi, *European Space Agency, The Netherlands*

09:25 Additive Manufacturing on Mars: Process Viability and Mechanical Properties of Inconel 625 under CO2-rich and Low-Pressure Atmospheres

Julen Baroja Iraolagoitia, *Tekniker, Spain*

09:50 Accelerating Large Space Structures Development With An Electron Beam Processing Tool for Cutting and Joining In-Space Operations

Guillaume Mohara, *Arcspace, France*

10:15 Laser Forming of Sheet Metal for In-Space Manufacturing Applications

Benjamin Rupp, *NASA, United States*

10:40 Coffee Break

Date: Thursday 11th June 2026 **Time:** 09:00 – 10:40

Room: Einstein

Theme: Additive Manufacturing

Topic: Optical and Mechanical Applications

09:00 Additively manufactured fused-silica lightweight mirrors for space applications

Gabriele Vecchi, *Inaf - Osservatorio Astronomico Di Brera, Italy*

09:25 Enhancement of design tools for additive manufacturing of Opto-Mechanical applications

Marco Mulser, *OHB System AG, Germany*

09:50 Powder bed fusion fabrication of high silicon content AlSi alloys for satellite optics

Conor O'keeffe, *Irish Manufacturing Research, Ireland*

10:15 End-to-end manufacturing of additively manufactured hydraulic components: lessons learned from GSTP FITFAME project.

Jean-François Vanhumbeeck, *CRM Group, Belgium*

10:40 Coffee Break

Date: Thursday 11th June 2026 **Time:** 11:10 – 12:50

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: Space Mechanisms

11:10 Additive manufacturing of electric motors – How to achieve 100 kW/liter power density

Lukas Günther, *Additive|Drives GmbH, Germany, GmbH*

11:35 Automated Design Workflow for AM Compliant Mechanisms

Lionel Kiener, *Csem, Switzerland*

12:00 AM Reaction wheel support brackets for constellations: From concept DRAM to satellite integration in under 13 weeks

Sebastian Greco, *Citd Aeropolis Sl, France*

12:25 AM compliant mechanisms: warpage compensation to improve guiding performances

Lionel Kiener, *Csem, Switzerland*

12:50 Lunch (Escape, Tennis Hall)

Date: Thursday 11th June 2026 **Time:** 11:10 – 12:50

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Composites

11:10 Localized heating of high-performance composites with short and continuous carbon reinforcements

Pablo Romero, *Aimen Technology Center, Spain*

11:35 4D Printing of large-scale thermoplastic composite laminates: From experimental quantification of residual stresses to investigation of self-shaping mechanism

Quentin LE PAIH, *Université de Bretagne Sud, France*

12:00 Design and Performance of Al2618/TiB_2 Metal Matrix Composites Produced by Laser Powder Bed Fusion: Results from the ENCOMPASS Project

Riccardo Casati, *Politecnico Di Milano, Italy*

12:25 Fatigue and Fracture properties of Al2618 + TiB2-reinforced Metal Matrix Composite produced by Powder Bed Fusion–Laser Beam

Luca Mariotti, *Politecnico Di Milano, Italy*

12:50 Lunch (Escape, Tennis Hall)

Date: Thursday 11th June 2026 **Time:** 11:10 – 12:50

Room: Newton 1

Theme: Composites

Topic: Design and Manufacturing

11:10 Nonlinear Acoustics for the Condition Monitoring of Composite Aerospace Structures

Lydia Pavey, *Theta Technologies Ltd, United Kingdom*

11:35 Manufacturing of liner-less tank structures for crygenic application in launcher structures

Gregor Endres, *MT-Aerospace, Germany*

12:00 Are sustainable and demisable biobased composites space flightworthy ? Presentation of qualification test results done in 2025 and way forward 2030

Christian Puig, *Airbus, France*

12:25 Design, Analysis, and Testing of Composite Multi-Payload Adapters as an Alternative to Metallic ESPAs

Carlo Socci, *ATG Europe, Netherlands*

12:50 Lunch (Escape, Tennis Hall)

Date: Thursday 11th June 2026 **Time:** 11:10 – 12:50

Room: Newton 2

Theme: In Space Manufacturing

Topic: Metal AM, Welding, Cutting and Repair 3

11:10 In-Situ Sustainable Manufacturing and Repair of Aluminium Structures for Space Applications

Rafael Nunes, *Belgian Welding Institute, Belgium*

11:35 Laser Welding for In-Space Construction - Insights from an ESA Study

Erik Kulu, Moliri, *Factories In Space, Switzerland*

12:00 Electron Beam Processes for Space Applications

Colin Ribton, *TWI Ltd, United Kingdom*

12:25 In-Space Manufacturing Using Laser Beam Welding Antonio

J. Ramirez, *The Ohio State University, USA*

12:50 Lunch (Escape, Tennis Hall)

Date: Thursday 11th June 2026 **Time:** 11:10 – 12:50

Room: Einstein

Theme: Additive Manufacturing

Topic: Large Structures and Scale Up

11:10 Development of Additive Manufacturing Process and Optimization-Based Lightweight Design for Large Rocket Structures

Kosuke Kawakami, *Japan Aerospace Exploration Agency, Japan*

11:35 Turning Sci-Fi into Sci-Reality - A Large-Scale Solid-State Metal Manufacturing Story

Zachary Courtright, *LeapFast Manufacturing Inc., United States*

12:00 Manufacturing of an Aluminum Launch Interface Ring using DED additive manufacturing

Norberto Jimenez Mena, *Crmgroup, Belgium*

12:25 ESA-GSTP – Primary Structures made by AM

Philippe Hendrickx, *Sabena Aerospace Technologies, Belgium*

12:50 Lunch (Escape, Tennis Hall)

Date: Thursday 11th June 2026 **Time:** 13:50 – 14:35

Room: Erasmus High Bay

Theme: Keynote Presentation

Expanding the Performance–Life Frontier of Reusable Rocket Engines

Zachary Cordero, *MIT, United States*

Date: Thursday 11th June 2026 **Time:** 14:45 – 17:20

Room: Erasmus High Bay

Theme: Additive Manufacturing

Topic: RF and Embedded Sensors

14:45 Additively Manufactured Non-planar RF Structures Using Multi-material 3D Printing

Mila Crook, *Leonardo Uk, United Kingdom*

15:10 Development and Integration of Embedded Sensors for Advanced Manufacturing Processes

Joni Reijonen, *VTT Technical Research Centre Of Finland Ltd., Finland*

15:35 Coffee Break

Topic: Cold Spray

16:05 Cold Spray Additive Manufacturing (CSAM) Process to Produce Large-Scale Parts for the Next Generation Rocket Engines

Steffen Beyer, *Arianegroup Gmbh, Germany*

16:30 High-temperature alloys for high-performance in-space propulsion applications using Cold Spay Additive Manufacturing – CSAM

Sascha Bernhardt, *Impact Innovations Gmbh, Germany*

16:55 Proving the concept of cold spray as a technology for repair and additive manufacturing in a space environment\

Patrizio Lomonaco, *Tu Delft, Netherlands*

17:30 Conference Closure (Erasmus, High Bay)

Date: Thursday 11th June 2026 **Time:** 14:45 – 17:20

Room: Erasmus Auditorium

Theme: Additive Manufacturing

Topic: Exploration

14:45 Partnerships to advance next generation manufacturing capabilities in support of NASA's exploration goals

Mallory James, *NASA, United States*

15:10 Overview of advanced manufacturing technologies at The Exploration Company for space vehicle development

Maximilian Strixner, *The Exploration Company, Germany*

15:35 Coffee Break

Topic: Polymer AM and 4D Printing

16:05 3D printing of high viscosity elastomeric compounds combining photo- and thermal-curing

Mario Bragaglia, *University Of Rome Tor Vergata, Italy*

16:30 Vacuum Fused Filament Fabrication of High-Performance Polymers with Integrated Functional Coatings for Advanced Space Applications

Marvin Kühn, *University of the Bundeswehr Munich, Germany*

16:55 Flight qualification of additively manufactured polymer fluid manifolds for life-detection instruments

Theresa Juarez, *NASA Jet Propulsion Laboratory, United States*

17:30 Conference Closure (Erasmus, High Bay)

Date: Thursday 11th June 2026 **Time:** 14:45 – 17:20

Room: Newton 1

Theme: Surface Engineering

Topic: Radiation Shielding

14:45 Lightweight radiation shielding materials : 3D graded-Z shielding manufacturing approach

Nicolas Nutal, *Crm Group, Belgium*

15:10 Materials and Manufacturing of Radiation Shielding Coatings for CubeSat Applications

Vito Di Pietro, *TWI Ltd, United Kingdom*

10:35 Coffee Break

Topic: Functional Surfaces

16:05 Solid-State Additive Manufacturing - where are we now ?

Jorge F. dos Santos, *Stirtec Gmbh, Germany*

16:30 A new generation of robust, solid-lubricant MoS2 coatings for bearing application

Volker Weihnacht, *Fraunhofer IWS, Germany*

16:55 Direct Laser Interference Patterning for Functional Surfaces in Space Applications

Christoph Zwahr, *Fraunhofer Iws, Germany*

17:30 Conference Closure (Erasmus, High Bay)

Date: Thursday 11th June 2026 **Time:** 14:45 – 17:20

Room: Newton 2

Theme: In Space Manufacturing

Topic: In Space Manufacturing of Polymers

14:45 Robotic Extrusion of Photopolymers under High Vacuum for Out of Earth Manufacturing

Jannik Pimpi, *Munich University Of Applied Sciences, Germany*

15:10 PEEK-based Materials for 4D Printing Applications in Space

Lucrezia Miseri, *University Of Rome Tor Vergata, Italy*

15:35 Coffee Break

Topic: Miscellaneous Processes

16:05 Building Before Servicing: Large-Structure Assembly as the Foundational Step in ISAM Maturity

Mike Curtis-Rouse, *Satellite Applications Catapult, United Kingdom*

16:30 Towards robotically reconfigurable large-scale orbital trusses: loose-fit joint design via conformal interfaces

Aran Sena, *Foster + Partners, United Kingdom*

16:55 µCAP: High-Precision Capillarity Printing for In-Space Manufacturing and Repair of Electronics

Yovan Orlic, *Maana Electric, Luxembourg*

17:30 Conference Closure (Erasmus, High Bay)

Date: Thursday 11th June 2026 **Time:** 14:45 – 17:20

Room: Einstein

Theme: Additive Manufacturing

Topic: Testing and Mechanical Performance

14:45 Fracture and Fatigue of Additively Manufactured Metals

Theresa Juarez, *NASA Jet Propulsion Laboratory, United States*

15:35 Coffee Break

Topic: Performance Prediction and Modelling

16:05 Demonstration of model-based variable parameter generation for homogeneous material properties in laser based powder bed fusion components

Tim Koenis, *Royal Netherlands Aerospace Centre, Netherlands*

16:30 FEM-driven optimization of thin-walled DED components for aerospace applications: predictive capabilities, experimental validation and process parameter sensitivity

Alberto Santoni, *Università Politecnica Delle Marche, Italy*

16:55 Novel Method for Generating Self-Supporting Graph-Based Organic Structures for Additive Manufacturing For Space Applications

Nieves Cubo-Mateo, *Nebrija University / Hospital General Universitario Gregorio Marañón, Spain*

17:30 Conference Closure (Erasmus, High Bay)

Posters

In Space Manufacturing

P01 SPACE INDUSTRIAL COMPLEX: Outer Space AI

Leorick Chilimanzi, *Florida International University, United States*

P02 Integrated Self-Destruct Satellites: A Built-In End-of-Life Debris Mitigation Solution
Anmol Gandhi

P03 Modelling the Rheological Behaviour of Regolith Simulant Pastes for the construction of habitats and buildings

Pavlos Stephanou, *Cyprus University of Technology, Cyprus*

P04 A Flight-Ready, NASA-STD-Compliant System for Atomic Oxygen Mitigation in LEO-Based Titanium Additive Manufacturing

Sujit Pal, *Public Access Llc, United States*

P05 Phonon-Mediated Thermal Transport in Lunar Regolith and Its Implications for Additive Manufacturing

Sujit Pal, *Public Access Llc, United States*

P06 Basic Study for Lunar Regolith Powder Bed Fusion in High Gravity

Ammar Alkhaled, *Keio University, Japan*

P07 Towards Sustainable Space Manufacturing: Laser Powder Bed Fusion of Metal-Blended Regolith to Enhance the Performance of Additively Manufactured Parts

Yassir Ben Dahou, *Politecnico Di Milano, Italy*

P08 MPEC (Multi-Purpose Environmental Chamber)

Matthew Deans, *University of Glasgow, United Kingdom*

P09 MoonFibre – Enabling Lunar Autonomy Through In-Situ Fibre Manufacturing

Felix Schmidt, *Fibrecoat Gmbh, Germany*

P10 Characterisation of Gecko-Inspired Adhesive Performance After Thermal Vacuum Cycling

Emre Artar, *European Space Agency, France*

P11 PEEK-based 3D Printed Piezoresistive Sensors for In-Space Printed Smart Devices
Tibor Barši Palmić, *University Of Ljubljana, Slovenia*

P12 Nuada X1 Microgravity Validation of Free-Floating Robotic Assembly for Out of Earth Manufacturing

Alex Lake, *University of Glasgow, United Kingdom*

P13 Preliminary design and structural analysis of a Martian habitat module using regolith-based 3D printing.

Martin Alonso Lalanda, *University of León, France*

P14 Regolith to Repairs: ISRU for Additive Manufacturing of Electronics

Andreas Weje Larsen, *Danish Technological Institute, Denmark*

Additive Manufacturing

P15 Smart Skin for Exploration Cobots

Andreas Weje Larsen, *Danish Technological Institute, Denmark*

P16 Feasibility demonstration of manufacturing liquid- (LH2), gaseous (GH2) and physiosorbed hydrogen storage vessels with incorporated thermal management enabled by use of wire Directed Energy Deposition (wDED)

Kamalesh Bharadwaj, *Ait Austrian Institute Of Technology, Austria*

P17 Feasibility of Muon Scattering Tomography (MST) for sub-centimeter defect detection in aerospace structures: a Geant4 simulation study.

Noemi Zabari, *Muotech, Poland*

P18 Closing the Loop Between Modelling and Experiment: A Material Acceleration Platform for AM Alloy Innovation

Pentti Kalliotiura, *VTT, Finland*

P19 Design and realization of small size 316L additive manufactured compliant mechanism through finite element analysis and material characterization

Gianni Virgili, *Università Politecnica Delle Marche, Italy*

P20 Crack Mitigation in High-Performance Nickel-Based Superalloys in Powder Bed Fusion Laser Beam of Metals PBF-LB/M via Zr and TiC Addition

Klaus Brings, *Rwth Aachen University, Germany*

P21 Directed energy deposition of metal matrix composites for aerospace application

Maria L. Montero-Sistiaga, *Royal Netherlands Aerospace Centre, Netherlands*

P22 Representative Quality Indicators (RQIs) for Large-Scale Additive Manufacturing: Flaw Generation Mechanisms, Nonlinear Resonance Detection, and Pathway to Industrial Qualification

Daniel Rodriguez Sanmartin, *Theta Technologies Ltd, United Kingdom*

P23 Fulfilling AM's Potential: Fast Development Cycles, NDT and Quality Assurance Using Nonlinear Resonance

Daniel Rodriguez Sanmartin, *Theta Technologies Ltd, United Kingdom*

P24 Laser-based powder bed fusion and plasma electrolytic oxidation of magnesium structures to fabricate lightweight and corrosion resistant space components

Michael Müller, *Laser Zentrum Hannover e.V., Germany*

P25 The topologically consistent metamaterials. A new class of functionally graded lattice structures with unstructured configurations.

Luis Saucedo-mora, *Universidad Politécnica De Madrid, Spain*

P26 ESA AMBC at The MTC; Process investigation and development to accelerate industrialisation.

Hoda Amel, *The MTC, United Kingdom*

P27 Optimization of capillary mesh for thermal systems using additive manufacturing: exploration of design through different manufacturing strategies

Damien Serret, *TEMISTh, France*

P28 Prediction of the spreadability of metal powders: the last developments

Roozbeh Valadian, *Granutools, Belgium*

P29 Process development of Cold Metal Transfer-based WA-DED for AZ61 magnesium alloy components

Jakub Slavíček, *Brno University Of Technology, Czech Republic*

P30 Wire-based friction stir additive manufacturing: A solid-state approach for producing high-strength large-scale aluminum alloy components

Stefan Donaubauer, *MPA University of Stuttgart, Germany*

P31 Metal powders in additive manufacturing: An approach to sustainable production and recycling

Emmanuel De La Rochefoucauld, *Irt M2p, France*

P32 High-performance auxetic structure for energy absorption

Vítězslav Sobol, *Brno University Of Technology, Faculty of Mechanical Engineering, Czech Republic*

P33 Mechanical and Microstructural Assessment of 316L/17-4PH Multi-material Interfaces Manufactured by LPBF

Daniel Koutný, *Brno University Of Technology, Czech Republic*

P34 Superelastic metamaterials with controlled anisotropy

Karel Brulík, *Faculty of Mechanical Engineering, Brno University Of Technology, Czech Republic*

P35 Advancing High-Resolution Additive Manufacturing for Compact, Integrated Q, V, and W-Band Passive RF Components

Vaclav Pejchal, *CSEM, Switzerland*

P36 Tailored Surface Texture Characterisation for Metal PBF - Threshold Definition for Feature-based Approaches

Theresa Buchenau, *Fraunhofer IFAM (Institute for Manufacturing Technology and Advanced Materials), Germany*

P37 Mechanical Characterization of ER 5183 Aluminum Parts Produced by Wire Arc Additive Manufacturing (WAAM),

Samuel Monteiro Couto Cruz, *Universidade Federal De Itajubá, Brazil*

P38 Microstructural and Thermo-Mechanical Investigation of Additively Manufactured Pure Copper and GrCop42

Shirin Dehgahi, *University Of Twente, Netherlands*

P39 Compressing Reality: Joint Embedding Space as the Latent World Model for Real-Time DED Process Monitoring and Control

João Sousa, *University Of Porto, Portugal*

P40 Accelerated Material Property Screening for Longevity on the Example of Very High Cycle Fatigue of AM Steels

Sebastian Schettler, *Fraunhofer Institute For Material And Beam Technology Iws, Germany*

P41 HEA4Space – Assessment Of High Entropy Alloys For Space Applications

Carlos Belei, *RHP-Technology Gmbh, Austria*

P42 Predicting failure of parts with complex defect patterns through FEA from XCT scan geometries

Greta Skorupska-Ruiz, *Delft University of Technology, Netherlands*

P43 Hybrid Additive-Subtractive Manufacturing of Topology-Optimized Satellite Structural Panels for Mass Reduction and Design Flexibility

Haifa Almofareh, *Technical University Of Vienna, Austria*

Digital and Smart Manufacturing

P44 Digital Twin–Enabled Manufacturing Readiness for Student-Led Small Satellite Projects: A Systems-Based Approach to Early Workforce Development

Haifa Almofareh, *Technical University Of Vienna, Austria*

P45 The acknowledge management and the manufacturing : the AI processing to ensure the operationnal feedback through the REX procedure for Space systems

Djamel Metmati, *Csi, Italy*

P46 The tool box of MBSE approach through the add-on of SysML v2 to improve the engineering management : the use case of a Comms subsystem

Djamel Metmati, *Csi , Italy*

P47 Automized AI-assisted quality evaluation and adaptive rework for laser-based coating removal using hyperspectral imaging

Christoph Zwahr, *Fraunhofer Iws, Germany*

P48 Inorganic Perovskite Sensors for Space Radiation Monitoring

Nicola Calisi, *University Of Florence, Italy*

P49 Data Driven Tuning Of Perovskite Photovoltaics For Space Applications

Abhishek Kumar, *Leonardo Spa, Italy*

Composites

P50 Toward Green Sensing: Reusable Printed Sensor Technologies and Sustainable Materials Innovations in the EECONE Project

Abhishek Kumar, *Leonardo Spa, Italy*

P51 From 4D printing to AFP: a mould-free additive manufacturing process for production of large-scale high-performance thermoplastic composite structures

Melvin Josselin, *Université De Bretagne Sud, France*

P52 Developing Regolith-Loaded SLA Composites for Lunar In-Situ Resource Utilization

Stefano Caporali, *Unifi, Italy*

P53 Development of Mycelium-PLA Composites with Enhanced Mechanical Properties and UV Resistance

Mihael Brunčko, *University of Maribor, Slovenia*

P54 Metalized thermoplastics enable integration of functionalities in composite structures

Koen Hollevoet, *Compolam, Belgium*

P55 Microvascular FRP Composites as a Platform for Smart Properties in Materials

Wojciech Guziewicz, *AGH University Of Krakow, Poland*

Advanced Manufacturing of Electronics

P56 Improvement of electrical properties in hybrid 3D printing

Elodie Pereira, *Cttc, Spain*

P57 Radiation Tolerance of Pyrite (FeS_2) Absorber Materials for Lunar and Space Photovoltaic Applications

Marc Heemskerk, *Taltech, Estonia*

P58 Electromechanical Multifunctional Parts via Hybrid Manufacturing: Opportunities and Challenges

David Novo, *Csem Sa, Switzerland*

Miscellaneous

P59 Nanostructured Coating for 3D-Printed Aluminium

Maido Merisalu, *University Of Tartu, Estonia*

P60 Surface Engineering Process for Lightweight Materials Used in Aerospace Applications

Helin Maria Unt, *Captain Corrosion OÜ, Estonia*

P61 Lunar Regolith Surface Metallization using Thermal Spray Technology

Pratidhwani Biswal, *Fraunhofer Institute for Large Structures in Production Engineering IGP, Germany*

P62 We Can Weld in Space. Ultra Safe and Can Scale Tubular or Linear

Paul Cheng, *Fusering Inc., United States*

P63 A ductile chromium-molybdenum alloy resistant to high-temperature oxidation

Ewa M. Hahn, *ESA-ECSAT, United Kingdom*

P64 A Quantitative Framework for Predicting Particle Impact Ignition in High-Pressure Oxygen Systems

Gregory Harrigan, *National Aeronautics And Space Administration, United States*

P65 From Materials and Processes to High-Frequency Systems: An Integrated Approach to Additively Manufactured Electronics

Mirko Sidoti, *Nano Dimension Gmbh, Germany*