ASME I-AM 2022

International Additive Manufacturing Conference

Program

CONFERENCE
October 19-20, 2022

Optional Facility Tours:
October 21, 2022

Lisbon, Portugal

https://event.asme.org/IAM

The American Society of Mechanical Engineers®
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EWF

ASME
SETTING THE STANDARD

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WELCOME to I-AM 2022

Conference Chair
Dheepa Srinivasan
Pratt & Whitney

It gives us great pleasure to welcome everyone who has come from near and far, to this first international symposium on Additive Manufacturing (I-AM 2022), jointly organized by ASME (American Society of Mechanical Engineers) and EWF (European Welding Federation) in this beautiful city of Lisbon. It is exciting to note that everyone will be meeting in person something which we have missed during the last couple of years.

The evolution of additive manufacturing technologies has changed the face of direct, digital technologies for the rapid production of models, prototypes, patterns and functional parts including repair and maintenance. Metal 3D Printing is poised to be the next industrial revolution in metals, plastics and ceramics, in enabling advancements in Defense, Aerospace, Power, Healthcare, Marine, Nuclear, Space, Oil & Gas, and various other sectors, defying the imagination of the designer.

We have had an overwhelming response to the call for abstracts. This is a positive start towards the effort to advance the additive manufacturing ecosystem, with experts from industry, academia, research labs, original equipment manufacturers, end users and budding researchers and students.

The symposium is scheduled over two days, October 19-20th with optional Industry Tours on the 21st.The conference covers four tracks, comprising, Polymers, Metals, Ceramics and Emerging Technologies. The contributory papers range from cutting edge research and developments in process optimization, new materials development, structure-property correlations, practical challenges in industrialization, design for additive manufacturing with participants from 16 different countries, to bring out a truly global insight into additive manufacturing.

Renowned global experts will be delivering a keynote lecture, addressing different aspects of how AM will enable sustainability. In addition, an exciting panel has been scheduled to address the wholistic role of standards, qualification and certification as enablers of accelerated qualifications in additive manufacturing.

We will have the opportunity to witness some state-of-the-art development in AM machines, consumables, characterization equipment, with an impressive list of generous sponsors covering a wide range of allied areas related to AM.

This conference has been made possible by a very passionate committee of over two dozen senior colleagues from academia and industry, who have volunteered their valuable time to ensure the roaring success of this first AM symposium.

We are sure that all of you will have a very enriching meeting in Lisbon.

Sincerely,

Dheepa Srinivasan

ASME I-AM 2022 Symposium
International Additive Manufacturing Conference

SCHEDULE AT A GLANCE

Wednesday October 19, 2022	Thursday October 20, 2022	Friday October 21, 2020
Registration 7:30 am -5:30 pm	**Registration** 8:00 am -3:30 pm	
Conference Sessions & Qualifications and Skills for AM 8:30 am-10:00 am	**Conference Sessions** 8:30 am-10:00 am	
Coffee/Tea Break 10:00 am-10:30 am	**Coffee/Tea Break** 10:00 am-10:30 am	**Facility Tours** 10:00 am-3:00 pm
Tabletop Exhibit 10:00 am – 5:00 pm	**Tabletop Exhibit** 10:00 am – 5:00 pm	
Keynote 10:30 am-12:30 pm	**Panel: The Future of Standardization** 10:30 am-12:30 pm	
Opening Lunch 12:30 pm-1:30 pm	**Closing Lunch** 12:30 pm-1:30 pm	
Conference Sessions & Qualifications and Skills for AM 1:30 pm-3:30 pm	**Conference Sessions** 1:30 pm-3:30 pm	
Coffee/Tea Break 3:30 pm-4:00 pm	**Coffee/Tea Break** 3:30 pm-4:00 pm	
Conference Sessions 4:00 pm-6:00 pm	**Conference Sessions** 4:00 pm-6:00 pm	
Welcome Reception 6:00 pm -7:00 pm	**WindWalkers Tour** 6:30 pm -9:00 pm	
I-AM Dinner (*Ticketed Dinner) 7:00 pm – 9:00 pm		

	Registration & Speaker Ready Room
	Conference Sessions
	Coffee/Tea Break
	Keynote & Plenary Sessions
	Lunch
	Events
	Tabletop Exhibit

2022 I-AM ORGANIZING COMMITTEE

Conference Chair
Dheepa Srinivasan
Pratt & Whitney

Technical Program Chair
Yan Wang
Georgia Tech

Technical Program Chair
Michelangelo Mortello
Italian Institute of Welding

Review Chair
Guglielmo Vastola
*A*STAR*

Review Chair
Fernando Mañas
CESOL

Review Chair Advisor
Tim Simpson
Penn State

2022 I-AM TRACKS & TRACK CHAIRS

POLYMERS

Track Chair: Albert E. Patterson, Texas A&M
Track Chair: Paula Queipo, Idonial

The Polymers Track for IAM22 focuses on the additive manufacturing of polymer and polymer-based materials, including polymer matrix composites. This track represents a wide variety of topics related to materials science and engineering, mechanics of materials, design, manufacturing science, manufacturing processes, process design and optimization, polymer reuse and recycling, repair with polymer AM, policy and regulations related to polymer AM, standards and testing methods, and other areas of major contemporary interest. All polymer AM process types are welcome, including extrusion-based processes (e.g., FDM/FFF and bioplotting), binder jetting, material jetting (e.g., PolyJet and InkJet-based processes), resin-based processes (e.g., stereolithography, DLP, and LCD), powder bed melting (e.g., polymer SLS), and laminated layer processes. This track welcomes experimental, analytical, and computational works, as well as combinations of these approaches. Technical papers, critical reviews, and oral presentations related to one or more of the individual topics are sought for this conference from interested researchers and practitioners; both academic and industry contributions are welcome for the Polymers Track. Please see the IAM 22 Instructions for Authors for guidance on preparing and submitting materials for this track.

Potential topics include, but are not limited to:

- Properties and Characterization of Polymer AM
- AM vs Traditional Methods for Polymers
- Process/Material Modeling for Thermoplastics
- Process/Material Modeling for Thermosets
- Process/Material Modeling for Biomaterials, Gels, and other Polymers
- Process/Material Modeling for Polymer Matrix Composites
- Process/Material Modeling for Multi-Materials
- Polymer Process Design and Optimization
- Design for/with Polymer AM
- Standards and Testing Methods
- Heat Treatment, Sintering, Consolidation, and Stress-Relieving Methods
- Recycling, Reuse, Repair, and End-of-Life Design
- End-User Manufacturing
- Safety, Regulations, Education, and Policy
- Software and Modeling Methods
- Tooling and Secondary Polymer AM

CERAMICS

Track Chair: Grégoire Witz, Siemens
Track Chair: Paula Vilarinho, Universidade de Averio

The Ceramics Track for IAM22 focuses on the additive manufacturing of ceramic materials, ceramic composites, and ceramic-based multi-materials. This track covers a wide variety of topics related to materials science, mechanics of materials, design, manufacturing processes, process design and optimization, material reuse and recycling, policy and regulations, standards, testing methods, and other areas of major contemporary interest. All ceramic AM processes are welcome, including material extrusion (e.g., FDM, FDC, Robocasting..), vat photopolymerization (e.g., SLA, DLP…), material jetting (e.g., Ink Jet, Aerosol Jet, NanoParticle Jetting…), sheet lamination, binder jetting, direct energy deposition, powder bed fusion and hybrids of these processes.

Potential topics include, but are not limited to:

- General Problems in Ceramic AM
- Properties of Ceramic AM Material
- Ceramic AM vs Traditional Methods
- Process/Material Modeling
- Ceramic AM Process Design and Optimization
- Design for AM (Ceramics
- Standards and Testing Methods
- Heat Treatment, Infiltration, Sintering, Machining, and Surface Finishing Methods
- Quality Assurance
- Ceramic Waste Materials Recycling
- End-User Manufacturing
- Safety, Regulations, and Policy for Ceramic AM
- Molds, Cores and Secondary Ceramic AM
- Applications

METALS

Track Chair: Guha Manogharan, Penn State University
Track Chair: Jean-Daniel Penot, CESI
Track Chair: Doug Kautz, Los Alamos National Lab

The Metals Track for IAM22 focuses on the additive manufacturing of metallic materials, graded metals, dissimilar metals, and AM metals on existing structures. The physical, mechanical, and chemical properties of metallic components fabricated by the various metal AM design and processing methods will be covered, as will ways to improve the properties of these materials. New and innovative processing methods will be covered in the session, as will novel applications of AM processing and hybrid manufacturing. As metal additive manufacturing is better understood, advancements in the modeling of these processes will be addressed as well.

Potential topics include, but are not limited to:

- Metal AM processing of Novel Materials
- Process Monitoring in Metal AM
- Enhancing Properties of Metal AM parts
- Advancements in Process Modeling and simulation in Metal AM
- Recent trends in Characterization and Testing of Metal AM Parts
- Novel Applications of Metal AM
- Developments in Repairing and Multi-Material Metal AM
- Hybrid AM: Integrating AM with traditional processes
- Design for Metal AM
- Industrialization of Metal AM: value chain, industrial use cases, qualification, quality insurance
- Metal AM processes design and optimization: from widespread processes (L-PBF) to strong growth processes (binder jetting, Arc-DED)
- Physics of metal AM: energy-matter interaction, fast cooling, solidification, etc.
- Process hybridization AM+AM process
- Large scale Metal AM applications, e.g., Cold Spray and DED
- Economic factors of metal AM

EMERGING TECHNOLOGIES

Track Chair: Xian Du, UMass Amherst
Track Chair: David Wimpenny, MTC - The Manufacturing Technology Centre

The Emerging Technologies Track for IAM22 focuses on the broad applications of AM and new challenges caused by AM and these applications. AM offers many advantages over traditional manufacturing; however, several disadvantages are known such as poor mechanical properties due to material limit, slow build rates, and a lack of industry standards for testing and evaluating the limits of the widespread use of the technology. New materials and new methods for processing and post-processing are needed to improve the quality of 2D- or 3D-printed parts and the range of mechanical properties achievable for broad applications.

Potential topics include, but are not limited to:

- Novel materials in AM
- Qualifications/Quality Assurance/Quality Control (Q3) of AM
- Green/sustainable AM
- Large scale AM
- Biomedical AM
- Lab assisted AM
- Multi-technology integration for AM
- Smart AM
- High performance computational process modeling and simulation of AM

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SPOTLIGHT SPONSOR TALKS

Join I-AM 2023 Sponsors and they address various aspects of additive manufacturing including:

- the future of education
- sustainable additive manufacturing
- qualifying and building components
- developing products fit for service
- case study reviews
- inspection qualifications
- repairs and alterations

Wednesday, October 19 8:30 AM – 10:00 AM
Room Location: Buenos Aries

Volker Kunze
Additive Minds Academy

Joel Amato
NBBI

Nikolag Zangenberg
Easi-Stress

Thursday, October 20 8:30 AM - 10:00 AM
Room Location: Milano 1

Dana Ibrahim Salem Abdulla Alhammadi
Higher Colleges of Technology

Miguel Aguayo
Meltio

Teresa Melfi
The Lincoln Electric Company

KEYNOTE & PLENARY SESSION

Wednesday, October 19, 2022
10:30 AM – 12:30 PM

Vice President Technology & Innovation, Siemens Energy Service and Professor Babu Sudarshan, ORNL Governor's Chair of Advanced Manufacturing and Director of Bredesen Center for Interdisciplinary Research & Graduate Education at the University of Tennessee, Knoxville have joined forces to deliver a keynote program addressing the need to accelerate the industrialization of additive manufacturing in strategic next generation products.

Navrotsky & Sudarsanam highlight the imperative role of innovative developments from coupon to part level qualifications in a scientific manner using concurrent and integrated approaches between experiments developing predictive capabilities including advanced inspection technologies.

Professor Babu Sudarshan
Governor's Chair of Advanced Manufacturing
and Director of Bredesen Center for
nterdisciplinary Research & Graduate Education
ORNL & University of Tennessee, Knoxville

Dr. Vladimir Navrotsky
Vice President Technology & Innovation
Siemens Energy Service

ASME I-AM 2022 Symposium
International Additive Manufacturing Conference

PANEL: THE FUTURE OF STANDARDIZATION

Thursday, October 20, 2022
10:30 AM – 12:30 PM

Join us to know more about the role of standardization in AM! A debate of barriers, challenges and good practices leading the way of standards from R&D to industry. The session will be composed of 3 main pitches, each of them followed by a panel discussion on a specific topic, that will be preceded with an opening from two keynotes.

Keynote Speakers

Klas Boivie
Senior Researcher in AM technology
SINTEF Manufacturing AS

Teresa Melfi
Technical Fellow in the Research and Development Department
Lincoln Electric

Invited Speakers

Nikolaj Zangenberg
Innovation Manager, EASI-STRESS Project Coordinator
Danish Technological Institute

Pedro Alvarez
Director of Research and Technology Strategy
LORTEK

Stewart Williams
Technical Director & Founder
WAAM3D

QUALIFICATION & SKILLS FOR ADDITIVE MANUFACTURING

Wednesday, October 19, 2022
Session One: 8:30 AM – 10:00 AM
Session Two: 1:30 PM – 3:30 PM

Join the Qualifications & Skills for AM session dedicated to present the latest outcomes and emergent profiles for the AM sector at international level. This will count on an experts panel to present and dynamize several pitches with particular focus on:

- Harmonization
- Flexibility
- Quality
- Then Future of AM Education

Don't miss the opportunity to get to know the trends and interact with other relevant AM players

Yvonne Johannsen
LZH Laser Academy
Project Manager

Harry Bikas
Laboratory for Manufacturing Systems and Automation, Patras University
Research Engineer & Project Manager at LMS

Adelaide Almeida
EWF – European Federation for Welding, Joining and Cutting
Project Manager
& SAM Project Coordinator

NETWORKING EVENTS

Welcome Reception

Wednesday, October 19
The Mezzanine, Altis Hotel
6:00 PM – 7:00 PM

All Conference registrants are invited to join their colleagues for complimentary light refreshments during the Wednesday evening event. In a casual atmosphere, greet friends, and meet the thinkers from around the world who are shaping the future of Additive Manufacturing.

IAM Dinner (Ticketed €100)

Wednesday, October 19
Location to be announced
7:30 PM – 10:30 PM

Please register to attend this ticketed dinner to celebrate the Anniversary of the European Welding Federation and the first annual I-AM conference.

Windwalker Tours

Thursday, October 20
Departure location to be announced
6:30 PM – 9:00 PM

All Conference registrants are invited to join this complimentary walking tour of Lisbon hosted by the EWF. Spots are limited so please reserve your space during the registration.



TECHNICAL PROGRAM

WEDNESDAY, OCTOBER 19

01-01 Polymers: Characterization and Mechanical Properties I
10/19/2022
8:30 AM to 10:00 AM - Milano 2

PRESENTATIONS

Influence of Matrix Material on Impact Properties of Chopped Carbon Fiber-Thermoplastic Composites Made Using Fdm/fff, {IAM2022-88941}
Technical Paper Publication
- Albert E. Patterson - Texas A&M University
- Seymur Hasanov - University of Alabama in Huntsville
- Bhaskar Vajipeyajula - Texas A&M University

Fused Granulated Fabrication (Fgf) Processing Study for Novel Scflmpaek Recycled Material to Manufacture Aeronautic Structural Parts., {IAM2022-93890}
Technical Paper Publication
- Celia Martín-Pérez - AIMEN
- Daniel Rodríguez-Del Rosario - AIMEN
- Elena Rodríguez-Senín - AIMEN
- Noelia González-Castro - AIMEN

Food Contact Materials: An Analysis of Water Absorption in Nylon 12 3d Printed Parts Using Sls After Vaporfuse Surface Treatment., {IAM2022-93944}
Technical Paper Publication
- Elizabeth Cristine Adam Trindade - Université du Quebec à Rimouski
- Camille Ruest - Université du Quebéc à Rimouski
- Jean-Sébastien Deschênes - Université du Québec à Rimouski
- Jean Brousseau - Université du Québec à Rimouski

03-06 Metals: Mechanical Properties
10/19/2022
8:30 AM to 10:00 AM – Milano 1

PRESENTATIONS

Progress in Laser Direct Energy Deposition, {IAM2022-95507}
Technical Presentation Only
Robert Scudamore - TWI
Carl Hauser - TWI
Josh Barras - TWI

Effect of Short Cycle Heat Treatments on Microstructure and Mechanical Properties of Additively Manufactured Mar-M 509, {IAM2022-91410}
Technical Paper Publication
Shreehard Sahu - Indian Institute of Technology, Bombay
Bikash Kumar - Indian Institute of Technology, Bombay
Siba Sundar Sahoo - Indian Institute of Technology, Bombay
Balila Nagamani Jaya - Indian Institute of Technology, Bombay
Dheepa Srinivasan - Pratt and Whitney

Effect of Heat Treatments on the Structure – Properties of Pbf-Lb/in939 Alloy, {IAM2022-93945}
Technical Paper Publication
Athira K S - Indian Institute of Technology Hyderabad
Nandha Kumar Eswaramoorthy - Pratt & Whitney R&D Center
Subhradeep Chatterjee - Indian Institute of Technology Hyderabad
Dheepa Srinivasan - Pratt & Whitney R&D Center

04-02 Emerging Technologies: Novel AM Design
10/19/2022
1:30 PM to 3:30 PM – Milano 1

PRESENTATIONS

Am Modular Plant for On-Site Production, {IAM2022-93949}
Technical Paper Publication
Tiphaine Baur - CESI
Jean Daniel Penot - CESI
Lucas Reyes - CESI
Christophe Bourgognon - CESI
David Failly - CESI

Roll-to-Roll for Cold Spray Manufacturing Processes, {IAM2022-92258}
Technical Presentation Only
Sahil Wankhede - UMass Amherst
James Watkins - UMass Amherst
Xian Du - University of Massachusetts Amherst

Exploring Augmented Reality for Teaching Design for Additive Manufacturing, {IAM2022-94406}
Technical Paper Publication
Gustavo Melo - Chair for Digital Additive Production DAP, RWTH Aachen University
Rohit Ravi - Chair for Digital Additive Production DAP, RWTH Aachen University
Lucas Jauer - Chair for Digital Additive Production DAP, RWTH Aachen University
Johannes Henrich Schleifenbaum - Chair for Digital Additive Production DAP, RWTH Aachen University

03-07 Metals: Laser Processing
10/19/2022
1:30 PM to 3:30 PM - Roma 1 & 2

PRESENTATIONS

Dimensional Deviation Prediction Model Based on Scale and Material Concentration Effects for Lpbf Process, {IAM2022-93969}
Technical Paper Publication

Sabrine Ben Amor - University of Sousse, LMS-ENISO
Floriane Zongo - Ecole de Technologie Supérieure, Montréal, Canada
Borhen LOUHICHI - University of Sousse
Antoine Tahan - Ecole de Technologie Supérieure, Montréal, Canada
Vladimir Brailovski - Ecole de Technologie Supérieure, Montréal, Canada

Effect of Build Geometry, Orientation and Heat Treatments on the Microstructure and Mechanical Properties of Laser Powder Bed Fusion Cucrzr Alloy, {IAM2022-93986}
Technical Paper Publication

Anup Kulkarni - Pratt and Whitney R&D Center
Vivek C. Peddiraju - Indian Institute of Technology Hyderabad
Subhradeep Chatterjee - Indian Institute of Technology Hyderabad
Dheepa Srinivasan - Pratt and Whitney R&D Center

Advances in Mould Making Using L-Pbf: From Geometric Freedom to New Materials Design, {IAM2022-94465}
Technical Presentation Only

Daniel Ferreira - University of Aveiro
Georgina Miranda - University of Aveiro
Filipe Oliveira - University of Aveiro
Martinho Oliveira - University of Aveiro

L-Pbf Additive Manufacturing of Mould Inserts: New Materials Design and Geometric Freedom, {IAM2022-95203}
Technical Presentation Only

Daniel Ferreira - University of Aveiro
Georgina Miranda - University of Aveiro
Filipe Oliveira - University of Aveiro
Martinho Oliveira - University of Aveiro

03-11 Metals: Simulation, Modeling, and Training I
10/19/2022
1:30 PM to 3:30 PM - Milano 2

PRESENTATIONS

Implementing Discrete Event Simulation to Integrate 3d Sand Printing Technology Into a Sand Casting Production Facility, {IAM2022-94436}
Technical Presentation Only
Osama Aljarrah - Youngstown State University
Jarod Zillinger - Youngstown State University
Marleah Davis - Youngstown State University
Elizabeth Williams - Youngstown State University

Multiphysics Simulation of Multi-Layer Epitaxial Grain Growth in Laser Powder Bed Fusion of Alsi10mg Alloy, {IAM2022-94448}
Technical Presentation Only
Dehao Liu - Binghamton University
Yan Wang - Georgia Institute of Technology

04-03 Emerging Technologies: New Applications of AM
10/19/2022
4:00 PM to 6:00 PM - Bruxelas

PRESENTATIONS

System Architecture and Design Parameters for Extrusion-Based Autonomous Construction Systems, {IAM2022-93884}
Technical Paper Publication
- Albert E. Patterson - Texas A&M University
- Bhaskar Vajipeyajula - Texas A&M University
- William R. Norris - University of Illinois at Urbana-Champaign

Advantages of Additive Manufacturing Technology in Damping Improvement of Turbine Blading, {IAM2022-96752}
Technical Paper Publication
- Grzegorz Moneta - Lukasiewicz Research Network - Institute of Aviation
- Michal Fedasz - Lukasiewicz Research Network - Institute of Aviation
- Michal Szmidt - Lukasiewicz Research Network - Institute of Aviation
- Slawomir Cieslak - Lukasiewicz Research Network - Institute of Aviation
- Wieslaw Krzymien - Lukasiewicz Research Network - Institute of Aviation

Encapsulating and Inkjet-Printing Electronics on Flexible Substrates for Harsh Environment, {IAM2022-92250}
Technical Paper Publication
- Sahil Wankhede - UMass Amherst
- Xian Du - University of Massachusetts Amherst
- Ali Alshehri - Saudi Aramco
- Keith Brashler - Saudi Aramco
- Doru Turcan - Saudi Aramco

A Feasibility Study for Additively Manufactured Composite Tooling, {IAM2022-93952}
Technical Paper Publication
- Max Valentine - University of Bath
- Arjun Radhakrishnan - University of Bristol
- Vincent Maes - University of Bristol
- Elise Pegg - University of Bath
- Maria Valero - University of Bristol
- James Kratz - University of Bristol
- Vimal Dhokia - University of Bath

03-05 Metals: Dissimilar Materials
10/19/2022
4:00 PM to 6:00 PM - Roma 1 & 2

PRESENTATIONS

Synergic Arc Additive Manufacturing of Graded Ferritic-Austenitic Transition Interface Materials for Welding Dissimilar Steels, {IAM2022-93916}
Technical Paper Publication
Onur Balak - Ion Industrial Metallurgy Research and Development Inc.
Hafize Cakmak-Alpaslan - Ion Industrial Metallurgy Research and Development Inc.
Koray Yurtisik - Ion Industrial Metallurgy Research and Development Inc.

Characterization of Waam-Based Bimetallic Component Fabricated With Austenitic Stainless Steel and Inconel 625, {IAM2022-94800}
Technical Paper Publication
Savas Dilibal - Istanbul Gedik University
Ugur Gurol - Istanbul Gedik University
Batuhan Turgut - Gedik Welding Company
Mustafa Kocak - Istanbul Gedik University

Multi Material Tool Manufacturing With Plasma Metal Deposition, {IAM2022-96557}
Technical Presentation Only
John Meuthen - RHP-Technology GmbH
Pier Paolo Curti - RHP-Technology GmbH
Enrique Ariza - RHP-Technology GmbH
Erich Neubauer - RHP-Technology GmbH

Effect of Secondary Austenite on Fracture Toughness Properties of Wire Arc Additively Manufactured Duplex Stainless Steels, {IAM2022-93918}
Technical Paper Publication
Koray Yurtisik - Ion Industrial Metallurgy Research and Development Inc.
Elina Akbarzadeh - Middle East Technical University
Batuhan Ersan - Middle East Technical University
Cemil Hakan Gur - Middle East Technical University

03-08 Metals: New Processing Methods
10/19/2022
4:00 PM to 6:00 PM - Milano 1

PRESENTATIONS

From Photopolymerization of Metal Suspension to Practical and Economical Additive Manufacturing of Haynes 214 Alloy for High Temperature Applications, {IAM2022-93984}
Technical Paper Publication

Hoa Nguyen - Michigan State University
Hawke Suen - Michigan State University
Bibek Poudel - Michigan State University
Zhiyuan Qu - Michigan State University
Mohsan Uddin Ahmad - Michigan State University
Haseung Chung - Michigan State University
Patrick Kwon - Michigan State University
Andre Benard - Michigan State University

A Multi-Energy Source Process for High Deposition Rate and Near-Net-Shape Additive Manufacturing, {IAM2022-94078}
Technical Presentation Only

Chong Wang - Cranfield University
Jialuo Ding - Cranfield University
Wojciech Suder - Cranfield University
Stewart Williams - Cranfield University

A Study of Pre-Heating Stages in Electron Beam Melting Using Numerical Simulations, {IAM2022-96634}
Technical Presentation Only

ERAN LANDAU - Ben Gurion University and NRCN
Eitan Tiferet - AM center at Rotem Industries and NRCN
Yaron Ganor - AM center at Rotem Industries and NRCN
Dor Braun - AM Center at Rotem Industries LTD
Gennady Ziskind - Ben Gurion University

03-12 Metals: Simulation, Modeling, and Training II
10/19/2022
4:00 PM to 6:00 PM - Milano 2

PRESENTATIONS

Open-Source Virtual Powder-Bed Generation for Selective Laser Melting (Slm) Additive Manufacturing, {IAM2022-96732}
Technical Paper Publication
Abdelkrim Bouabbou - Euro-mediteranean university of Fez
Sebastien Vaudreuil - Euro-mediteranean university of Fez

Certification for Personnel in Am: Opportunities and Challenges for a Unified Training Program for Am Designers, {IAM2022-96722}
Technical Presentation Only
Hussein Tarhini - Fraunhofer IAPT

A Framework of Multisource Data Integration and Analytics for Direct Energy Deposition Additive Manufacturing (Ded-Am), {IAM2022-94202}
Technical Presentation Only
Jian Qin - Cranfield University
Jialuo Ding - Cranfield University
Stewart Williams - Cranfield University
Shakirudeen Lasisi - WAAM3D Limited
Toby Lawrance - WAAM3D Limited

THURSDAY, OCTOBER 20

01-02 Polymers: Characterization and Mechanical Properties II
10/20/2022
8:30 AM to 10:00 AM - Milano 2

PRESENTATIONS

Effects of Printing Parameters on Geometrical and Mechanical Properties of 3d-Printed High-Performance Thermoplastics, Toward the Digitalization of Power Transformers., {IAM2022-91989}
Technical Paper Publication
Thiago Assis Dutra - INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering
Catarina Costa - INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering
João R. Matos - INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering
Bruna F. Oliveira - INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering
Luís Miguel Oliveira - INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering
Cristiano Pereira Coutinho - Efacec

Experimental Study of the Tensile Behavior of Structures Obtained by Fdm Printing Process, {IAM2022-94339}
Technical Paper Publication
Salem Ben Hadj Hassine - University of Sousse
Sami Chatti - University of Sousse
Borhen LOUHICHI - University of Sousse

Comparison of Technical and Economic Properties of Additively Manufactured Components Using Masked Stereolithography and Fused Layer Modeling, {IAM2022-94087}
Technical Paper Publication
Stefan Junk - Offenburg University of Applied Sciences
Felix Bär - Offenburg University of Applied Sciences

03-10 Metals: Residual Stress Studies and Process Monitoring

10/20/2022
8:30 AM to 10:00 AM - Bruxelas

PRESENTATIONS

Assessment of Experimental Residual Stresses Measured Into an Additively Manufactured 316l Austenitic Stainless Steel With Finite Element Simulations and Effect of Heat Treatment on Stress Relief, {IAM2022-94170}
Technical Presentation Only

Manuel Sanchez Poncela - ArcelorMittal
David Canelo - Hereon
Juan Manuel Martinez - ArcelorMittal
Rosalía Rementería - ArcelorMittal

Polarized Illumination for Optical Monitoring System in Laser Powder Bed Fusion, {IAM2022-94437}
Technical Paper Publication

Song Zhang - RWTH Aachen DAP
Sebastian Enk - RWTH Aachen DAP
Moritz Kolter - RWTH Aachen DAP
Johannes Henrich Schleifenbaum - RWTH Aachen DAP

A Multi-Modal Data-Driven Decision Fusion Method for Process Monitoring in Metal Powder Bed Fusion Additive Manufacturing, {IAM2022-96740}
Technical Paper Publication

Zhuo Yang - University of Massachusetts Amherst
Jaehyuk Kim - NIST
Yan Lu - NIST
Ho Yeung - NIST
Brandon Lane - NIST
Albert Jones - NIST
Yande Ndiaye - NIST

04-01 Emerging Technologies: Smart AM
10/20/2022
1:30 PM to 3:30 PM - Bruxelas

PRESENTATIONS

Engineering-Informed Machine Learning for Additive Manufacturing Accuracy Control, {IAM2022-100301}
Technical Presentation Only
Qiang Huang - University of Southern California
Yuanxiang Wang - University of Southern California
Cesar Ruiz - University of Oklahoma

Additive Manufacturing Process Monitoring Based on Compressed Sensing and Physics-Constrained Dictionary Learning, {IAM2022-93987}
Technical Paper Publication
Yanglong Lu - Georgia Institute of Technology
Yan Wang - Georgia Institute of Technology

Thermographic Analysis Method of Parts Produced With Wire Arc Additive Manufacturing, {IAM2022-90188}
Technical Presentation Only
André Cabrita - Instituto de Soldadura e Qualidade
Carla Sofia Proença - Instituto de Soldadura e Qualidade
Paulo J. Morais - Instituto de Soldadura e Qualidade
Guiomar Evans - LIP and Faculdade de Ciências da Universidade de Lisboa

Data-Driven Model Predictive Control for Roll to Roll Process Registration Error, {IAM2022-96840}
Technical Paper Publication
Xiaoning Jin - Northeastern University
Anqi He - Northeastern University
Karan Shah - Northeastern University
Xian Du - University of Massachusetts at Amherst

03-01 Metals: Post Processing Topics
10/20/2022
1:30 PM to 3:30 PM - Milano 1

PRESENTATIONS

Metal Additive Manufacturing Produced Components With Significantly Improved Mechanical and Corrosion Resistance Properties Upon Chemical-Mechanical Polishing, {IAM2022-88979}
Technical Presentation Only
Agustin Diaz - REM Surface Engineering

Developments in Hot Isostatic Pressing and High Pressure Heat Treatment for Additive Manufacturing, {IAM2022-93893}
Technical Presentation Only
Anders Magnusson - Quintus Technologies AB
James Shipley - Quintus Technologies AB
Hans Sodervall - Quintus Technologies AB

Effects of Post Processing Techniques on Mechanical Properties in Gmaw Wire Arc Additive Manufacturing of Ti 6al 4v, {IAM2022-93968}
Technical Paper Publication
Itziar Minondo - FUNDACION IDONIAL
Ana Gómez - FUNDACION IDONIAL
Ester Porras - Aciturri Aeronáutica, S.L.U.
Jesús Sesé - Aciturri Additive Manufacturing, S.L.U.
Cristina García - Aciturri Additive Manufacturing, S.L.U.

Effects of Hot-Forging and Post-Deposition Heat Treatment on Hsla Steels Produced by Waam, {IAM2022-95101}
Technical Presentation Only
Igor Oliveira Felice - FCT/UNL
Francisco Werley Cipriano Farias - FCT NOVA
João Pedro Oliveira - FCT NOVA
Telmo Jorge Gomes Dos Santos - FCT NOVA

01-03 Polymers: Systems Engineering and Design
10/20/2022
1:30 PM to 3:30 PM - Milano 2

PRESENTATIONS

Designing Damage Tolerant Architectures in 3d Printed Pla, {IAM2022-93940}
Technical Paper Publication
Deepesh Yadav - Indian Institute Technology of Bombay
Prerna Gupta - Indian Institute of Technology Bombay
Balila Nagamani Jaya - Indian Institute of Technology Bombay

Additive Manufacturing of Star Structured Auxetic Lattice Samples With Overhanging Links, {IAM2022-93965}
Technical Paper Publication
Benedict A. Rogers - The University of Bath
Max Valentine - The University of Bath
Elise C. Pegg - The University of Bath
Alexander J. G. Lunt - The University of Bath
Vimal Dhokia - The University of Bath

Design and Optimization of a Transtibial 3d Printed Prosthetic Socket, {IAM2022-98118}
Technical Presentation Only
Piyush Rai - Indian Institute of Technology Jammu
Venkatessan Janakiraman - Indian Institute of Technology Jammu
Mohit Teacher - Indian Institute of Technology Jammu
Rajkumar Velu - Indian Institute of Technology Jammu
Anand Kumar S - Indian Institute of Technology Jammu
Trevor Binedell - Singapore University of Technology and Design
Karupppasamy Subburaj - Singapore University of Technology and Design

Development of a Recycled Polyethylene Terephthalate Filament and its Reprocessing Cycle., {IAM2022-96725}
Technical Presentation Only
Ana Sofia Sousa - Escola Superior de Aveiro Norte
José Martinho Oliveira - Escola Superior de Aveiro Norte
Paulo Lima - Escola Superior de Aveiro Norte
Ricardo Torcato - Escola Superior de Aveiro Norte

03-03 Metals: Path Development
10/20/2022
1:30 PM to 3:30 PM - Roma 1 & 2

PRESENTATIONS

Development of a New Manufacturing Route by Direct Laser Metal Deposition With Nicrsifeb Alloys to Replace Cobalt in Aeronautical Components, {IAM2022-91705}
Technical Paper Publication

Juan Carlos Pereira Falcon - LORTEK Technological Centre, Basque Research and Technology Alliance BRTA
Fidel Zubiri - LORTEK Technological Centre, Basque Research and Technology Alliance BRTA
David Aguilar - LORTEK Technological Centre, Basque Research and Technology Alliance BRTA
Maria Del Carmen Taboada - LORTEK Technological Centre, Basque Research and Technology Alliance BRTA
Gaylord Guillonneau - Ecole Centrale de Lyon - Laboratoire de Tribologie et Dynamique des Systèmes (LTDS)
Jerome Rocchi - LIEBHERR Aerospace Toulouse SAS

Evaluation of Contour Deposition for Various Corner Angles in Lbpf, {IAM2022-93937}
Technical Paper Publication

Simson Daniel - Indian Institute of Technology Palakkad
Kanmani Subbu Subbian - Indian Institute of Technology Palakkad.

Development of Adaptive Toolpaths for Repair and Cladding of Complex 3d Components by Laser Metal Deposition, {IAM2022-94946}
Technical Paper Publication

Igor Ortiz - Ikergune A.I.E. Inzu Group
Piera Alvarez - Ikergune A.I.E. Inzu Group
Maria Angeles Montealegre - Ikergune A.I.E. Inzu Group
Francisco Cordovilla - Polytechnical University of Madrid
José Luis Ocaña - Polytechnical University of Madrid

Progress on the Development of Hifh Strength Al Alloys for Waam, {IAM2022-95013}
Technical Presentation Only

Maider Arana - Lortek Technological Centre, Basque Research and Technology Alliance (BRTA)
Pedro Alvarez - Lortek Technological Centre, Basque Research and Technology Alliance (BRTA)

03-02 Metals: Design for AM - Industrial Applications
10/20/2022
4:00 PM to 6:00 PM - Roma 1 & 2

PRESENTATIONS

Design Process for High Performance Minimal Surface Heat Exchangers, {IAM2022-88984}
Technical Presentation Only
Andreas Vlahinos - Advanced Engineering Solutions

Industrialization Advancements for the Production of Hot Gas Parts by Additive Manufacturing, {IAM2022-92004}
Technical Presentation Only
Julius Schurb - Siemens Energy
Lisa Kersting - Siemens Energy Global GmbH & Co. KG
Timo Heitmann - Siemens Energy Global GmbH & Co. KG
Hamid Jahangir - Siemens Energy Global GmbH & Co. KG

Design for Additive Manufacturing (Dfam) Education: A Case Study on Fluidic Channels via Metal Additive Manufacturing, {IAM2022-93942}
Technical Presentation Only
Ankit Saxena - Pennsylvania State University
Vimal Dhokia - University of Bath
Ioannis Georgilas - University of Bath
Uriel Martinez Hernandez - University of Bath
Steven Goguelin - Gen3D
Wesley Essink - Gen3D Ltd
Guha Manogharan - Pennsylvania State University

Next Generation Additvely Manufactured Sleeve to Mitigate Thermal Stresses in Oil & Gas Severe Service Applications, {IAM2022-93954}
Technical Presentation Only
Fadila Khelfaoui - Velan
Luc Vernhes - Velan

03-04 Metals: Discontinuities and Defects
10/20/2022
4:00 PM to 6:00 PM - Milano 1

PRESENTATIONS

Porosity Characterization and Mechanical Properties of Ti6al4v Produced by Laser Powder Bed Fusion, {IAM2022-93490}
Technical Paper Publication

Stefania Cacace - Politecnico di Milano
Alessandro Capelli - Politecnico di Milano
Quirico Semeraro - Politecnico di Milano

On the Origin of Solidification Cracks and Its Interplay With In-Process Developed Residual Stress in Cm247 Lc Superalloy via Pbf-Lb Technique, {IAM2022-93879}
Technical Presentation Only

Bikash Kumar - Indian Institute of Technology, Bombay
Shreehard Sahu - Indian Institute of Technology, Bombay
Balila Nagamani Jaya - Indian Institute of Technology, Bombay
Dheepa Srinivasan - Pratt and Whitney Research and Development Center, Bengaluru

The Role of an Individual Lack-of-Fusion Defect in the Fatigue Performance of Additive Manu-Factured Ti-6al-4v Parts, {IAM2022-94120}
Technical Paper Publication

Zongchen Li - Empa-Swiss Federal Laboratories for Materials Science and Technology
Andre Gut - Lucerne University of Applied Sciences and Arts
Iurii Burda - Empa-Swiss Federal Laboratories for Materials Science and Technology
Silvain Michel - Empa-Swiss Federal Laboratories for Materials Science and Technology
Dejan Romancuk - Lucerne University of Applied Sciences and Arts
Christian Affolter - Empa-Swiss Federal Laboratories for Materials Science and Technology

03-09 Metals: In-Process Stress Relief
10/20/2022
4:00 PM to 6:00 PM - Milano 2

PRESENTATIONS

In-Process Mechanical Working of Additive Manufactured René 41, {IAM2022-94060}
Technical Paper Publication
William James - Cranfield University
Supriyo Ganguly - Cranfield University
Goncalo Pardal - Cranfield University

Effects of Laser Shock Peening on the Surface Properties of Additively Manufactured Parts Investigated With X-Ray Diffraction Method, {IAM2022-94126}
Technical Paper Publication
Sanin Zulic - HiLASE Centrum, IoP, CAS
Jan Kaufman - HiLASE Centre, IoP, CAS
Sunil Pathak - HiLASE Centre, IoP, CAS
Elżbieta Gadalińska - Łukasiewicz Research Network – Institute of Aviation, Materials And Structures Center

Hot Forging Interlayer Arc-Direct Energy Processes of the Ni-Based Superalloy 718, {IAM2022-95454}
Technical Presentation Only
Francisco Werley Cipriano Farias - FCT NOVA
Igor Oliveira Felice - FCT NOVA
Telmo Santos - NOVA School of Science and Technology
Joao Pedro Oliveira - NOVA School of Science and Technology

A Wire Arc Directed Energy Deposition (Wa-Ded) System for Evaluating Mechanical Performance of Deposited Material, {IAM2022-98780}
Technical Presentation Only
Sam Costello - University of Bath
Chloe Cunningham - University Of Bath
Sian Evans - University of Bath
Alborz Shokrani - University of Bath
Vimal Dhokia - University of Bath
Jie Wang - University of Bath
Stephen Newman - University of Bath

02-01 Ceramics
10/20/2022
4:00 PM to 6:00 PM - Bruxelas

PRESENTATIONS

Additive Manufacturing of Thermoset Nanocomposites, {IAM2022-96615}
Technical Presentation Only
Kun Fu - University of Delaware

Complex-Shaped Boron Carbide Parts Prepared by Additive Manufacturing Technology, {IAM2022-96702}
Technical Presentation Only
John Meuthen - RHP-Technology GmbH
Mária Vozárová - RHP-Technology GmbH
Erich Neubauer - RHP-Technology GmbH
Michael Kitzmantel - RHP-Technology
L'uboš Bača - Department of Inorganic Materials, Institute of Inorganic Technology and Materials, FCHFT STU
Jozef Feranc - Institute of Plastic, Rubber and Fibers, FCHFT STU

Triply-Periodic Minimal Surface Infill With Tunable Mechanical Properties, {IAM2022-98101}
Technical Presentation Only
Soo-Hwa Kim - University of Bath, UK
Joseph Flynn - University of Bath

Development of Leather-Polymer Composites Adapted for Additive Manufacturing, {IAM2022-96726}
Technical Presentation Only
Sílvio Abrantes - ESAN - Universidade de Aveiro
José Martinho Oliveira - ESAN - Universidade de Aveiro
Paulo Lima - ESAN - Universidade de Aveiro

VENUE & TRAVEL INFORMATION

Conference Venue

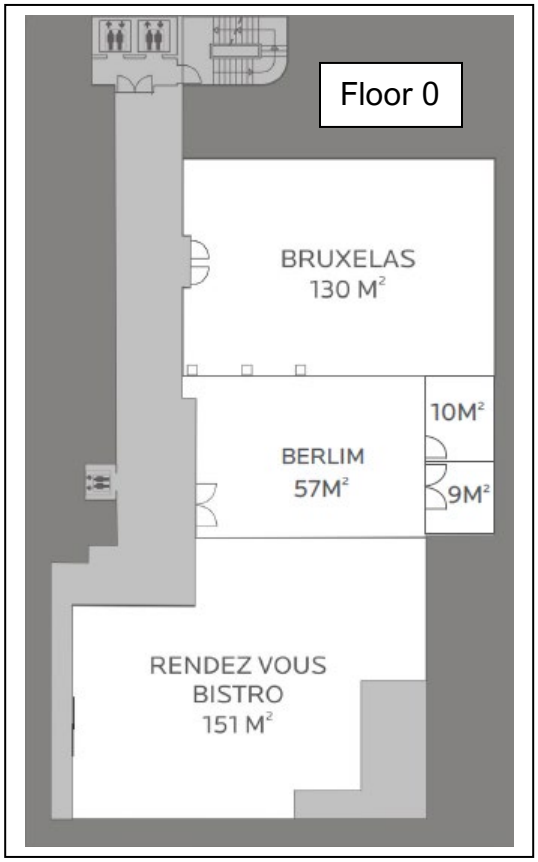
Altis Grand Hotel
Rua Castilho, 11, Lisbon, 1269-072, Portugal

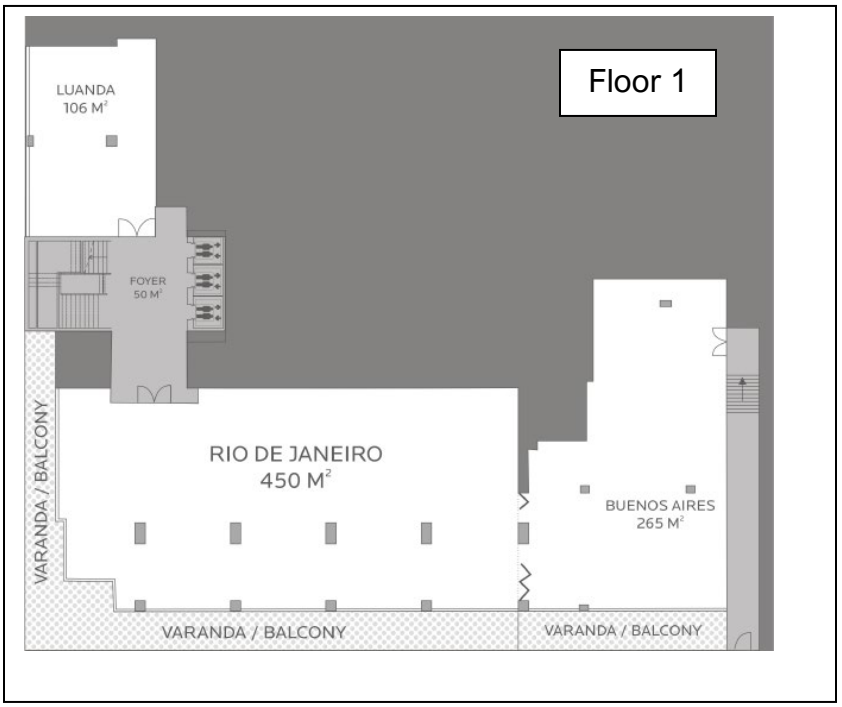
Hotel Accommodations

Altis Prime Hotel
R. Rodrigo da Fonseca 4
1250-191 Lisboa, Portugal
+351 21 045 6000

Local Currency & Payments

- The euro is Portugal's official currency
- 1 euro is divided into 100 cents.
- There are coins of: 1, 2, 5, 10, 20 and 50 cents and 1 and 2 euros.
- The bills can be distinguished by their size and colour and have the following face values: 5, 10, 20, 50, 100, 200 and 500 euros.
- In Portugal, payments can be made in cash, bank transfer, checks, credit cards and debit cards.
- Consider purchasing the Lisboa card for transportation and discounted access to local museums.


Floor 0
BRUXELAS
130 M²
BERLIM
57M²
10M²
9M²
RENDEZ VOUS
BISTRO
151 M²


Floor 1
LUANDA
106 M²
FOYER
50 M²
RIO DE JANEIRO
450 M²
BUENOS AIRES
265 M²
VARANDA / BALCONY
VARANDA / BALCONY
VARANDA / BALCONY


Floor 2
ROMA II
182 M²
MILÃO I
82 M²
MILÃO II
79 M²
FOYER
ROMA I
145 M²
BAR
FOYER
50 M²
GALERIA

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