

5th International Conference on 3D Printing & Additive Manufacturing

| OPENING & KEYNOTE PRESENTATIONS

SESSION I • Chair: Prof. Dr. Binnur Sağbaş

09:00-09:30 **Registration**

09:30-10:00 **Opening Speeches**

KEYNOTE

10:00-10:45 **Roman Perez**

Universitat Internacional de Catalunya (UIC Barcelona),
Spain

Extrusion-Based Biomaterials as Angiogenic Inducers in Tissue
Engineering

KEYNOTE

10:45-11:30 **Mahdi Bodaghi**

Nottingham Trent University, UK

Doing More with Less: 4D Materials & Printing for a Smarter
Future

11:30-11:50 **Coffee Break**

| BIOMATERIALS, BIOPRINTING & BIOMEDICAL APPLICATIONS

SESSION II • Chair: Mohammad Irshidat

11:50-12:10 **Mohammad Irshidat**

Qatar University, Qatar

3D-Printed Concrete with Fast-Setting Cement (FSC) and
Recycled (CDW) Sand: Mix Design, Printability, and
Performance Evaluation

12:10-12:30 **Farnaz Rezaei**

Uppsala University, Sweden

High-Conductivity MXene-Based 3D Microstructures for
Biosensing Applications

12:30-12:50 **Elena Salvaterra**

Europa Uomo Schweiz, USA

Informed Consent for Organ Bioprinting and Transplantation: A
Comparison Between Ethics and Patient Perspective

12:50-14:00 **Lunch**

| INDUSTRY TALKS

INDUSTRY TALK

14:00-14:30 **Muhammed Enes Tahiroğlu**

Founder, METATECHTR

The Evolution of 3D Technologies in Türkiye and the Growth of
the Industry

INDUSTRY TALK

14:30-15:00 **Ayşenur Altunbay**

Project Consultant, UPCORES

Additive Manufacturing and Generative Design

15:00-15:20 **Coffee Break**

| METAL ADDITIVE MANUFACTURING & POST-PROCESSING

SESSION III • Chair: Dr. Azade Yelten Coşkun

15:20-15:40 **Azade Yelten Coşkun**

Istanbul University-Cerrahpaşa, Türkiye

Features of the Ti6Al7Nb Parts Produced via the Laser Powder
Bed Fusion (LPBF) Method Using Different Laser Scanning
Speeds

15:40-16:00 **Merve Gizem Özden**

Erzurum Technical University, Türkiye

Thermal-History Engineering of LPBF-Processed Fe-Based Soft
Magnets through Sequential Laser Exposure

16:00-16:20 **Mustafa Sevimli**

Yıldız Technical University, Türkiye

Optimization of Laser Powder Bed Fusion Process Parameters
for Improving the Wear Resistance of H13 Tool Steel

16:20-16:40 **Alperen Kaya**

Yıldız Technical University, Türkiye

Enhancement of Tribological and Corrosion Performance of SLM
Additively Manufactured Ti6Al4V via Novel HIP Post-Processing

16:40-17:00 **Mehmet Erdi Korkmaz**

Yıldız Technical University, Türkiye

Analysis of Surface Roughness in Wire EDM Machining of
Additive Manufacturing 316L Component

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KEYNOTE PRESENTATIONS & INDUSTRY TALK

SESSION I • Chair: Aslı Günay Bulutsuz

KEYNOTE

09:30-10:10 **Anton Fikai**

National University of Science and Technology Politehnica
Bucharest, Romania

Healing by Design: How STEM Shapes Personalized Medicine

KEYNOTE

10:10-10:50 **Boris Jalušić**

University North, Croatia

On the Validation of the Numerical Modeling of
Thermo-Mechanical Manufacturing Processes

INDUSTRY TALK

10:50-11:15 **Yunus Eker**

YTÜ-ETP

Industrial Design and Prototyping Center: An Interphase
Between Industry and Academia

11:15-11:30 **Coffee Break**

POLYMER ADDITIVE MANUFACTURING

SESSION II • Chair: Omer Egercioglu

INVITED

11:30-11:50 **Manoj Kumar Patel**

CSIR-Central Scientific Instruments Organisation, India

Convenience to Customized Nutrition: The Role of 3D Food
Printing Technologies

11:50-12:10 **Omer Eyericioglu**

Gaziantep University, Türkiye

Influence of Raster Angle, Layer Thickness, and Abrasive Flow
Machining on Surface Integrity of Carbon Fiber-Reinforced PLA
Components

12:10-12:30 **Muslum Ozalp**

Gaziantep University, Türkiye

Influence of Post-Curing Duration on the Mechanical
Performance of DLP-Printed Photopolymer Used in Rapid
Tooling

12:30-12:50 **Musa Yilmaz**

Gaziantep University, Türkiye

ASTM D790 Flexural Evaluation of FFF-Printed Polycarbonate
Parts with Different Infill Deposition Angles

12:50-14:00 **Lunch**

ROBOTICS PANEL & POSTER SESSION

PANEL

14:00-15:00 **The Transforming Role of Robotic
Systems in Additive Manufacturing**

Moderator: Savaş Dilbal

15:00-15:20 **Poster Session**

15:20-15:30 **Coffee Break**

DESIGN OPTIMIZATION & STRUCTURAL APPLICATIONS

SESSION III • Chair: Saygın Sucuoğlu

15:30-15:50 **Ahmet Yağız Turpçu**

Eskişehir Technical University, Türkiye

Comparative Investigation of Additive and Subtractive
Manufacturing Constraints in Topology Optimization of
Aerospace Components

15:50-16:10 **Saygın Sucuoğlu**

Aydın Adnan Menderes University, Türkiye

Stress-Informed Functionally Graded TPMS Infill Design for a
Monolithic Spar-Less UAV Wing

16:30-16:50 **Aysenur Aydın**

Yıldız Technical University, Türkiye

Redesign of Collapsible Steering Columns Used in Automotive
Applications Based on Lattice Structures: Evaluation of Energy
Absorption Performance Using Finite Element Analysis and
Experimental Methods

16:40-17:00 **Hüseyin Can Aksa**

Karadeniz Technical University, Türkiye

Patient-Specific Corrective Implant Design for Post-Cranioplasty
Aesthetic Contour Deformity Using a Hybrid Hard-Soft Tissue
Phantom Model

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KEYNOTE PRESENTATIONS & INDUSTRY TALK

SESSION I • Chair: Boris Jalusic

KEYNOTE

09:30-10:10 **Cem Bülent Üstündağ**

Yıldız Technical University, Türkiye

Integrating Additive Manufacturing and Engineered Biomaterials for Personalized Microneedle-Mediated Drug Delivery

KEYNOTE

10:10-10:50 **Özgür Uyar**

GSI SLV-TR, Türkiye

Fundamentals of Sheet Lamination Additive Manufacturing

INDUSTRY TALK

10:50-11:15 **Cevdet Yalçiner & Ahmet Sever**

Marketing & Brand Executive / Additive Manufacturing Specialist, Ermaksan

The Manufacturing Technology of the Future: Global Developments in Additive Manufacturing, Türkiye, and Ermaksan Solutions

11:15-11:30 **Coffee Break**

LATTICE & TPMS STRUCTURES

SESSION II • Chair: Hamdi Kuleyin

11:30-11:50 **Hamdi Kuleyin**

Recep Tayyip Erdoğan University, Türkiye

Experimental Investigation of Strain- and Time-Dependent Dimensional Recovery of DLP-Printed Schwarz Primitive TPMS Structures Fabricated from a Tough Photopolymer Resin

11:50-12:10 **Merve Koral**

Yıldız Technical University, Türkiye

Design and Optimization of Additively Manufactured Lattice Structures for Energy Absorption in Automotive Applications

12:10-12:30 **Sezin Selamoğlu**

Atılım University, Türkiye

Experimental Evaluation of TPMS-Filled Crash Boxes for Enhanced Energy Absorption in Automotive Applications

INDUSTRY TALK

12:30-12:50 **Mustafa Sevimli**

Sales Manager, digiMODE

From Powder to Final Part: End-to-End Solutions in Additive Manufacturing

12:50-14:00 **Lunch**

ADVANCED MATERIALS & PERFORMANCE

SESSION III • Chair: Enes Kalyoncu

14:00-14:20 **Yusuf Selim Bulut**

Yıldız Technical University, Türkiye

Compressive Mechanical Performance of Methacrylate-Functionalized TiO₂ Nanotube-Reinforced Polymer Composite Fabricated by Masked Stereolithography

14:20-14:40 **Yavuz Selim Gözüm**

Yıldız Technical University, Türkiye

Effect of Water Uptake on the Properties of 3D Parts

14:40-15:00 **Dilek Aygün**

Yıldız Technical University, Türkiye

Design and Characterization of Collagen-Containing IPN Hydrogel Bioinks for 3D-Printed Neural Tissue Scaffolds

15:00-15:20 **Enes Kalyoncu**

Istanbul Gelisim University, Türkiye

Machine Learning for Tensile Strength Prediction of FFF-Printed PLA: A Group-Wise Validation Approach

15:20-15:30 **Coffee Break**

EMERGING & INTERDISCIPLINARY APPLICATIONS

SESSION IV • Chair: Doruk Gürkan

15:30-15:50 **Hanife Bukre Koç Güneşsu**

Marmara University, Türkiye

Development and FDM Processing of PLA Composite Filaments Reinforced with Al, Al₂O₃, Ti, Nano-BN, and Spent Turkish Coffee Grounds for Functional 3D-Printed Products

15:50-16:10 **Doruk Gürkan**

İstanbul Gedik University, Türkiye

Tailoring Structure and Morphological Response of WAAM Superalloys via Mg-Modified ZnO Coatings Deposited by Advanced and Conventional EPD Routes

16:10-16:30 **Ismail Kaya**

İstanbul Technical University, Türkiye

A Parametric Study on the Design and Geometric Modification of 3D-Printed Radial Lip Seals

16:30-16:50 **Mohammad Hossein Sadeghi**

Tarbiat Modares University, Iran

Design and Fabrication of Functionally Graded Lattice Bone Scaffolds with Transversely Isotropic Behavior and Directional Reinforcement

16:50-17:10 **Yimin Huang**

National Heart, Lung, and Blood Institute, National Institutes of Health, USA

4D Bio-Printing Application in Physiologically Adaptable Cardiac Patch Fabrication