

WAM 2024



Istanbul
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University

2. International Hybrid Conference and Exhibition **ADVANCES IN WELDING AND METAL ADDITIVE MANUFACTURING TECHNOLOGIES**



**21-22
November 2024**
Istanbul Marriott Hotel
Asia

DEADLINES
Abstract Submission
1st of August 2024
Submission of Manuscripts
1st of November 2024

Conference Chair
Prof. Dr. Mustafa KOÇAK
Vice Chair
Prof. Dr. Savaş DİLİBAL

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Keynote Speakers



Prof. Dr. Stewart Williams
Cranfield University
UK

*Wire + Arc Additive
Manufacture (WAAM)
Qualification – The Last
Remaining Challenge for
Widespread Industrial
Applications?*



Prof. Dr. Ju Li
MIT
USA

*Materials Design and
Additive Manufacturing of
Metal Matrix Composites*

Invited Speakers



Assoc. Prof. Dr. Akbar Heidarzadeh
Azarbaijan Shahid Madani
University
Azerbaijan

*Insights into Grain
Structure Formation
During Friction Stir
Welding Processing of
Metals and Alloys*



Alejandro Lázaro Martínez
MELTIO
Spain

*Improving Printability of
Large Directed Energy
Deposition Components*



Dr. Ali İhsan Koruk
BOSAL Energy
Belgium

*Utilization of Additive
Manufacturing Methods in
the Energy and Emission
Sectors*



Aydın Yağmur
Additive Minds /EOS
Germany

*Impact and Potential of
In-Situ Monitoring on the
Development of Metal
Laser Powder Bed Fusion
(L-PBF) Technologies*

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Assoc. Prof. Dr. Binnur Sagbas
Yıldız Technical University
Türkiye

*Additive Manufacturing
and Biomedical
Applications*



Assoc. Prof. Dr. Can Ayas
Delft University of Technology
The Netherlands

*Design for Material
Properties of Additively
Manufactured Metals
Using Topology
Optimization*



Assoc. Prof. Dr. Danijela Rostohar
Coventry University
UK

*Tailoring Laser Properties
for Efficient Laser-Based
Manufacturing*



Deniz Demirci
Secretariat of Defence Industries
Advanced Materials and Energy
Programme Manager
Türkiye

*Defense Industry
Additive Manufacturing
Roadmap*



Assoc. Prof. Dr. Dhanesh G Mohan
University of Sunderland
UK

*Impact of Volumetric
Energy Density on
Mechanical Properties of
Magnesium Alloy via
Selective Laser Melting*



Prof. Dr. Emel Taban
Kocaeli University
Türkiye

*Purge Gas for Welding of
Stainless Steel Pipes: Must
or Luxury*



Dr. Evren Yasa
University of Sheffield
UK

*Breaking the Boundaries
of Additive
Manufacturing: Additive
Friction Stir Deposition*



Prof. Dr. Güney Güven Yapıcı
Özyeğin University
Türkiye

*Severe Plastic
Deformation for Post-
Processing of
Additive-Manufactured
Alloys*



Prof. Dr. Gürel Çam
İskenderun Technical University
Türkiye

*Recent Advances in the
Manufacturing of
Magnesium Components
Using Directed Energy
Deposition Techniques*



Dr. Huang Sheng
MIT
USA

*A Multi-Laser Approach
for In-Situ Thermo -
Mechanical Treatment of
Metals and Alloys*



Prof. Dr. Iris De Graeve
Vrije Universiteit Brussel
Belgium

*Corrosion Mechanisms of
Additive Manufactured
Metal Alloys Produced by
Various AM Methods*



Dr. Jonas Zielinski
Moduleworks GmbH
Germany

*The Significant Role of
Software Development for
the Additive
Manufacturing
Technology*

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Prof. Dr. Mitsuru Ohata
Osaka University
Japan

*Local Approach for
Fracture Assessment of
Components with
Heterogeneity of
Mechanical Properties*



Prof. Dr. Mohammad Elahinia
University of Toledo
USA

*Design and Applications
on SLM-Based Additive
Manufacturing of Shape
Memory Alloys*



Murat Yücel
Roketsan
Türkiye

*Innovative Welding
Technologies for
Enhancing Liquid
Propulsion Systems*



Prof. Dr. Oğuzhan Yılmaz
Gazi University
Türkiye

*A New Method to Control
Thermal Behavior of
WAAM: Active Heating
Via Infrared Technology*



Ozan Can Ozaner
Katholieke Universiteit Leuven
Belgium

*Effect of Cooling Cycles
on Microstructure
Formation in Wire
Arc Additive
Manufacturing*



Pedro Catarino
EWF
Portugal

*Additive Manufacturing
Designers: A Comparison
Between IAMQS
Professional Profiles and
Relevant ISO Standards*



Prof. Dr. Peter Mayr
Technical University of Munich
Germany

*Towards a Digital Twin for
Laser Metal Deposition*



Prof. Dr. Pingsha Dong
University of Michigan
USA

*Fitness-for-Purpose
Based Acceptance Criteria
for Distributed
Discontinuities in Metallic
AM Components*



Rafael Nunes
Belgian Welding Institute
Belgium

*Challenges in Welding of
Additively Manufactured
(WAAM and PBF LB)
Aluminium Alloy
Components*



Dr. Remzi Ecmel Ece
Turkish Aerospace Industries
Türkiye

*Recent Developments on
Aerospace Applications of
DED Technologies*



Sebastian Recke
GEFERTEC GmbH
Germany

*Titanium Titans – The
Remarkable World of
Aircraft Manufacturing
and the WAAM Evolution*



Prof. Dr. Sergio Amancio
Graz University of Technology
Austria
IIW 2024 Halil Kaya Gedik Award
Winner

*Solid-State Joining of
Additive Manufactured
Metals for Lightweight
Applications*

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Prof. Dr. Sergio Cicero González
University of Cantabria
Spain

*Fracture Toughness
Characterization of Welds
by Using Mini-CT
Specimens:
FRACTESUS Project
Findings*



Sertaç Altınok
Turkish Aerospace Industries
Türkiye

*Development of
Fast-Paced Modular
Microsatellite Production
by Additive
Manufacturing*



Prof. Dr. Shahram Sheikhi
Hamburg Technology University
Germany

*Innovative Control of
Robots for Manual
Welding
Application*



Assoc. Prof. Dr. Simge Gençalp
Manisa Celal Bayar University
Türkiye

*Enhancing Material
Performance: Evaluating
Shot Peening and Laser
Peening Processes for
Industrial Applications*



Dr. Simon Jahn
IFW Jena
Germany

*Potentials of Handheld
Laser Beam Welding*



Prof. Dr. Sriram Venkatesh
Osmania University
India

*Digitized Quality
Inspection in Welding
Production Role and
Significance of the
Software for the
Development of Additive
Manufacturing Technology*



Dr. Tomoyuki Ueyama
OTC Daihen
Japan

*Factors Affecting Arc
Stability in Tandem Pulsed
GMA Welding Process*



Assoc. Prof. Dr. Ulaş Yaman
Middle East Technical University
Türkiye

*Non-Destructive
Evaluation Approaches
for Wire Arc Additive
Manufacturing*



Yin Jin Yanin
TWI
UK

*Mechanical Properties of Wire
Plus Arc Additive Manufac-
tured Steel, Stainless Steel
and Nickel-Based Superalloys
and Potential Challenges in
Defect Assessment*



Prof. Dr. Zuheir Barsoum
KTH Royal Institute of Technology
Sweeden

*Digitized Quality Inspection in
Welding Production Role and
Significance of the Software for
the Development of
Additive Manufacturing
Technology*

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Oral and Poster Presentations

***Investigation on the Similar and Dissimilar Weld Joints Between WAAM Parts and Rolled
Stainless Steel Plate using SS308 Wire***

***Abdullah Baran Aytekin, Nur İsmet, Hüseyin Yavaş, Rabia Yağmur Aksoy, Serhat Yakar, Mustafa
Koçak
Istanbul Gedik University - Türkiye
Gedik Welding - Türkiye***

***Microstructure, Mechanical Properties, and High-Temperature Oxidation Performance of Wire
Arc Additively Manufactured Inconel 625 Alloy***

***Abolfazl Safarzadeh, Mahmood Sharifitabar, Mahdi Shafiee Afarani, Samira Khorshahian,
Neelesh Kumar Jain, Pravin Kumar
University of Sistan and Baluchestan - Iran
Partogaran Sanat Khayyam Welding Research Company - Iran
Indian Institute of Technology - India***

***Advanced in Situ Deformation Monitoring in Wire Arc Additive Manufacturing Via Digital Image
Correlation***

***Amir Kordijazi, Asheesh Lanba, Savas Dilibal, Doruk Gurkan
University of Southern Maine - USA
Istanbul Gedik University - Türkiye***

***The Influence of Heat Input and Cooling Time on the Residual Stress During Wire Arc Additive
Manufacturing***

***Atilla Savaş
İstanbul Piri Reis University - Türkiye***

***Metallic Additive Manufacturing: Opportunities and Challenges for Passive Microwave
Components in Telecommunications and Defense***

***Bülent Alicioğlu
Asartech - Türkiye***

Sandwich Welding Design: Improving Ballistic Resistance of High Hardness Armor Steels

***Ceren Çelik, Uğur Gürol
Istanbul Gedik University - Türkiye
Foseco - Türkiye***

Potential of Process Gases for the WAAM to Increase Quality and Productivity

***Çerkez Kaya
Air Liquide Deutschland GmbH - Germany***

High-Speed Laser-Directed Energy Deposition of Ti/Al Multi-Material Component

***Dongsheng Wu, Hisaya Komen, Manabu Tanaka, Junhao Sun, Zhuguo Li
Osaka University - Japan
Shanghai Jiao Tong University - China***

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Numerical and Experimental Research on Aisi 310 Laser Welds: A Meso Scale Analysis
Edison Bonifaz, Jianzhi Li
University Of Texas Rio Grande Valley - USA

Engineering Assessment Procedure of the Local Thin Areas (LTA) in Welded Pipelines
Fikri Başar Yalçiner, Mustafa Kocak
NMDC Group - Abu Dhabi
Istanbul Gedik University - Türkiye

*Defect Assessment for Welded Structures Using BS 7910 /FITNET and API 579 Procedures:
Practical Examples*
Fikri Başar Yalçiner, Mustafa Koçak
NMDC Group - Abu Dhabi
Istanbul Gedik University - Türkiye

*Microstructural and Mechanical Characterizations of in 718 Nickel-Based Superalloy Fabricated
Via Laser-Based Additive Manufacturing*
Hassan Ghorbani
University Of Tehran - Iran

*Investigation on the Similar and Dissimilar Weld Joints Between WAAM Parts and Rolled Steel
Plate using SG3 Solid Wire*
Hüseyin Yavaş, Nur İsmet, Rabia Yağmur Aksoy, Abdullah Baran Aytekin, Serhat Yakar, Mustafa
Koçak
Istanbul Gedik University - Türkiye
Gedik Welding - Türkiye

*Enhancing Texture in High Entropy Alloys with Nb: In-Situ Synthesis and Microstructural Insights
Via Laser Powder Bed Fusion*
Isaque Alan de Brito Moura, G. G. Ribamar, J. Shen, W. Zhang, T. S. Nunes, F. Zhang, J. P. Oliveira
Universidade NOVA de Lisboa - Portugal
Engineering and Technology Institute Groningen - The Netherlands
Military Institute of Engineering - Brazil
National Institute of Standards and Technology - USA

Welding and Characterization of P355GH Steel Used in Pressure Vessels
İsmail Oğuzhan Ayhan, Hakan Ateş
Gazi University - Türkiye

*WAAM of Multi-Material and Functionally Graded Structures and in-Situ Alloy Development
Using Multi-Wire Mixing*
Jialuo Ding
Waam3D - UK

Investigating Topology Optimization and Additive Manufacturing Processes of Engine Bracket
Kazım Özek
Yıldız Technical University - Türkiye

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Investigating Slag Accumulation in Wire Arc Additive Manufacturing of High Strength Low Alloy Steel

*Malan Jayawickrama, Mattias Igestrand, Nicolas Coniglio, Paul Kah
University West - Sweden
Arts Et Métiers Institute Of Technology - France*

Determination of Solid Particle Erosion Wear Behaviour of Aircraft Turbine Blades Specific to Additive Manufacturing Orientation Effects

*Mehmet Esat Aydın, Musa Demirci, Mehmet Bağcı
Konya Technical University - Türkiye
KTO Karatay University - Türkiye*

Thermal Modeling of Tungsten Inert Gas Wire Arc Additive Manufacturing of Ti-6Al-4V Alloy

*Mustafa Çağrı Özkader, Öncü Akyıldız, Cengiz Baykasoglu
Hitit University - Türkiye*

Investigation on the Similar and Dissimilar Weld Joints Between WAAM Parts and Rolled Steel Plate using Elcor M70 Metal Cored Wire

*Nur İsmet, Rabia Yağmur Aksoy, Hüseyin Yavaş, Abdullah Baran Aytekin, Serhat Yakar, Mustafa Koçak
Istanbul Gedik University - Türkiye
Gedik Welding - Türkiye*

Welding and Characterisation of Armour Steels

*Ozan Çoban, Mustafa Koçak
Istanbul Gedik University - Türkiye*

Investigation on the Similar and Dissimilar Weld Joints Between WAAM Parts and Armour Steel Plate using Elcor ER110 Metal Cored Wire

*Ozan Çoban, Uğur Gürol, Serhat Yakar, Mustafa Koçak
Istanbul Gedik University - Türkiye*

Investigation on the Similar and Dissimilar Weld Joints Between WAAM Parts and Rolled High Strength Steel Plate using Elcor ER110 Metal Cored Wire

*Rabia Yağmur Aksoy, Ozan Çoban, Nur İsmet, Hüseyin Yavaş, Abdullah Baran Aytekin, Serhat Yakar, Mustafa Koçak
Istanbul Gedik University - Türkiye
Gedik Welding - Türkiye*

Effect of Filler Metals on Strength and Toughness of High Hardness Armor Steel

*Recep Murat Kurt, Uğur Gürol, Mustafa Tümer, Mustafa Koçak
Foseco - Türkiye
Kocaeli University - Türkiye
Istanbul Gedik University - Türkiye*

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A Method for Detecting the Bead Geometry of Thin-Wall Structural Aviation Components in Wire Arc Additive Manufacturing (WAAM)
Rostislav Palivoda
Transport and Telecommunication Institute - Latvia

Overview of Laser Shock Peening Processing for Improvements of Metal Additive Manufactured Part at Hilase Centre
Sanin Zulić
Hilase Center - Czechia

Development of a 4-Axis CNC Rotary Friction Welding Machine
Sinan Dizge
Dizge Mekatronik-Türkiye

Understanding the Thermally-Induced Martensitic Transformation in Nitinol Manufactured Via Electron Beam Powder Bed Fusion
Tymur Sabirov, Savaş Dilibal, Asheesh Lanba, Gözde Peduk
University of Southern Maine - USA
Istanbul Gedik University - Türkiye

Application of Resistance Spot Welding in Cold-Formed Steel Structures
Viorel Ungureanu, Ioan Both, Iosif Hulka, Alin Popescu, Silviu Saraolu, Antonio-Andrei Cristian
Politehnica University Timisoara, Anotech Steelworks Ltd. - Romania

Crack Growth Resistance Research on Selective Laser Melting Manufactured Ti-6Al-4V Components: Effects of Post Heat Treatment and Build Orientation
Yun Hu, Mingyu Ling, Kamran Nikbin, Jiangjing Xi
Nanchang University - China
Imperial College London - UK
Coventry University - UK

Mechanical and Microstructural Homogeneity of Printed ER70 S-1 Cylindrical Components Using CMT-Powered WAAM
Yusuf O. Busari, Ajibike Joan Farounbi, Sarah Nadiyah Mohd Ghazali, Yupiter HP Manurung, Y.L. Shuaib-Babata, Kabir S. Ajao, Muhd Faiz Mat, Ibrahim Hassan Kobe, Martin Leitner
Universiti Teknologi MARA (UiTM) Shah Alam - Malaysia
University of Ilorin - Nigeria
Alabama Agricultural and Mechanical Engineering University - USA
Universiti Tun Hussein Onn Malaysia - Malaysia
Graz University of Technology - Austria

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TOPICS

- *Advanced arc welding technologies including twin-arc and tandem processes*
- *Laser beam and hybrid welding technologies & applications*
- *Wire-feed or powder electron beam welding*
- *Flux cored wire and seamless flux cored wire technologies and their use*
- *All metal alloys welding, testing and analysis of their welds*
- *Industrial applications, inspections and tests*
- *Surface modification of additive manufacturing parts*
- *High strength and armoured steel welds, their properties (incl. ballistic properties)*
- *Underwater and wet welding technologies and their consumables*
- *Design and simulation aspects of the metal additive manufacturing (MAM) materials*
- *Testing of MAM materials, distortion prevention and residual stresses of MAM parts*
- *Fatigue and fracture toughness aspects of MAM and bi-metallic WAAM parts*
- *Programming and software developments in robotic MAM & WAAM applications*
- *Predictive theoretical and computational approaches for additive manufacturing*
- *Testing, NDT methods and defect assessment of MAM & WAAM parts*
- *Developments on Education-Training-Certification of welding and MAM & WAAM personnel*

CONFERENCE PROCEEDINGS AND PUBLICATIONS

- *All presented papers will be published in a WAM 2024 Proceedings in digital form.*
- *Selected papers will be published as a “WAM 2024 Special Issue” of the Journal of the IIW “Welding in the World” after peer review process.*
- *Manuscripts of max. 15 pages (A4) will be requested before 01 Nov. 2024.*

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