



22nd

**International Metallurgy
and Materials Congress**

22. Uluslararası Metalurji ve
Malzeme Kongresi

CONGRESS PROGRAMME KONGRE PROGRAMI

19-21

Eylül/September

2024, ISTANBUL

Istanbul Expo Center
İstanbul Fuar Merkezi

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TMMOB Metalurji ve Malzeme Mühendisleri Odası Eğitim Merkezi
UCTEA Chamber of Metallurgical and Materials Engineers' Training Center





**UCTEA Chamber of Metallurgical
and Materials Engineers' Training Center**

TMMOB Metalurji ve Malzeme
Mühendisleri Odası Eğitim Merkezi
Kültür Mah. Çaldıran Sok. No:14/13
Çankaya/Ankara

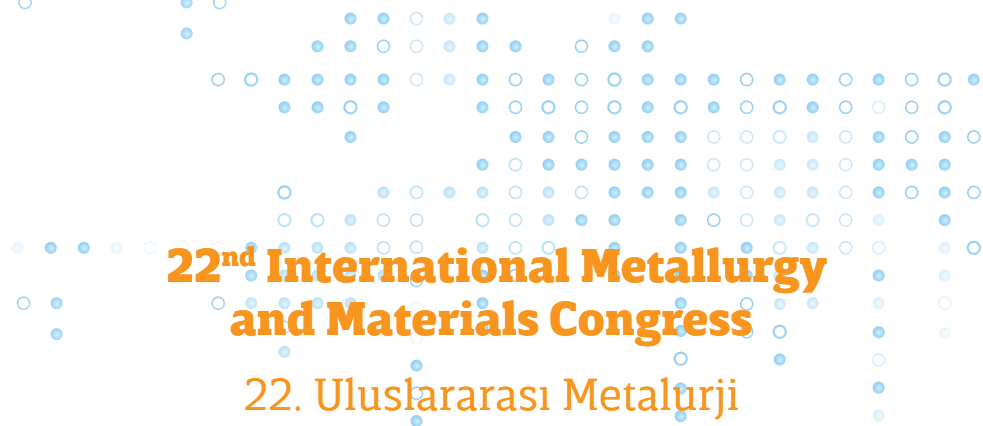


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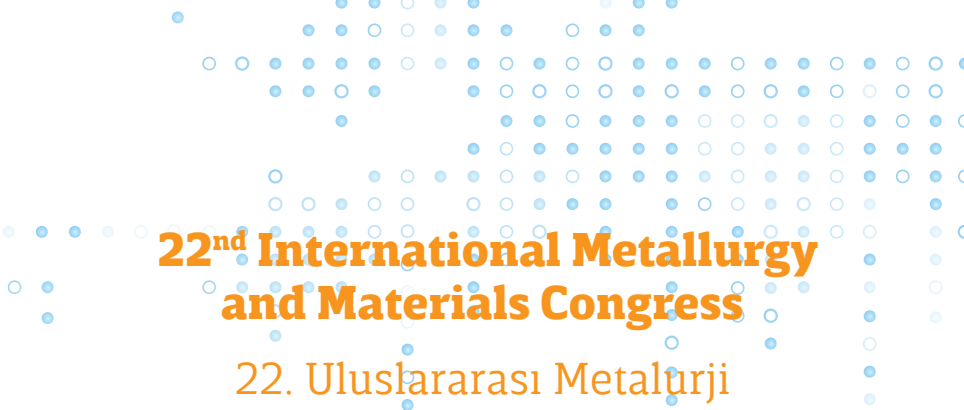
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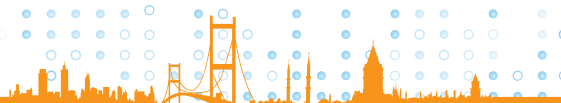
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CERAMICS, GLASS, REFRACTORY MATERIALS SYMPOSIUM I

SERAMİK, CAM, REFRAKTER MALZEMELERİ SEMPOZYUMU

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SURFACE TREATMENT AND COATING SYMPOSIUM I

YÜZEY İŞLEMLER VE KAPLAMA SEMPOZYUMU

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KEYNOTE SPEAKERS

AÇILIŞ KONUŞMACILARI



Keynote Speakers

Açılış Konuşmacısı



**PROF. DR.
ALTAN ÇAKIR**

Istanbul Technical
University

Türkiye

Prof. Dr. Altan Çakır conducted significant research problems involving big data analytics and artificial intelligence-based data science studies at CERN. Following his doctoral studies, he conducted postdoctoral research at DESY in Hamburg, Germany, and at CERN. As a postdoctoral researcher, Prof. Çakır participated in research at CERN and DESY for more than five years. Since 2016, he has been a faculty member at ITU. He currently leads the ITU-CMS research group responsible for research conducted at CERN. Additionally, in 2017, Prof. Çakır was invited as a visiting faculty member at the Fermi National Accelerator Laboratory (Fermilab) in Illinois, USA, where he continued his focus on large-scale data analytics and machine/deep learning techniques.

Prof. Altan Çakır teaches a variety of courses, primarily on big data and its applications, within the Big Data and Business Analytics program of the Industrial Engineering Department at Istanbul Technical University. He is also one of the faculty members of Big Data conferences and teaches in master's programs jointly created by Cambridge University, Madrid Polytechnic, Paris Technical, and Sorbonne Universities. Since 2019, he has been a Board Member of the ITU Artificial Intelligence and Data Science Research and Application Center, and since early 2021, he has served as Co-Chair of the Turkey Artificial Intelligence Platform (www.ai.org.tr) and a Board Member of the Turkish Informatics Foundation as of 2023. He is also the co-founder and Chairman of the Board of Parton Big Data Analytics and Consultancy Inc., operating in ITU Technopark, and co-founder and CIO of Adin.Ai, an AI-based digital marketing and advertising optimization startup established in the United States in 2022. The Adin.Ai initiative, co-founded by Prof. Çakır, was recognized among the top 100 promising startups by Fast Company Turkey in 2023 and was recently listed among the most innovative companies.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Humanity vs. Artificial Intelligence

İnsanlık ve Yapay Zeka





Keynote Speakers

Açılış Konuşmacısı



**ASSOC. PROF.
DİCLE YURDAĞUL**

AU INOVA Research
Center

Türkiye

Assoc. Prof. Dicle Yurdağul is the director of AU INOVA Research Center and INOVA NeuroLab, founder and managing partner of WE.Q. Consulting, consultant for the United Nations Development Program (UNDP), and faculty member of Altınbaş University Faculty of Business Administration. She conducted her doctoral studies in Marketing at Izmir University of Economics and the University of Texas in 2013. She then continued her Post-Doc studies at Koç University for two years. She began her academic career in 2015 as a faculty member. Throughout her academic career, she has taught courses and participated in research teams at various universities including Izmir University of Economics, Ecole de Management de Normandie, University of Texas, University of Rhode Island, Koç University, and Bilgi University. She has numerous articles and publications in the fields of Marketing, Sustainability, and Behavioral Sciences. Since 2014, she has been involved in consultancy and project management roles in sustainability and inclusive business model projects conducted under UNDP IICPSD (Istanbul International Center for Private Sector in Development). She has served as a Systems Lab consultant in the "SDG Impact Accelerator," Turkey's first and only impact accelerator. Within WE.Q. Consulting, of which she is a founding and managing partner, she conducts research and projects in the "TECH4GOOD" and "Future of Work" fields with technology companies including Microsoft, Google, and Facebook, as well as relevant NGOs, and provides training. She serves as a Board Member at the Turkey Informatics Foundation.

SYMPOSIUM TOPIC | SEMPOZYUM KONUSU

Humanity vs. Artificial Intelligence

İnsanlık ve Yapay Zeka



Keynote Speakers

Açılış Konuşmacısı



**PROF.
KRISHNA RAJAN**

University of Buffalo
USA

Prof. Krishna Rajan is the SUNY Distinguished Professor and Erich Bloch Chair of the Department of Materials Design and Innovation (MDI) at the University at Buffalo (UB); with a joint appointment as Chief Scientist in the Energy Processes and Materials Division at Pacific Northwest National Laboratory. He has pioneered the field of Materials Informatics and data driven discovery in materials science and engineering and its impact on characterization, processing, and modeling of materials. A UB faculty member since 2015, he was recruited to establish MDI as the first materials science department built on the foundations of integrating materials science with information science. Dr. Rajan received his bachelor's degree from the University of Toronto in Metallurgy & Materials Science, and a doctorate from MIT in Materials Science minoring in science and technology policy followed by a postdoctoral appointment at Cambridge University. He was a staff scientist at the National Research Council of Canada and held faculty positions at Rensselaer Polytechnic Institute and Iowa State University before coming to UB. He has received numerous recognitions including the Alexander von Humboldt Award from Germany, the CSIRO- Australia Distinguished Visiting Scientist Award, the CNRS Visiting Professorship from France and the Presidential Lecture Award from the National Institute of Materials Science, Japan.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Humanity vs. Artificial Intelligence

İnsanlık ve Yapay Zeka



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INVITED SPEAKERS

DAVETLİ KONUŞMACILAR



Invited Speaker

Davetli Konuşmacı



**DR.
CAN AKYIL**

Macdermic Enthone
Türkiye

Dr. Can Akyıl currently works as Global Business Director of Mac Dermid Enthone and manages Light Metals Division in Mac Dermid Enthone Group, where he has been working for the last 13 years in various departments such as R&D, Production and Sales and Managing the Aluminum Business in Turkey. Before joining Mac Dermid Enthone 12 years ago he was part of the R&D team at Welding Alloys and oversaw the TR department for 3 years. Can Akyıl completed his bachelor's degree in Istanbul Technical University in Metallurgy and Materials Engineering and continued his master's thesis in the same department, where he worked on the electrochemistry and corrosion behavior of aluminum alloys. He has finished his PhD. in the same department at the beginning of 2019 on electrochemical behavior of tin alloys.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Surface Treatment and Coating Symposium

Yüzey İşlemler ve Kaplama Sempozyumu





Invited Speaker

Davetli Konuşmacı



**PROF. DR.
JONES ALAMI**

Mohammed VI
Polytechnic University
Morocco

Jones Alami, is Professor of plasma and surface technology, the holder of the sustainable energy chair, ENSUS, and the head of the Materials Science, Energy and Nanoengineering (MSN) Department at Mohammed VI Polytechnic University (UM6P) in Morocco, since December 2016. He is the co-founder and CEO of New Generation Battery Materials (NGB Materials), a company dedicated to the piloting and the production of LFP cathode materials since December 2023. Jones has a Doctorate in plasma physics (2003) and a PhD in thin film physics (2005) from the University of Linköping in Sweden. After post-doctoral studies at Aachen University in Germany, he joined industry as a Research Manager and Innovations Manager at large coating and PVD systems manufacturers. In 2011 he founded and managed a coatings R&D company, and simultaneously occupied the position of Adjunct Professor for three years at the prestigious Shanghai Institute of Ceramics, Chinese Academy of Science. Dr. Alami has more than 150 peer-reviewed publications with over 6000 citations and an H-index of 34 and is the author/co-author of over 30 patents and patent applications.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Energy Materials Symposium

Enerji Malzemeleri Sempozyumu





**DR.
MATTIA BIESUZ**

University of Trento
Italy

Dr. Mattia Biesuz is an Assistant Professor of Materials Science and Technology at the University of Trento (Italy). He contributed to the research in the field of non-conventional sintering of ceramics, including flash sintering, cold sintering, and ultrafast high-temperature sintering. For his research in the field of firing, he was awarded the "Robert L. Coble Award for Young Scholars" (American Ceramic Society, US), "The MRS Post-doctoral Award" (Materials Research Society, US), and the "Pfeil Award" (IOM3 Institute of Materials Minerals & Mining, UK). Other research interests include chemical tempering, high entropy ceramics, polymer-derived ceramics, and thermal energy storage. He authored 100+ manuscripts and serves as associate editor in Materials, Frontiers in Materials, and the Journal of the American Ceramic Society.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Ceramics, Glass, Refractory Materials Symposium

Seramik, Cam, Refrakter Malzemeleri Sempozyumu





Invited Speaker

Davetli Konuşmacı



**ASSOC. PROF.
COSMIN M.
COTRUT**

National University
of Science and
Technology
Politehnica Bucharest
Romania

Dr. Cosmin M. Cotrut is Associate Professor at the National University of Science and Technology Politehnica Bucharest, Faculty of Materials Science and Engineering. He published 7 books and book chapters (Springer Nature, Elsevier), over 100 peer reviewed scientific papers with Hirsch index 23, total number of citations 1500+. He was invited professor in other foreign universities (Ecole Polytechnique Universitaire de Lille, France and Tomsk Polytechnic University, Russia). The main research interest is related to degradation and corrosion of biomaterials with outstanding contributions related to the field of surface biofunctionalization methods for enhance of osseointegration and inducing antibacterial properties (biomimetic coatings of hydroxyapatite doped or co-doped with Mg, Sr, Ag, Zn by electrochemical methods), improving biocompatibility and tribological properties (thin layers based on nitrides, carbides, oxides or metallic glasses with the help of PVD techniques), the control of the degradation of biodegradable alloys (polymer based and PVD coatings) and the development of new Ti-based biocompatible alloys obtained both through classic methods and additive manufacturing techniques, but also their biofunctionalization through nanostructuring and/or coating their surfaces. He serves as editor at different prestigious publishing houses (Editorial Board Member for Scientific Reports - Springer Nature, Heliyon- CellPress, Coatings - MDPI or Guest Editor for Thin Solid Films - Frontiers in Materials).

SYMPOSIUM TOPIC | SEMPOZYUM KONUSU

Biomaterials Symposium

Biyomalzemeler Sempozyumu



JAKUB CIFTCI

Amazemet

Poland

Jakub Ciftci is a material researcher focused on developing new alloys for additive manufacturing obtained through ultrasonic atomization in the Warsaw University of Technology spin-off company - AMAZEMET. Currently, an application engineer at AMAZEMET enhancing the company's product offerings and solutions. Jakub is pursuing Ph.D. at Warsaw University of Technology, actively seeking research partners for collaborative R&D projects. This dual role highlights his commitment to both academic excellence and industry innovation. Specialized in the development of process parameters for laser powder bed fusion to tailor the obtained microstructures. Recent research concerns alloys for high-temperature applications including refractory alloys and circular economy in additive manufacturing by recycling the materials by laboratory-scale ultrasonic atomizer. This approach not only enhances sustainability but also maximizes the efficiency of material usage in manufacturing processes.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Aerospace Materials Symposium

Havacılık Malzemeleri Sempozyumu





Invited Speaker

Davetli Konuşmacı



**ASSOC. PROF.
ALEX GREANEY**

University of
California, Riverside

USA

Assoc. Prof. Alex Greaney gained a MS in Metallurgy and the Science of Materials from Oxford University and his PhD in Materials Science and Engineering from UC Berkeley. He completed postdoctoral training at UC Berkeley and MIT before becoming an Assistant Professor at Oregon State University in 2011. He moved to UC Riverside in 2015. His research group uses theory and modeling to study the structure-property relations underpinning the mechanical, thermal and electronic properties of materials for application in energy conversion, energy storage and clean water.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Artificial Intelligence and Machine Learning Symposium

Yapay Zeka ve Makine Öğrenmesi Sempozyumu





**PROF. DR.
CEMİL HAKAN GÜR**

Middle East Technical
University

Türkiye

Prof. Dr. C. Hakan Gür received his BSc (1st rank among the department graduates in 1986), MSc, and PhD (1995) degrees from the Department of Metallurgical Engineering of Middle East Technical University (METU, Ankara). He performed research studies at BAM-Berlin between 1991-1993. He is the editor of the Handbook of Thermal Process Modeling of Steels (2009 CRC-Press). In 2010, he was appointed a Fellow of the International Federation of Heat Treatment and Surface Engineering. He served as the chair of the Department of Metallurgical and Materials Engineering between 2012-2022 and as the director of the Welding Technology and Non-destructive Testing Center between 2007-2024 at METU. He has level 3 certificates in UT, RT, MT, and PT methods from the German NDT Society. His research topics include non-destructive testing and materials characterization, heat treatment, and residual stress. He has 70 international journal articles and more than 150 conference articles.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Welding and Non-Destructive Testing Symposium

Kaynak ve Tahribatsız Muayene Sempozyumu





Invited Speaker

Davetli Konuşmacı



GÜRBÜZ GÜZEY

Parsan Makine
Parçaları Sanayii

Türkiye

Gürbüz Güzey Mechanical Engineer, MSc. Mechatronics. 30 Years of experience in Forging and Metal Forming Business and Technology.

The current position is Engineering Director of Parsan and Omtas Companies as responsible of Engineering, Investments, R&D, New Projects, and Quality.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Failure Analysis and Heat Treatment Symposium

Hasar Analizi ve Isıl İşlem Sempozyumu





**PROF.
ALAN LUO**

Ohio State University
USA

Prof. Alan Luo is Donald D. Glower Chair in Engineering, Professor of Materials Science and Engineering, and Professor of Integrated Systems Engineering (Manufacturing) at The Ohio State University (OSU) in Columbus, OH, USA. He leads the Lightweight Materials and Manufacturing Research Laboratory and is Director of the Advanced Casting Research Center (ACRC) at OSU. He also serves as a technical leader at The REMADE (Reducing EMbodied-Energy And Decreasing Emissions) Institute. Professor Luo is an elected member of the National Academy of Engineering (NAE), a fellow of The Minerals, Metals & Materials Society (TMS), Society for Automotive Engineers (SAE), and American Society of Metals (ASM). He has 22 patents and more than 340 technical publications on lightweight materials, advanced manufacturing, and integrated computational materials engineering. Prior to joining OSU in 2013, Dr. Luo was a GM Technical Fellow at General Motors Global Research and Development Center (Warren, MI) with 20 years of industrial experience.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Non-Ferrous Metals Symposium

Demir Dışı Metaller Sempozyumu





Invited Speaker

Davetli Konuşmacı



**PROF.
HIROSHIGE
MATSUMOTO**

Kyushu University
Japan

Dr. Hiroshige Matsumoto is a Professor, Associate Director, and Lead Principal Investigator at the Advanced Energy Conversion Systems Thrust, International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Kyushu University. He holds a Ph.D. in Engineering, Applied Chemistry from The University of Tokyo, where he conducted a molecular dynamics study on the relationship between local structure and chemical properties of glasses. After obtaining his Ph.D., he worked as a research associate at Nagoya University and Tohoku University before moving to Kyushu University, where he currently serves. Dr. Matsumoto's research focuses on solid state electrochemistry in relation to environment and energy, with significant contributions in the following areas: materials study on ion conducting ceramics, water/steam electrolysis using proton conducting inorganic materials, fuel cells using proton conducting inorganic materials, and nanoionics on solid state ionics. His research and contributions to the field of solid state electrochemistry have positioned him as a leading expert, particularly in the field of proton-conducting metal oxides for the development of environmentally friendly and efficient energy conversion systems.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Energy Materials Symposium

Enerji Malzemeleri Sempozyumu



Invited Speaker

Davetli Konuşmacı



MEHMET ÖRGEN

Erciyas Holding
Türkiye

Mehmet Örgen, Erciyas Hyperloop Deputy General Manager, has degree as Electric & Electronics Engineer with an MSc on Energy & Technology Management. After 30 years of experience in Turkish Navy and NATO, he has been a Senior Manager at Erciyas Holding since 2014. Besides his corporate affairs responsibilities, he is working on new technology businesses, startup discovery, innovation development, project acceleration in a broad ecosystem. In his capacity, he is leading Hyperloop Technology and Conceptual activities in the conglomerate and putting all his efforts to pioneer Hyperloop Development globally.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Welding and Non-Destructive Testing Symposium

Kaynak ve Tahribatsız Muayene Sempozyumu





Invited Speaker

Davetli Konuşmacı



OZAN ÖZER

Şişecam Science,
Technology & Design
Center

Türkiye

Ozan Özer is a Material Scientist by education and working as a responsible Coating Technologies Director in Sisecam, Science, Technology and Design Center. Sisecam is such a unique company in glass market involved in manufacturing of all products segments such as flat glass, glassware, packaging, automotive glass, solar glass, glass fiber, soda and chromium compounds. After 15 years of manufacturing experience in Sisecam Flat Glass division, he is now leading the coating development studies in all product segments of Sisecam.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Surface Treatment and Coating Symposium

Yüzey İşlemler ve Kaplama Sempozyumu





**PROF. DR.
SERGEI PREIS**

Tallinn University of
Technology

Estonia

Prof. Dr. Sergei Preis, born on May 31, 1959, graduated Tallinn University of Technology (TalTech), Estonia, as Chemical Engineer in 1981 and acquired his doctoral degrees in Environmental and Chemical Engineering in 1988 at TalTech and in 2001 at Lappeenranta University of Technology (LUT), respectively. He worked for TalTech since 1981 till 2000 as Junior Scientist, Senior Scientist, and Head of Laboratory, then for LUT from 2001 to 2014 as Senior Scientist and Associate Professor. From 2015 to 2017 he worked as Chair Professor at South China University of Technology. Since 2018, Sergei Preis is Professor at TalTech, heading the Laboratory of Environmental Engineering. Author of 120 peer-reviewed scientific publications, Sergei Preis successfully supervised ten doctoral studies, having two doctorates under current supervision.

SYMPOSIUM TOPIC | SEMPOZYUM KONUSU

Carbon Mitigation Technologies Symposium

Karbon Azaltma Teknolojileri Sempozyumu





Invited Speaker

Davetli Konuşmacı



**DR. -ING.
MARTIN TAUBER**

International
Magnesium
Association

Belgium

Dr. -Ing. Martin Tauber has over 25 years' experience in different raw material related industries, whereas Magnesium has been the most significant one, with executive positions with leading industry players like Hydro Magnesium and Magontec. In 2009, he founded FAURIS Management, a consulting company which provides services to the Magnesium industry on a global basis. Martin is also European Representative and former Chairman of the European Committee of the International Magnesium Association (IMA) and Founding President of the Critical Raw Material Alliance. Martin is also a registered expert of the European Commission.

SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Recycling and Sustainability Symposium

Geri Dönüşüm ve Sürdürülebilirlik





**PROF.
MIKHAIL
ZHELUDKEVICH**

Helmholtz-Zentrum
Hereon

Germany

Prof. Mikhail Zheludkevich currently serves as the Director of the Institute of Surface Science at Helmholtz-Zentrum Hereon, Germany. Additionally, he holds a full professorship at the University of Kiel. His research interests revolve around electrochemistry, multi-functional surfaces, and the active protection of lightweight materials and multi-material systems.

In 2002, Prof. Zheludkevich earned his PhD in Physical Chemistry from the Belarusian State University, specializing in the interaction of atomic gases with metallic surfaces. Following a decade of diverse roles at the University of Aveiro, ranging from post-doctoral researcher to group leader, he joined Helmholtz Zentrum Geesthacht as the head of the Corrosion and Surface Technology Department. In 2021, he established the Institute of Surface Science, a position he continues to lead.

Prof. Zheludkevich's contributions have garnered recognition, including the Tajima Prize from the International Society of Electrochemistry in 2016 and the distinction of Person of the Year 2023 by the International Mg Society. Furthermore, he serves as the chairman of the Aerospace Working Party at the European Federation of Corrosion.

SYMPOSIUM TOPIC | SEMPOZYUM KONUSU

Corrosion and Wear Symposium

Korozyon ve Aşınma Sempozyumu





Invited Speaker

Davetli Konuşmacı



**PROF.
ZIJIAN ZHENG**

The Hong Kong
Polytechnic University

Hong Kong

Prof. Zijian Zheng is currently Chair Professor of Soft Materials and Devices at the Department of Applied Biology and Chemical Technology, Associate Director of Research Institute for Intelligent Wearable Systems, Lead Investigator of Research Institute for Smart Energy at The Hong Kong Polytechnic University (PolyU). His research interests include surface and polymer science, nanofabrication, flexible and wearable electronics, energy conversion and storage. Prof. Zheng received his B. Eng. in Chemical Engineering at Tsinghua University in 2003, PhD in Chemistry at University of Cambridge in 2007, and postdoctoral training at Northwestern University in 2008-2009. He joined PolyU as Assistant Professor in 2009, and was promoted to tenured Associate Professor in 2013 and then Professor in 2017. He has published more than 200 papers in journals such as Science, Nat. Mater., Nat. Comm., Adv. Mate., JACS, Angew. Chem.. He also files more than 40 patents and is recipient of more than 15 academic awards. He serves as Editor-in-Chief of EcoMat (impact factor: 14.6), a flagship open-access journal in green energy and environment published by Wiley. He is Founding Member of The Young Academy of Sciences of Hong Kong (2018), Chang Jiang Chair Professor by the Ministry of Education of China (2020), Senior Research Fellow of the University Grant Commission of Hong Kong (2021), Fellow of International Association of Advanced Materials (FIAAM, 2021), Fellow of the Royal Society of Chemistry (FRSC, 2022), and Young Fellow of the Hong Kong Academy of Engineering Science (YFHKEng, 2024). He is awardee of the inaugural Hong Kong Engineering Science and Technology Award.

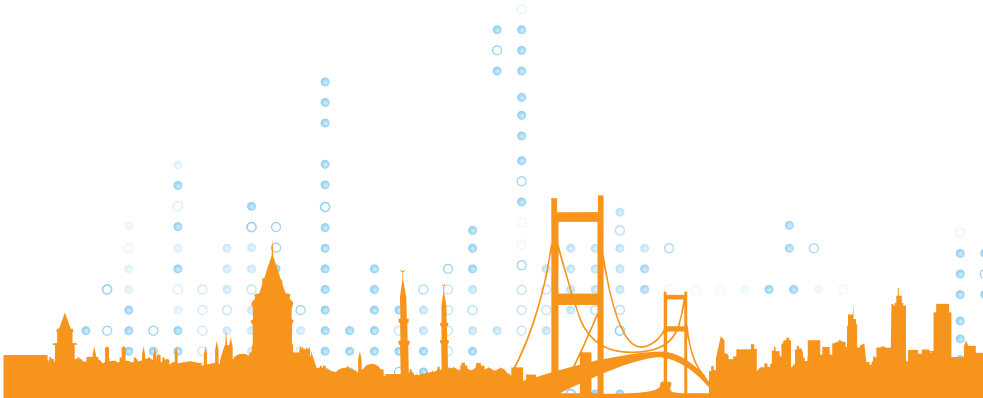
SYMPOSIUM TOPIC I SEMPOZYUM KONUSU

Composite and Polymer Materials Symposium
Kompozit ve Polimer Malzemeler Sempozyumu



22nd International Metallurgy and Materials Congress

22. Uluslararası Metalurji
ve Malzeme Kongresi



Invited Speaker

Davetli Konuşmacı

19 SEPTEMBER 2024 THURSDAY / 19 EYLÜL 2024 PERŞEMBE

FUAYE: RED HALL / KIRMIZI SALON

🕒 13.30-14.00

Driving Performance: Innovative Passivation Technology for Cast Aluminum Alloys

Can AKYIL • MACDERMIC ENTHONE - Türkiye

🕒 15.10-15.40

Creating Energy Efficient Glass Surfaces & Challenges

Ozan ÖZER • ŞİŞECAM SCIENCE, TECHNOLOGY & DESIGN CENTER - Türkiye

HALL 6 BLUE HALL / MAVİ SALON

🕒 13.30-14.00

Soft and Permeable Electronics

Zijian ZHENG • THE HONG KONG POLYTECHNIC UNIVERISTY - Hong Kong

HALL 5 PURPLE HALL / MOR SALON

🕒 15.10 - 15.40

Ultrasonic Atomization of Novel Materials for Aerospace Applications

Jakub CIFTCI • AMAZEMET - Poland

🕒 16.50-17.20

Adsorbents from Lignite Fly Ash Capturing Heavy Metals and CO₂

Sergei PREIS • TALLINN UNIVERSITY OF TECHNOLOGY - Estonia

HALL 5 GREEN HALL / YEŞİL SALON

🕒 13.30-14.00

A Global Decarbonization Strategic Roadmap for the Magnesium Industry

Martin TAUBER • INTERNATIONAL MAGNESIUM ASSOCIATION - Belgium

20 SEPTEMBER 2024 FRIDAY / 20 EYLÜL 2024 CUMA

HALL 6 BLUE HALL / MAVİ SALON

🕒 11.20-11.50

Proton-Conducting Solid Oxides for Hydrogen Energy System

Hiroshige MATSUMOTO • KYUSHU UNIVERSITY - Japan

🕒 13.30-14.00

Physical Vapor Deposition for Enhanced Lithium Ion Battery Interface Performance

Jones ALAMI • MOHAMMED VI POLYTECHNIC UNIVERSITY - Morocco



HALL 5 PURPLE HALL / MOR SALON

🕒 11.20-11.50

Rapid Firing of 3YSZ: Impact of the Heating Rate on Sintering, Properties and Microstructure

Mattia BIESUZ • UNIVERSITY OF TRENTO - Italy

🕒 16.50-17.20

AI Approaches for Finding Efficient Corrosion Inhibitors

Mikhail ZHELDKEVICH • HELMHOLTZ-ZENTRUM HEREON - Germany

HALL 5 GREEN HALL / YEŞİL SALON

🕒 13.30-14.00

Lightweight Materials and Sustainable Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)

Alan LUO • OHIO STATE UNIVERSITY - USA

21 SEPTEMBER 2024 SATURDAY / 21 EYLÜL 2024 CUMARTESİ

FUAYE: RED HALL / KIRMIZI SALON

🕒 13.30-14.00

Surface Bioactivation of Metallic Biomaterials Thru Electrochemical Techniques

Cosmin M. COTRUT • NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA BUCHAREST - Romania

🕒 15.20-15.50

Non-Destructive Testing of Components Produced via Wire-Arc Additive Manufacturing

Cemil Hakan GÜR • MIDDLE EAST TECHNICAL UNIVERSITY - Türkiye

🕒 15.50-16.20

A New Way of Transportation: Hyperloop-Large Diameter Hyperloop Tubes Mass Production

Mehmet ÖRGEN, Mahmut GEL • ERCİYES HOLDİNG - Türkiye

HALL 6 BLUE HALL / MAVİ SALON

🕒 11.20-11.50

Lightweight Efforts on Heavy Duty Forging Applications

Gülbüz GÜZEY • PARSAN MAKİNE PARÇALARI SANAYİİ - Türkiye

🕒 13.30-14.00

Application of Graph Methods in Computational Design of Kinetically Active Molecules

Alex GREANEY • UNIVERSITY OF CALIFORNIA, RIVERSIDE - USA



Congress Halls

Kongre Salonları



Istanbul Expo Center İstanbul Fuar Merkezi



Symposiums

Sempozyumlar



STCS

Surface Treatment and Coating Symposium

Yüzey İşlemler ve Kaplama Sempozyumu

CPS

Composite and Polymer Materials Symposium

Kompozit ve Polimer Malzemeler Sempozyumu

AMS

Aerospace Materials Symposium

Havacılık Malzemeleri Sempozyumu

CMTS

Carbon Mitigation Technologies Symposium

Karbon Azaltma Teknolojileri Sempozyumu

RSS

Recycling and Sustainability Symposium

Geri Dönüşüm ve Sürdürülebilirlik Sempozyumu

STS

Steel Symposium

Çelik Sempozyumu

EMS

Energy Materials Symposium

Enerji Malzemeleri Sempozyumu

NFMS

Non-Ferrous Metals Symposium

Demir Dışı Metaller Sempozyumu

CGRS

Ceramics, Glass, Refractory Materials Symposium

Seramik, Cam, Refrakter Malzemeleri Sempozyumu

CWS

Corrosion and Wear Symposium

Korozyon ve Aşınma Sempozyumu

NMS

Nanomaterials Symposium

Nanomalzemeler Sempozyumu

BMS

Biomaterials Symposium

Biyomalzemeler Sempozyumu

WNTS

Welding and Non-Destructive Testing Symposium

Kaynak ve Tahribatsız Muayene Sempozyumu

FAHTS

Failure Analysis and Heat Treatment Symposium

Hasar Analizi ve Isıl İşlem Sempozyumu

AIMLS

Artificial Intelligence and Machine Learning Symposium

Yapay Zeka ve Makina Öğrenmesi Sempozyumu

CSS

Casting Symposium

Döküm Sempozyumu

URS

Undergraduate Research Symposium

Lisans Öğrencileri Araştırma Sempozyumu



IMMC'24 PROGRAMME

IMMC'24 PROGRAMI



HALL-3		10.00 - 11.00	Opening Ceremony / Açılış Töreni				
FUAYE: RED HALL KIRMIZI SALON		HALL-6: BLUE HALL MAVİ SALON		HALL-5: PURPLE HALL MOR SALON		HALL-5: GREEN HALL YEŞİL SALON	
Opening Session: Humanity vs. Artificial Intelligence Açılış Oturumu: İnsanlık ve Yapay Zeka							
Lunch / Öğle Yemeği							
STCS Session 1 Surface Treatment and Coating Symposium 1. Oturum Yüzey İşlemler ve Kaplama Sempozyumu	13.30 - 15.00	CPS Session 1 Composite and Polymer Materials Symposium 1. Oturum Kompozit ve Polimer Malzemeler Sempozyumu	13.30 - 14.50	AMS Session 1 Aerospace Materials Symposium 1. Oturum Havacılık Malzemeleri Sempozyumu	13.30 - 15.00	RSS Session 1 Recycling and Sustainability Symposium 1. Oturum Geri Dönüşüm ve Sürdürülebilirlik Sempozyumu	
Coffee Break / Kahve Molası							
STCS Session 2 Surface Treatment and Coating Symposium 2. Oturum Yüzey İşlemler ve Kaplama Sempozyumu	15.10 - 16.30	CPS Session 2 Composite and Polymer Materials Symposium 2. Oturum Kompozit ve Polimer Malzemeler Sempozyumu	15.10 - 16.40	AMS Session 2 Aerospace Materials Symposium 2. Oturum Havacılık Malzemeleri Sempozyumu	15.10 - 16.30	RSS Session 2 Recycling and Sustainability Symposium 2. Oturum Geri Dönüşüm ve Sürdürülebilirlik Sempozyumu	
Coffee Break / Kahve Molası							
STCS Session 3 Surface Treatment and Coating Symposium 3. Oturum Yüzey İşlemler ve Kaplama Sempozyumu	16.50 - 18.10	CPS Session 3 Composite and Polymer Materials Symposium 3. Oturum Kompozit ve Polimer Malzemeler Sempozyumu	16.50 - 18.20	CMTS Session 3 Carbon Mitigation Technologies Symposium 3. Oturum Karbon Azaltma Teknolojileri Sempozyumu	16.50 - 18.10	RSS Session 3 Recycling and Sustainability Symposium 3. Oturum Geri Dönüşüm ve Sürdürülebilirlik Sempozyumu	

FUAYE: RED HALL KIRMIZI SALON		HALL-6: BLUE HALL MAVİ SALON		HALL-5: PURPLE HALL MOR SALON		HALL-5: GREEN HALL YEŞİL SALON	
10.00 - 11.00	STS Session 1 Steel Symposium 1. Oturum Çelik Sempozyumu	10.00 - 11.00	EMS Session 1 Energy Materials Symposium 1. Oturum Enerji Malzemeleri Sempozyumu	10.00 - 11.00	CGRS Session 1 Ceramics, Glass, Refractory Materials Symposium 1. Oturum Seramik, Cam, Refrakter Malzemleri Sempozyumu	10.00 - 11.00	NFMS Session 1 Non-Ferrous Metals Symposium 1. Oturum Demir Dışı Metaller Sempozyumu
Coffee Break / Kahve Molası							
11.20 - 12.40	STS Session 2 Steel Symposium 2. Oturum Çelik Sempozyumu	11.20 - 12.30	EMS Session 2 Energy Materials Symposium 2. Oturum Enerji Malzemeleri Sempozyumu	11.20 - 12.50	CGRS Session 2 Ceramics, Glass, Refractory Materials Symposium 2. Oturum Seramik, Cam, Refrakter Malzemleri Sempozyumu	11.20 - 12.40	NFMS Session 2 Non-Ferrous Metals Symposium 2. Oturum Demir Dışı Metaller Sempozyumu
Lunch / Öğle Yemeği							
13.30 - 14.50	STS Session 3 Steel Symposium 3. Oturum Çelik Sempozyumu	13.30 - 15.00	EMS Session 3 Energy Materials Symposium 3. Oturum Enerji Malzemeleri Sempozyumu	13.30 - 14.50	CGRS Session 3 Ceramics, Glass, Refractory Materials Symposium 3. Oturum Seramik, Cam, Refrakter Malzemleri Sempozyumu	13.30 - 15.00	NFMS Session 3 Non-Ferrous Metals Symposium 3. Oturum Demir Dışı Metaller Sempozyumu
Coffee Break / Kahve Molası							
15.10 - 16.30	STS Session 4 Steel Symposium 4. Oturum Çelik Sempozyumu	15.10 - 16.30	EMS Session 4 Energy Materials Symposium 4. Oturum Enerji Malzemeleri Sempozyumu	15.10 - 16.30	CGRS Session 4 Ceramics, Glass, Refractory Materials Symposium 4. Oturum Seramik, Cam, Refrakter Malzemleri Sempozyumu	15.10 - 16.30	NFMS Session 4 Non-Ferrous Metals Symposium 4. Oturum Demir Dışı Metaller Sempozyumu
Coffee Break / Kahve Molası							
16.50 - 17.50	STS Session 5 Steel Symposium 5. Oturum Çelik Sempozyumu	16.50 - 18.10	EMS Session 5 Energy Materials Symposium 5. Oturum Enerji Malzemeleri Sempozyumu	16.50 - 18.20	CWS Session 5 Corrosion and Wear Symposium 5. Oturum Korozyon ve Aşınma Sempozyumu	16.50 - 17.50	NFMS Session 5 Non-Ferrous Metals Symposium 5. Oturum Demir Dışı Metaller Sempozyumu

	FUAYE: RED HALL KIRMIZI SALON	HALL-6: BLUE HALL MAVİ SALON	HALL-5: PURPLE HALL MOR SALON
10.00 - 11.00	NMS Session 1 Nanomaterials Symposium 1. Oturum Nanomalze- meler Sempozyumu		URS Session 1 Undergradu- ate Research Symposium 1. Oturum Lisans Öğrencileri Araştırma Sempozyumu
Coffee Break / Kahve Molası			
11.20 - 12.40	NMS Session 2 Nanomaterials Symposium 2. Oturum Nanomalze- meler Sempozyumu	11.20 - 12.50 FAHTS Session 1 Failure Analysis and Heat Treatment Symposium 1. Oturum Hasar Analizi ve Isıl İşlem Sempozyumu	11.20 - 12.20 URS Session 2 Undergradu- ate Research Symposium 2. Oturum Lisans Öğrencileri Araştırma Sempozyumu
Lunch / Öğle Yemeği			
13.30 - 15.00	BMS Session 3 Biomaterials Symposium 3. Oturum Biyomalzem- eler Sempozyumu	13.30 - 15.00 AIMLS Session 2 Artificial Intelligence and Machine Learning Symposium 2. Oturum Yapay Zeka ve Makine Öğrenmesi Sempozyumu	13.30 - 14.30 URS Session 3 Undergradu- ate Research Symposium 3. Oturum Lisans Öğrencileri Araştırma Sempozyumu
Coffee Break / Kahve Molası			
15.20 - 17.00	WNTS Session 4 Welding and Non-Destruc- tive Testing Symposium 4. Oturum Kaynak ve Tahribatsız Muayene Sempozyumu	15.20 - 16:40 CSS Session 3 Casting Symposium 3. Oturum Döküm Sempozyumu	



16th International Iron-Steel, Foundry, Non-Ferrous Metallurgy Technologies, Machinery And Products Trade Fair **ANKIROS 2024**

19-21 SEPTEMBER 2024 ISTANBUL EXPO CENTER

The Meeting Point of the Metallurgy Industry, Ankiros, is Breaking Records This Year with Over 1,130 Exhibitors and a 32,000 m² Exhibition Area.

Preparations for the 16th edition of the ANKIROS Fair, to be held this year, are nearing completion. The fair, which will take place from September 19-21 at Yeşilköy IFM, has garnered significant interest from both domestic and international exhibitors.

The fair, organized every two years by Hannover Messe Ankiros Fuarçılık A.Ş., will feature 419 local and over 700 international companies. With more than 1,130 participants from 41 countries and an expanded exhibition area of 32,000 m², the Ankiros Fair will once again host major companies and the latest technologies in the metallurgy sector. The main theme for the 2024 fair will be "Sustainable Metallurgy and Innovative Technologies."

The ANKIROS Fairs receive strong support from leading national and global organizations and associations in the sector. The fair has become an indispensable business platform offering effective and lasting solutions for all related industries. This year, new exhibition areas and seminars focusing on digitalization and Industry 4.0 applications will be organized. Additionally, interactive areas will be created where participating companies can showcase their innovative products and technologies. The 12th International Foundry Congress will be organized by TUDÖKSAD, and the 22nd International Metallurgy and Materials Congress will be organized by METEM.

General Manager of Hannover Messe Ankiros Fuarçılık A.Ş., İbrahim Anıl: "The Importance of Fairs Has Increased After the Pandemic"

Providing information about the fair preparations, İbrahim Anıl, General Manager of Hannover Messe Ankiros Fuarçılık A.Ş., made the following statement about the fair:

"We are continuing our preparations for the 16th edition of the ANKIROS Fair with great excitement. The relocation of the fair to a new venue and the high demand for participation are motivating us immensely. The importance of face-to-face fairs has increased since the lifting of travel restrictions after the pandemic. Specialized fairs provide significant time and cost advantages to companies. For instance, instead of meeting with five global companies in different countries, it becomes possible to meet their representatives at a single fair. This year, we broke a record in terms of international participation at the ANKIROS Fair. More than 50% of the exhibitors are from foreign companies, with over 280 direct international participants. This international participation is expected to reflect in the number of visitors, and we anticipate more foreign visitors than ever before.



As you know, the ANNOFER Fair is now organized as a special section under ANNOFER. Similarly, the TURKCAST Fair will be featured under ANKIROS as the TURKCAST special section. ANKIROS will exhibit in three separate sections, and with the growth of the Steel Special Section this year, it will bring together all stakeholders of the metallurgy sector. Additionally, relocating the fair to Istanbul Expo Center has provided a significant advantage in terms of expanding the net area of the fair. The ANKIROS 2022 Fair took place in a 23,582 m² net exhibition area, and the ANKIROS 2024 Fair at IFM has already reached 32,000 m². This has allowed for the expansion of the TURKCAST and Steel Special halls as well. Moreover, the central location of the fair venue, being close to all commercial and social centers, hotels, and public transportation, offers great convenience to both participants and visitors."

The Fair Will Feature 3 Special Sections:

ANKIROS - Iron and Steel / ANNOFER - Non-Ferrous Metals / TURKCAST - Foundry Products

ANKIROS - Iron and Steel Special Section: The steel sector, which holds great importance in our country's total exports, will be exhibited in larger halls with the support of the Turkish Steel Producers Association (TÇÜD). Alongside the international suppliers of the steel industry, leading manufacturers in the iron-steel sector and steel service centers will have the opportunity to showcase their advanced technology, services, and products in these halls.

TURKCAST - Foundry Products Special Section: The TURKCAST Special Section, which focuses entirely on foundry products, is crucial for the developing industry. It will feature materials produced using various casting methods for heavy industry machinery, agricultural machinery, shipbuilding, automotive, construction, urban planning, transportation, heating industry, and many other fields.

ANNOFER - Non-Ferrous Metals Special Section: In the Non-Ferrous Metals section, participants will exhibit the latest machines, equipment, products, raw materials, and consumables in the field of non-ferrous metals. This section will focus on facilities and equipment necessary for the production and shaping of non-ferrous metals, featuring all kinds of machinery and equipment required for metallurgy facilities, rolling mills, and raw material processing.

Over 20,000 Visitors from 81 Countries Are Expected.

The visitor profile, expected from 81 countries, will mainly consist of iron and steel producers, users, and traders; foundries; non-ferrous metal producers; machinery manufacturers; the defense industry; municipalities; cement, automotive, white goods, construction, and shipbuilding industries.

Fair Events:

- **METEM / UCTEA Chamber of Metallurgical and Materials Engineers' Training Center:**
22nd International Metallurgy and Materials Congress
- **TÜDÖKSAD / Turkish Foundrymen's Association:**
12th International Foundry Congress
Hannover Messe Ankiros Fuarçılık A.Ş.





OPENING CEREMONY AÇILIŞ TÖRENİ

ANKIROS 2024 | TURKCAST 2024

22nd International Metallurgy and Materials Congress
22. Uluslararası Metalurji ve Malzeme Kongresi

12th International Foundry Congress
12. Uluslararası Döküm Kongresi

Date: September 19th 2024, Thursday at 10:00

Tarih: 19 Eylül 2024 Perşembe, Saat 10:00

Venue: İstanbul Expo Center Hall 3

Yer: İstanbul Fuar Merkezi Salon 3





OPENING SPEECHES

AÇILIŞ KONUŞMALARI



İbrahim ANIL

Hannover Messe Ankiros Fuarçılık A.Ş.
Genel Müdür / General Manager



Dr. Timo WÜRZ

VDMA Metallurgy - Managing Director
CECOF - General Secretary



Prof. Dr. Özgül KELEŞ

IMMC2024 - 22. Uluslararası Metalurji ve Malzeme Kongresi / 22nd International Metallurgy and Materials Congress - Organizasyon Kurulu Başkanı / Chairman of the Organizing Committee



Ata ÖZDEMİRLER

"METEM" - TMMOB Metalurji ve Malzeme Müh. Odası Eğitim Merkezi / UCTEA Chamber of Metallurgical and Materials Engineers' Training Center - Yürütme Kurulu Başkanı / Chairman of Executive Board



Ahmet İrfan TÜRK KOLU

TMMOB Metalurji ve Malzeme Mühendisleri Odası / UCTEA Chamber of Metallurgical and Materials Engineers - Yönetim Kurulu Başkanı / Chairman of Executive Board



Dr. Veysel YAYAN

"TÇÜD" - Türkiye Çelik Üreticileri Derneği / Turkish Steel Producers Association
Genel Sekreter / General Secretary



Kadir EFE

"TÜDÖKSAD" - Türkiye Döküm Sanayicileri Derneği / Turkish Foundrymen's Association
Yönetim Kurulu Başkanı / Chairman of the Board



Mehmet Fatih KACIR

T.C. Sanayi ve Teknoloji Bakanlığı / Republic of Türkiye Ministry of Industry and Technology
Bakan / Minister





OPENING SESSION

AÇILIŞ OTURUMU

KEYNOTE SPEAKERS | AÇILIŞ KONUŞMACILARI

11.00-12.30

Humanity vs. Artificial Intelligence

İnsanlık ve Yapay Zeka

Session Chairman /

Oturum Başkanı:



Özgül KELEŞ

İSTANBUL
TECHNICAL
UNIVERSITY
Türkiye

Keynote Speakers /

Açılış Konuşmacıları



**The State of AI in Recent
Years: The Breakthrough
Year of Generative AI**

Altan ÇAKIR

İSTANBUL TECHNICAL
UNIVERSITY
Türkiye



**Materials Informatics:
From Molecules to
Neighborhoods**

Krishna RAJAN

UNIVERSITY OF BUFFALO
USA



**Forging the Future: AI,
Humanity, and the Fabric
of Tomorrow's Society**

Dicle YURDAKUL

AU INOVA RESEARCH
CENTER
Türkiye





SURFACE TREATMENT AND COATING SYMPOSIUM

YÜZEY İŞLEMLER VE
KAPLAMA SEMPOZYUMU

STCS

SESSION 1

Session Chairman / Oturum Başkanı:

Kürşat KAZMANLI • İSTANBUL TECHNICAL UNIVERSITY

🕒 **13.30-14.00**

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Driving Performance: Innovative Passivation Technology for Cast Aluminum Alloys

Can AKYIL

• MACDERMIC ENTHONE
Türkiye

🕒 **14.00-14.20**

Investigation of the Corrosion Behavior of Anodically Oxidized AZ31 Magnesium Alloys in Sodium Pentaborate-Enriched Electrolyte

Taha Çağrı ŞENOCAK, Kadri Vefa EZİRMİK

• ATATÜRK UNIVERSITY
Türkiye

🕒 **14.20-14.40**

Investigation of Corrosion Behavior on Lacquered Surface in Finstock Materials

Duygu MOLLA, Sümbüle SAĞDIÇ, Ahmet AKARSU, Erdoğan ÖZDEMİR, Onur BİRBAŞAR, Canan İNEL, Ali ULUS

• ASAŞ ALÜMİNYUM
Türkiye

🕒 **14.40-15.00**

Electropolishing of Titanium Grade-2 in Hydrofluoric Acid – Ethylene Glycol Mixed Electrolyte

Büşra KOZAN¹, Esra KARAKAYA², Metehan ERDOĞAN¹

• ¹ANKARA YILDIRIM BEYAZIT UNIVERSITY, ²MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye



STCS

SESSION 2

Session Chairman / Oturum Başkanı:

Ekrem ALTUNCU • SAKARYA UNIVERSITY OF APPLIED SCIENCES

☀ 15.10-15.40

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Creating Energy Efficient Glass Surfaces & Challenges

Ozan ÖZER

• ŞİŞECAM SCIENCE, TECHNOLOGY & DESIGN CENTER
Türkiye

☀ 15.40-16.00

Investigation of the Effect of $\text{Li}_2\text{O}/\text{K}_2\text{O}$ Molar Ratio on Boiling Water Resistance of Inorganic Glass-Ceramic Coatings

**Seyithan AKBULUT¹, Berhan CAN¹, Talha Doğan ÖZERDEM^{1,2},
Sinan DALOĞLU^{1,2}, Oğuz KARAAHMET², Buğra ÇİÇEK^{1,2}**

• ¹YILDIZ TECHNICAL UNIVERSITY, ²AKCOAT R&D CENTER
Türkiye

☀ 16.00-16.20

Enhanced Hydrophobic Properties of Fluoroalkyl-Modified Epoxy-Based Coatings: Characterization and Analysis

Elif KESKİN^{1,2}, Nesrin KÖKEN², Alper YEŞİLÇUBUK¹, Simge TARKUÇ¹

• ¹ARÇELİK, ²İSTANBUL TECHNICAL UNIVERSITY
Türkiye

☀ 16.20-16.40

Vapor Deposition Polymerization of Polypyrrole on Fabric for Enhanced Capacitive Pressure Sensing

Ayça AYDURMUŞ, Işıl DEMİRKAN, Ece Naz ERÜLKER, Faruk CAN, Güllü KIZILTAŞ ŞENDUR, Gözde ÖZAYDIN İNCE

• SABANCI UNIVERSITY
Türkiye

STCS

SESSION 3

Session Chairman / Oturum Başkanı:

Metehan ERDOĞAN • ANKARA YILDIRIM BEYAZIT UNIVERSITY

☀ **16.50-17.10**

PVD CrSi Coatings to Protect Thermoelectric Materials from Degradation

Zhenxue ZHANG, Mikdat GURTARAN, Hanshan DONG

• THE UNIVERSITY OF BIRMINGHAM
United Kingdom

☀ **17.10-17.30**

Deposition of Tungsten Oxide-Based Nanocomposite Thin Films by Sol-Gel Dip Coating Method

Muhamet NECAR, Miray Batıkan KANDEMİR, Uğur Can ÖZÖĞÜT, Tolga TAVŞANOĞLU

• MUĞLA SITKI KOÇMAN UNIVERSITY
Türkiye

☀ **17.30-17.50**

Development of Multilayer Tribological Coating Systems for Cold Stamping Process

Canan HACIOĞLU¹, Sena ALTIN¹, Enes KURTULUŞ¹, Mert ŞENTÜRK¹, Kadir SAĞIR², Çağatay ELİBOL²

• ¹ÇOŞKUNOZ METAL FORM, ²TURKISH-GERMAN UNIVERSITY
Türkiye





COMPOSITE AND POLYMER MATERIALS SYMPOSIUM

KOMPOZİT VE POLİMER
MALZEMELER SEMPOZYUMU

CPS

SESSION 1

Session Chairman / Oturum Başkanı:

Cengiz KAYA • YILDIZ TECHNICAL UNIVERSITY

🕒 **13.30-14.00**

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Soft and Permeable Electronics

Zijian ZHENG

• THE HONG KONG POLYTECHNIC UNIVERISTY
Hong Kong

🕒 **14.00-14.20**

Synthesis of Bio-Based Unsaturated Polypropylene Fumarate/ Kaolinite Nanocomposites via In-Situ Polymerization

Ersan EYİLER

• ÇUKUROVA UNIVERSITY
Türkiye

🕒 **14.20-14.40**

Development of Biocomposite Films of Poly(Lactic Acid)/ Ceramics for Biosensor Application

**Hayrunnisa ÖZER, Fatma DEMİRCİ, Şeyma DUMAN,
Eylem DİZMAN TOMAK**

• BURSA TECHNICAL UNIVERSITY
Türkiye

🕒 **14.40-15.00**

Biodegradable and Antibacterial PCL Films Containing Pomegranate Peels for Food Packaging

Nida ÇELEBİ, Ömer Faruk USLU, Nebahat ARAL

• YEDİTEPE UNIVERSITY
Türkiye



CPS

SESSION 2

Session Chairman / Oturum Başkanı:

Burak ÖZKAL • YURT BAY SERAMİK

15.10-15.30

Investigation of Acoustic Properties of Glass Fiber and Natural Fiber Reinforced Composites after UV Aging

Rabia Şevval AKAN, Hülya ARSLAN KARAÇEPER

• SAZCILAR OTOMOTIV

Türkiye

15.30-15.50

Surface Modification of UHMWPE Nonwoven via Oxidation

Sağanak Yağmur ARSLAN, Nebahat ARAL

• YEDİTEPE UNIVERSITY

Türkiye

15.50-16:10

Porosity and Water Permeability of B and BN Reinforced PVA Nanofiber Composites

Merve BALKAŞ, Nilüfer DUYGULU

• YILDIZ TECHNICAL UNIVERSITY

Türkiye

16.10-16.30

Evaluation of PP Polymer Density in the Forming and Mechanical Performance of Multilayered Nonwoven PES/PET-PP-PES Sheets in Trunk Trim Composite Parts

Armağan GÜL¹, Umut ÖZKAN², Aydeniz AYBATI¹

• ¹OYAK RENAULT, ²TREDIN TREVES OTO DONANIM

Türkiye

CPS

SESSION 3

Session Chairman / Oturum Başkanı:

Mehmet Şeref SÖNMEZ • ISTANBUL TECHNICAL UNIVERSITY

🕒 16.50-17.10

Improving Mechanical Properties of Core-Lightened Steel Ropes with UHMWPE Reinforcement

Büşra ÇETİNKAYA^{1,2}, Zeynep Şeyma DAMADOĞLU¹, Murat POLAT¹, Tuba ÖZEREN¹, Mustafa Çağrı UYANIK¹, Rıza KÖSELER¹

• ¹ÇELİK HALAT VE TEL, ²SAKARYA UNIVERSITY - Türkiye

🕒 17.10-17.30

Investigation of Thermal and Mechanical Behaviors of Polymer Matrix Composites Obtained by Addition of Various Reinforcements into Epoxy Resin

Bedirhan GÜNEŞ¹, Zeliha Bengisu YAKIŞIK^{1,2}, İmdat Emirhan ÖZCAN¹, Kerem USLU¹, Cennet YILDIRIM^{1,3}

• ¹TURKISH ENERGY, NUCLEAR AND MINERAL RESEARCH AGENCY - BORON RESEARCH INSTITUTE, ²GAZİ UNIVERSITY, ³İSTANBUL TECHNICAL UNIVERSITY - Türkiye

🕒 17.30-17.50

Investigation of the Disposability of Sandwich Closed Cell Aluminum Foams as Backing Plate in Ballistic Applications

Melih Cemal KUŞHAN¹, Batuhan DAZ¹, Tolga ÜNALIR¹, Barış ÇETİN², Engin GÖDE³, Atanur TEOMAN¹

• ¹ESKİŞEHİR OSMANGAZİ UNIVERSITY, ²FNSS SAVUNMA SİSTEMLERİ, ³STM SAVUNMA TEKNOLOJİLERİ - Türkiye

🕒 17.50-18.10

Sustainable and Eco-Friendly Dynamite Cables for a Green Future

Taha KARAOĞLU, Gülsüm TARIM, Gökhan ÇOKLAR, Ekrem ALTAN

• BORSAN AR-GE MERKEZİ - Türkiye





AMS

AEROSPACE MATERIALS SYMPOSIUM

HAVACILIK MALZEMELERİ
SEMPOZYUMU

AMS

SESSION 1

Session Chairman / Oturum Başkanı:

Hüseyin AYDIN • TUBITAK MAM

🕒 13.30-13.50

The Influence of Process Parameters on Residual Stress State of 17-4 Ph Stainless Steel Parts Additively Manufactured by Laser Powder Bed Fusion

Gökhan ÇELİK¹, C. Hakan GÜR², Caner ŞİMŞİR²

• ¹ROKETSAN, ²MIDDLE EAST TECHNICAL UNIVERSITY - Türkiye

🕒 13.50-14.10

Development of Hot Die Forging Process for Ni Superalloys

Gökhan COŞKUN, Enes DAĞCI, Gürbüz GÜZEY

• PARSAN MAKİNE PARÇALARI - Türkiye

🕒 14.10-14.30

Investigations on the Effect of Secondary Treatments on the Mechanical Properties of Ti48Al2Cr2Nb Alloy Manufactured by Electron Beam Powder Bed Fusion

Güney Mert BİLGİN^{1,2}, Seren ÖZER^{1,3}, Kemal DAVUT⁴, Ziya ESEN⁵, Arcan F. DERİCİOĞLU¹

• ¹MIDDLE EAST TECHNICAL UNIVERSITY, ²TUSAS ENGINE INDUSTRIES, ³ATILIM UNIVERSITY, ⁴İZMİR INSTITUTE OF TECHNOLOGY, ⁵ÇANKAYA UNIVERSITY - Türkiye

🕒 14.30-14.50

Effect of SLM Scanning Speed on Texture and Hardness of Hastelloyx Alloy

Sercan BASİT¹, Muhammed Enes İLGAZİ³, Hakan YILMAZER³, Özkan GÖKÇEKAYA², Takayoshi NAKANO²

• ¹KIRŞEHİR AHİ EVRAN UNIVERSITY, ²OSAKA UNIVERSITY, ³YILDIZ TECHNICAL UNIVERSITY - Türkiye, Japan



AMS

SESSION 2

Session Chairman / Oturum Başkanı:

Hüseyin AYDIN • TUBİTAK MAM

☀ 15.10 - 15.40

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Ultrasonic Atomization of Novel Materials for Aerospace Applications

Jakub CIFTCI

• AMAZEMET
Poland

☀ 15.40-16.00

Investigation on the Microstructure Evolution of Inconel 718 Manufactured by Laser Powder Bed Fusion After Heat Treatments

Beyza BİLGİLER¹, Akay NEVCANOĞLU², Hamit Özkan GÜLSOY²

• ¹SENTES-BİR, ²MARMARA UNIVERSITY
Türkiye

☀ 16.00-16.20

Effect of Post Processing Heat Treatments on the Microstructure and Creep Properties of Additively Manufactured IN718

Merve CANBOLAT¹, Müge AKDEMİR², Neslihan TAMSÜ SELLİ¹, Hüseyin AYDIN³

• ¹GEBZE TECHNICAL UNIVERSITY, ²İSTANBUL TECHNICAL UNIVERSITY, ³TUBİTAK MRC
Türkiye

☀ 16.20-16.40

Low Cycle Fatigue Behavior and Numerical Evaluation of IN939 Superalloy

Fatih GÜLER¹, Enver Bülent YALÇIN¹, Hüseyin AYDIN¹, Özgül KELEŞ²

• ¹TUBİTAK MAM, ²İSTANBUL TECHNICAL UNIVERSITY
Türkiye



CMTS

CARBON MITIGATION TECHNOLOGIES SYMPOSIUM

KARBON AZALTMA
TEKNOLOJİLERİ SEMPOZYUMU



CMTS

SESSION 3

Session Chairman / Oturum Başkanı:

Ahmet TURAN • YEDİTEPE UNIVERSITY

🕒 16.50-17.20

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Adsorbents from Lignite Fly Ash Capturing Heavy Metals and CO₂

Sergei PREIS

• TALLINN UNIVERSITY OF TECHNOLOGY
Estonia

🕒 17.20-17.40

Thermochemical Simulations for the Combustion Synthesis of Li₄SiO₄ Powders as Carbon Capture Sorbent

Kağan BENZEŞİK, Onuralp YÜCEL

• İSTANBUL TECHNICAL UNIVERSITY
Türkiye

🕒 17.40-18.00

Techno-Economic Analysis of the Post-Combustion Carbon Capture in Primary Aluminium Production

**İlayda ÖZBAĞ TOĞAÇAR¹, Umay ÇINARLI¹, Ahmet TURAN¹,
Monika VITVAROVA², Shareq MOHD NAZIR³**

• ¹YEDİTEPE UNIVERSITY, ²UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE, ³KTH ROYAL INSTITUTE OF TECHNOLOGY
Türkiye, Czech Republic, Sweden



RECYCLING AND SUSTAINABILITY SYMPOSIUM

GERİ DÖNÜŞÜM VE
SÜRDÜRÜLEBİLİRLİK
SEMPOZYUMU



RSS

SESSION 1

Session Chairman / Oturum Başkanı:

M. Şeref SÖNMEZ • İSTANBUL TECHNICAL UNIVERSITY

🕒 13.30-14.00

INVITED SPEAKER/ DAVETLİ KONUŞMACI

A Global Decarbonization Strategic Roadmap for the Magnesium Industry

Martin TAUBER

• INTERNATIONAL MAGNESIUM ASSOCIATION
Belgium

🕒 14.00-14.20

Exploring the Potential of Aluminium Black Dross as an Efficient Resource for Alumina and Alumina-Based Compounds

İlayda ÖZBAĞ TOĞAÇAR¹, Umay ÇINARLI¹, Arif KARACA², Ahmet TURAN¹

• ¹YEDİTEPE UNIVERSITY, ²ETİ ALÜMİNYUM
Türkiye

🕒 14.20-14.40

Assessment of Recycling Yield and Characterization of Aluminium Fraction in MSWI Bottom Ash

Utku HATİPOĞLU, Olcay KIVRAK, Elif BAZOĞLU, Zeynep Su ÇİZEN, Mertol GÖKELMA

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

🕒 14.40-15.00

Investigation of High Efficiency Recycling Conditions of Spent Lithium-Ion Batteries Using Deep Eutectic Solvent

Elif GÜLOĞLU, Mert ZORAĞA, Gökhan ORHAN

• İSTANBUL UNIVERSITY-CERRAHPAŞA
Türkiye

RSS

SESSION 2

Session Chairman / Oturum Başkanı:

Fabian DIAZ • RWTH AACHEN UNIVERSITY

🕒 15.10-15.30

Effect of Management Systems on Corporate Sustainability

Murat Can OCAKTAN

• TMMOB METALURJİ VE MALZEME MÜHENDİSLERİ ODASI
Türkiye

🕒 15.30-15.50

Fabrication of Ti6Al4V Spherical Powders for Additive Manufacturing from Recycled Shavings

Zeynep EGE UYSAL^{1,2}, Sertaç ALTINOK^{1,2}, Eren KALAY², Tayfur ÖZTÜRK²

• ¹TUSAŞ-TÜRK HAVACILIK UZAY SANAYİİ, ²MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 15.50-16.10

Recovery of Metal Oxides from Electric Arc Furnace Dust and Their Utilization as an Energy Storage Application

Ozan AYDIN¹, İrem CEMRE TÜRÜ², Koray BAHADIR DÖNMEZ³, Metin GENÇTEN¹, Burak BİROL¹

• ¹YILDIZ TECHNICAL UNIVERSITY, ²ADIYAMAN UNIVERSITY, ³SABANCI UNIVERSITY
Türkiye

🕒 16.10-16.30

Decarbonized Titanium Recovery from Mining and Production Residues

Bengi YAĞMURLU

• TU CLAUSTHAL
Germany



RSS

SESSION 3

Session Chairman / Oturum Başkanı:

Mertol GÖKELMA • İZMİR INSTITUTE OF TECHNOLOGY

🕒 16.50-17.10

The Importance of Green Transport in These Days, Time for Hydrogen Bus

**Songül KILINÇ, Ferhat AĞAÇ, Samet Onur EMİR,
Nurşah Kübra EKMEKÇİ**

• GÜLERYÜZ R&D CENTER - Türkiye

🕒 17.10-17.30

Investigation of the Effect of Thermo-Mechanical Processing Orientation on the Final Material Performance in 6XXX Aluminium Alloys Produced with High Recycling Rates

**Zeynep Tutku ÖZEN, İrem Yaren SİYAH, İlyas Artunç SARI,
Melih ÇAYLAK, Görkem ÖZÇELİK, Burak KARDEŞLER, İbrahim BAT**

• ASAŞ ALÜMİNYUM - Türkiye

🕒 17.30-17.50

Investigation of the Effect of the Increasing the Recycling Rate on the Mechanical Properties of 6082 and 6063 Alloys for Low Carbon Footprint in the Automotive Industry

**İrem Yaren SİYAH, Zeynep Tutku ÖZEN, İlyas Artunç SARI, İbrahim BAT,
Melih ÇAYLAK, Görkem ÖZÇELİK**

• ASAŞ ALÜMİNYUM - Türkiye

🕒 17.50-18.10

Recovery of Nickel from Ni-Ti Alloys to Use as Electrode Materials in Supercapacitors

Berk ÇOBAN¹, Mert ZORAĞA², Burak BİROL¹, Metin GENÇTEN¹

• ¹YILDIZ TECHNICAL UNIVERSITY, ²İSTANBUL UNIVERSITY-CERRAHPAŞA
Türkiye



STEEL SYMPOSIUM

ÇELİK SEMPOZYUMU



STS

SESSION 1

Session Chairman / Oturum Başkanı:

Arcan DERİCİOĞLU • MIDDLE EAST TECHNICAL UNIVERSITY

🕒 10.00-10.30

Carbon Neutral Metals and Fossil-Free Steel – Research Towards Sustainability at the University of Oulu

Henri PAUNA

• OULU UNIVERSITY
Finland

🕒 10.30-10.50

Innovation of Materials in the Industrialization and Our Future

Levent ÖZMEN

• MEF UNIVERSITY
Türkiye

🕒 10.50-11.10

Decarbonization Process: Change of EAF Steel Production Processes in the Transition Towards Sustainable Steel Production

Uğur CENGİZ, Muammer BİLGİÇ

• BİLECİK DEMİR ÇELİK
Türkiye

STS

SESSION 2

Session Chairman / Oturum Başkanı:

Ender KESKİNKILIÇ • ATILIM UNIVERSITY

🕒 **11.20-11.40**

A Different Perspective on Carbon & Oxygen Balance (CxO) in the EAF Process

Uğur CENGİZ, Muammer BİLGİÇ

• BİLECİK DEMİR ÇELİK

Türkiye

🕒 **11.40-12.00**

The Effect of the Drawing Speed on the Mechanical Properties and Production Speed of High Carbon Steel Wires in the Wire Drawing Process

Tuba ÖZEREN, Murat POLAT, Büşra ÇETİNKAYA, Mustafa Çağrı UYANIK, Rıza KÖSELER

• ÇELİK HALAT VE TEL

Türkiye

🕒 **12.00-12.20**

Background of Continuous Casting Billet Defects: Formation Mechanisms and Fast & Effective Detection with 5 Whys Method

Uğur CENGİZ

• BİLECİK DEMİR ÇELİK

Türkiye



STS

SESSION 3

Session Chairman / Oturum Başkanı:

Hasan AVDUSINOVIC • UNIVERSITY OF ZENICA

🕒 13.30-13.50

Integration Between Consteel EAF and Consteerer EMS: The Intelligence-Driven Sustainable and Flexible Solution for Steel Production Chosen by Haşçelik

Andrea GRASELLI¹, Davide MASOERO¹, Adnan Naci FAYDASIÇOK²

• ¹TENOVA S.P.A., ²HASÇELİK

Italy, Türkiye

🕒 13.50-14.10

Autonomous Maintenance on Railway Vehicles Used in Iron and Steel Factories

Yusuf BOZKURT, Hasan BULUT

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

🕒 14.10-14.30

Improvement of Steel Skid Design and Quality in Pusher Type Reheating Furnace

Aysun IŞIKGÜL, Ali Yağız ŞAHİN, Bengü AKIN, İrem Nur SARIKAYA, Semih DOĞAN, S. Tuğrul İMER

• KARDEMİR

Türkiye

🕒 14.30-14.50

Special Equipment Management and Sustainability for the Iron Steel Industry

Barış KÜPELİ, Kaan AKBAY, Muhammed AKKUŞ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye



STS

SESSION 4

Session Chairman / Oturum Başkanı:

Muammer BİLGİÇ • BİLECİK DEMİR ÇELİK

🕒 **15.10-15.30**

Detection of Rhomboidity Defect Using Image Processing Technology

İlker AYÇİÇEK, Murat SARIOĞLU, Serdar GÜNBAY, Hikmet ŞAHİN, Esra KÜPELİ, Serkan DURSUN

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

🕒 **15.30-15.50**

Feeding AI with Thermochemical Data for Sustainable Steel Production

Ömer Kerim BÜYÜKUSLU, Florian TANG, Moritz to BABEN

• GTT-TECHNOLOGIES

Germany

🕒 **15.50-16.10**

Tenova's Intelligent Approach to EAF Steelmaking Optimization: The iEAF

Armando VAZQUEZ¹, Davide MASOERO²

• ¹TENOVA GOODFELLOW INC, ²TENOVA S.P.A.

Italy, Canada

🕒 **16.10-16.30**

Automatic Steel and Slag Optimization

Ufuk ATEŞ¹, Tamer SARAÇ¹, Erhan YENİAY², Şahin SOYTÜRK²

• ¹ATS METALURJİ, ²HESLINE

Türkiye



STS

SESSION 5

Session Chairman / Oturum Başkanı:

Kemal DAVUT • İZMİR INSTITUTE OF TECHNOLOGY

🕒 16.50-17.10

The Effect of Heat Treatment Parameters on the Mechanical Properties of a High Strength Low Alloy Steel Developed

**Ece Naz YURTSEVEN^{1,2}, Bahadır TÜRKYAMAN¹,
M. Kaan PEHLİVANOĞLU¹, N. Kaan ÇALIŞKAN¹**

• ¹TÜBİTAK SAGE, ²MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 17.10-17.30

Fe–B Cast Steels with Various Nickel Content: Microstructural – Tribological Properties and Corrosion Resistance

Eren ÇELİKSES¹, Merve AKSOY², Berk ŞENYURT², Nazlı AKÇAMLI²

• ¹BORÇELİK STEEL INDUSTRY, ²BURSA TECHNICAL UNIVERSITY
Türkiye

🕒 17.30-17.50

High-Temperature Oxidation Behaviour of a Weathering Steel

Fikri Erdem ŞEŞEN

• UNIVERSITY OF KIRIKKALE
Türkiye



ENERGY MATERIALS SYMPOSIUM

ENERJİ MALZEMELERİ
SEMPOZYUMU



20 SEPTEMBER 2024 FRIDAY

20 EYLÜL 2024 CUMA

HALL 6

BLUE HALL / MAVİ SALON



EMS

SESSION 1

Session Chairman / Oturum Başkanı:

Nilgün KARATEPE YAVUZ • İSTANBUL TECHNICAL UNIVERSITY

🕒 10.00-10.20

Plasma Surface Functionalisation of Carbon and Glass Fibres for High Performance Composites for Wind Turbine Applications

Xueqi ZHU, Xiaoying LI, Behnam DASHTBOZORG, Hanshan DONG

• UNIVERSITY OF BIRMINGHAM

United Kingdom

🕒 10.20-10.40

High-Pressure Columbite TiO_2 as an Active Catalyst for Simultaneous Photocatalytic Plastic Waste Conversion and Hydrogen Production

Thanh Tam NGUYEN, Kaveh EDALATI

• KYUSHU UNIVERSITY

Japan

🕒 10.40-11.00

What Makes Ions Hardly Stick on Neutral Graphene

Taner AKBAY

• YEDİTEPE UNIVERSITY

Türkiye



EMS

SESSION 2

Session Chairman / Oturum Başkanı:

Taner AKBAY • YEDİTEPE UNIVERSITY

🕒 **11.20-11.50**

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Proton-Conducting Solid Oxides for Hydrogen Energy System

Hiroshige MATSUMOTO

• KYUSHU UNIVERSITY

Japan

🕒 **11.50-12.10**

Impact of Interphase Boundaries on the Properties of High-Entropy Alloys for Solid-State Hydrogen Storage

Shivam DANGWAL, Kaveh EDALATI

• KYUSHU UNIVERSITY

Japan

🕒 **12.10-12.30**

Development of a High Entropy Oxide for Photocatalytic Water Splitting and CO₂ Conversion

Jacqueline HIDALGO-JIMÉNEZ¹, Taner AKBAY², Xavier SAUVAGE³, Lambert van EIJCK⁴, Jacques HUOT⁵, Tatsumi ISHIHARA¹, Kaveh EDALATI¹

• ¹KYUSHU UNIVERSITY, ²YEDITEPE UNIVERSITY, ³UNIVERSITY OF ROUEN NORMANDIE, ⁴DELFT UNIVERSITY OF TECHNOLOGY, ⁵UNIVERSITÉ DU QUÉBEC À TROIS-RIVIÈRES

Japan, Türkiye, France, Netherlands, Canada



EMS

SESSION 3

Session Chairman / Oturum Başkanı:

B. Deniz KARAHAN • İSTANBUL TECHNICAL UNIVERSITY

🕒 13.30-14.00

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Physical Vapor Deposition for Enhanced Lithium Ion Battery Interface Performance

Jones ALAMI

• MOHAMMED VI POLYTECHNIC UNIVERSITY
Morocco

🕒 14.00-14.20

Valorization of Electroplating Sludge as Anode Active Material for Lithium-Ion Batteries

Humza AHSRAF¹, B. Deniz KARAHAN²

• ¹İSTANBUL MEDIPOL UNIVERSITY, ²İSTANBUL TECHNICAL UNIVERSITY
Türkiye

🕒 14.20-14.40

Synthesis of MnO₂ Based Cathode Materials for Rechargeable Zn/MnO₂ Batteries

A. Engin SERİN, N. Özgür DARICIOĞLU, Tayfur ÖZTÜRK

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 14.40-15.00

Production of Encapsulated Zinc Anode Powder for Rechargeable Alkaline Batteries

Gamze M. DAĞDELEN¹, A. Engin SERİN², N. Özgür DARICIOĞLU², Tayfur ÖZTÜRK^{2,3}

• ¹ANKARA UNIVERSITY, ²MIDDLE EAST TECHNICAL UNIVERSITY,
³INNOVASCOPE MATERIAL TECHNOLOGIES
Türkiye



EMS

SESSION 4

Session Chairman / Oturum Başkanı:

Taner AKBAY • YEDİTEPE UNIVERSITY

15.10-15.30

Fundamental Physical Parameter Fitting via Non-Linear Temperature-Dependent Impedance Spectroscopy

Fazlı Eren CİVAN, Gökberk KATIRCI, Burak ÜLGÜT

• BİLKENT UNIVERSITY

Türkiye

15.30-15.50

Electrochemical Impedance Spectroscopy and Current Interruption Tests for Following the Material's Reasons for Battery State-of-Health Decay

Rezan Ezgi SEVGİN, Burak ÜLGÜT

• BİLKENT UNIVERSITY

Türkiye

15.50-16.10

The Solvothermal Synthesis of Tungsten Suboxide Based Nanomaterials and Investigation of Their Electrochemical Properties for Supercapacitors

Aslı DÖRTLER KESİCİ, Cem KAHRUMAN

• BURSA TECHNICAL UNIVERSITY

Türkiye



EMS

SESSION 5

Session Chairman / Oturum Başkanı:

Gökçe HAPÇI AĞAOĞLU • İSTANBUL UNIVERSITY-CERRAHPASA

🕒 16.50-17.10

Understanding the Structure-Property Relationship in ZnO Nanowall Arrays to Maximize Energy Harvesting Performance

Gamze YÜKSEL¹, Aydın Süleyman GÜZEL², Yusuf ÖZTÜRK², Ender SUVACI¹

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²TUBITAK MAM
Türkiye

🕒 17.10-17.30

Development of BaTiO₃ Piezoelectric Nanowire Based Energy Harvester Towards Wearable Electronics

**Sakhavat DADASHOV¹, Buse MUSLU KOP¹, Beytullah GÖL²,
Seval KINDEN¹, Ender SUVACI¹**

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²KAHRAMANMARAŞ SÜTÇÜ İMAM
UNIVERSITY
Türkiye

🕒 17.30-17.50

Effects of ESD Coating Test Conditions on the Deposition of New SOFC Cathode Materials

Emre ERĞEN, Sedat AKKURT

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

🕒 17.50-18.10

Electrochemical Properties of Polyacrylo-Nitrile-Based Lithium-Ion Conducting Quasi-Solid-State Electrolytes

Sabiha Ezgi KAYA, Ömer EROĞLU, Nilgün KARATEPE YAVUZ

• İSTANBUL TECHNICAL UNIVERSITY
Türkiye



CERAMICS, GLASS, REFRACTORY MATERIALS SYMPOSIUM

SERAMİK, CAM, REFRAKTER
MALZEMLERİ SEMPOZYUMU



CGRS

SESSION 1

Session Chairman / Oturum Başkanı:

Çekdar Vakıf AHMETOĞLU • İZMİR INSTITUTE OF TECHNOLOGY

🕒 10.00-10.20

Production of Alkali Barium Glasses for Hermetic Applications

**Tutku TURGUTLUGİL GÖKÇE^{1,2}, M. Kaan PEHLİVANOĞLU¹,
N. Kaan ÇALIŞKAN¹, Abdullah ÖZTÜRK²**

• ¹TUBITAK SAGE, ²MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 10.20-10.40

Polymer Derived Ceramic Foam/Aerogel Hybrid Materials

Öykü İÇİN, Çekdar Vakıf AHMETOĞLU

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

🕒 10.40-11.00

Production of Porous Aluminosilicate Ceramics by Freeze-Drying

Tuğçe ÖZMEN, Sedat AKKURT

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye



CGRS

SESSION 2

Session Chairman / Oturum Başkanı:

Ender SUVACI • ESKİŞEHİR TECHNICAL UNIVERSITY

⌘ 11.20-11.50

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Rapid Firing of 3YSZ: Impact of the Heating Rate on Sintering, Properties and Microstructure

Mattia BIESUZ

• UNIVERSITY OF TRENTO
Italy

⌘ 11.50-12.10

Reactive Ultrafast High-Temperature Sintering of Yttria-Stabilized Zirconia in Nitrogen Atmosphere

Levent KARACASULU^{1,3}, Thomas Hérissou de BEAUVOIR², Emanuele De BONA³, Michele CASSETTA³, Cekdar Vakıf AHMETOĞLU¹, Vincenzo M. SGLAVO³, Mauro BORTOLOTTI³, Charles MANIÈRE⁴, Claude ESTOURNÉS¹, Mattia BIESUZ³

• ¹İZMİR INSTITUTE OF TECHNOLOGY, ²UNIVERSITÉ TOULOUSE, ³UNIVERSITY OF TRENTO, ⁴NORMANDIE UNIVERSITY
Türkiye, France, Italy

⌘ 12.10-12.30

Determination of the Performance of B4C-SiC-TiC Composite by Sintering with Pressureless SPS Technique

Ahmet Furkan BULUÇ^{1,2}, Servet TURAN^{1,2}

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²MDA ADVANCED CERAMICS
Türkiye

⌘ 12.30-12.50

Improving Mechanical Properties of Al₂O₃-TiC-ZrO₂ (ATZ) Composites by Gas Pressure Sintering

Ahmet Oğuzhan TURHAN¹, Alpagut KARA^{1,2}

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²MDA ADVANCED CERAMICS
Türkiye



CGRS

SESSION 3

Session Chairman / Oturum Başkanı:

Katalin BALÁZSI • HUNGARIAN RESEARCH NETWORK

🕒 13.30-13.50

Calcium Borate Synthesis by Solid State Reactions

İremnur AKÇAKOCA, Gülsüm TOPATEŞ

• ANKARA YILDIRIM BEYAZIT UNIVERSITY
Türkiye

🕒 13.50-14.10

Understanding the Effect of Diffusion on the Phase Formation of $Ba_xSr_{1-x}TiO_3$ (BST) Ceramics

Başar SÜER, Özlem AYDIN ÇİVİ, Arcan F. DERİCİOĞLU

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 14.10-14.30

Enhancement of Piezoelectric and Energy Storage Properties of an Ergodic Relaxor Ceramic by Mn Doping

Merve KARAKAYA, Umut ADEM

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

🕒 14.30-14.50

Investigation of Effects of Wollastonite Addition on Physical and Mechanical Properties of Wall Tile

Saadet GÜLER¹, Uğur Can ÖZÖĞÜT², Tolga TAVŞANOĞLU²

• ¹İZMİR KATİP ÇELEBİ UNIVERSITY, ²MUĞLA SITKI KOCMAN UNIVERSITY
Türkiye



CGRS

SESSION 4

Session Chairman / Oturum Başkanı:

Filiz ÇINAR ŞAHİN • İSTANBUL TECHNICAL UNIVERSITY

🕒 **15.10-15.30**

Investigation of the GNP and BN Additions on the Microstructure and Mechanical Properties of TiB_2 -TiC Composites

Beste Ecem KAYAR, İpek AKIN KARADAYI

• İSTANBUL TECHNICAL UNIVERSITY
Türkiye

🕒 **15.30-15.50**

Development of β -SiAlON/12H Composite for the Machining of Superalloys

Gökhan KULA¹, Ferhat KARA^{1,2}

• ¹MDA ADVANCED CERAMICS, ²ESKİŞEHİR TECHNICAL UNIVERSITY
Türkiye

🕒 **15.50-16.10**

Calcination of Electron Emitting Materials Used in the Cathode at Different Times and Temperatures

**İrem Nur USLU¹, Ezgi ŞAHİN², Nergis Yıldız ATMACA²,
Batuhan SORUŞBAY¹, Hamit Özkan GÜLSOY¹, Okan Mert YÜCEDAĞ²**

• ¹MARMARA UNIVERSITY, ²TUBITAK BİLGEM-KAMTAM
Türkiye

🕒 **16.10-16.30**

Mechanical Activation Assisted Synthesis and Characterization of Ti_3AlC_2 MAX Phase

Berk ŞENYURT^{1,2}, Nazlı AKÇAMLI¹, Duygu AĞAOĞULLARI²

• ¹BURSA TECHNICAL UNIVERSITY, ²İSTANBUL TECHNICAL UNIVERSITY
Türkiye





CWS

CORROSION AND WEAR SYMPOSIUM

KOROZYON VE AŞINMA
SEMPOZYUMU

CWS

SESSION 5

Session Chairman / Oturum Başkanı:

Fatih TOPTAN • İZMİR INSTITUTE OF TECHNOLOGY

🕒 16.50-17.20

INVITED SPEAKER/ DAVETLİ KONUŞMACI

AI Approaches for Finding Efficient Corrosion Inhibitors

Mikhail ZHELUDKEVICH

• HELMHOLTZ-ZENTRUM HEREON
Germany

🕒 17.20-17.40

Corrosion Rate Comparison of Direct and Twin Roll Casted AA 5754 Alloy Welded Sheets with AA4043 Filler Metals Using by MIG Welding Technique

Hüseyin MÜŞTAK¹, Uğur ŞEN²

• ¹ASAŞ ALÜMİNYUM, ²SAKARYA UNIVERSITY
Türkiye

🕒 17.40-18.00

Improving Corrosion Resistance of TZM Molybdenum Alloy through Silicide Coating in Molten Salt Solutions

**Seda KARTAL¹, İshak Emre ÖMÜR², Tansu GÖYNÜK³,
Metehan ERDOĞAN⁴, İshak KARAKAYA¹**

• ¹MIDDLE EAST TECHNICAL UNIVERSITY, ²TUSAŞ ENGINE INDUSTRY,
³ROKETSAN, ⁴ANKARA YILDIRIM BEYAZIT UNIVERSITY
Türkiye

🕒 18.00-18.20

Tribocorrosion-Resistant Titanium-Based Implant Surfaces with Smart Antimicrobial Properties

Ezgi OĞUR¹, Aziz GENÇ², Fatih TOPTAN¹

• ¹İZMİR INSTITUTE OF TECHNOLOGY, ²CARDIFF UNIVERSITY
Türkiye, United Kingdom





NFMS

NON-FERROUS METALS SYMPOSIUM

DEMİR DIŐI METALLER
SEMPOZYUMU

NFMS

SESSION 1

Session Chairman / Oturum Başkanı:

Hong VU • UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE

🕒 **10.00-10.20**

Investigation of the Binding Effect on the Strength of Cold-Hardening Chromium Pellets

**Hande ARDIÇOĞLU¹, Burak BİROL¹, Mustafa BOYRAZLI²,
Mustafa SÜNER², Gökhan BAŞMAN³**

• ¹YILDIZ TECHNICAL UNIVERSITY, ²FIRAT UNIVERSITY, ³ETİ KROM
Türkiye

🕒 **10.20-10.40**

Extracting Alumina from Diasporic Bauxite Ore

**İlayda ÖZBAĞ TOĞAÇAR¹, Umay ÇINARLI¹, Meral BAYGUL²,
Ahmet TURAN¹**

• ¹YEDİTEPE UNIVERSITY, ²ETİ ALÜMİNYUM
Türkiye

🕒 **10.40-11.00**

Prospects of Extracting Nickel from Low-Grade Ultramafic Nickel Ores

**Mansoor BARATI¹, Fanmao WANG¹, Samuel MARCUSON¹,
Mike WALKER², Manqiu XU²**

• ¹UNIVERSITY OF TORONTO, ²VALE BASE METALS TECHNOLOGY
DEVELOPMENT CENTER
Canada



NFMS

SESSION 2

Session Chairman / Oturum Başkanı:

Metin USTA • GEBZE TECHNICAL UNIVERSITY

🕒 11.20-11.40

Chemical Grain Refinement of 1XXX Series Aluminum Alloys

Mustafa TOKYÜREK^{1,2}, Kerem Altuğ GÜLER², Süleyman Can KURNAZ³, Samet SEVİNÇ¹

• ¹ASAŞ ALÜMİNYUM, ²YILDIZ TECHNICAL UNIVERSITY, ³SAKARYA UNIVERSITY
Türkiye

🕒 11.40-12.00

Microstructural Characterization of CoCrCuFeNi High-Entropy Alloy

Ş. Hakan ATAPEK¹, Mehmet AKKAŞ², Gülşah AKTAŞ ÇELİK¹, Fatma Betül YILMAZ GÜLER¹,

• ¹KOCAELİ UNIVERSITY, ²KASTAMONU UNIVERSITY
Türkiye

🕒 12.00-12.20

Effect of Quench-Induced Precipitation on Microstructure of EN AW 6082 Aluminium Alloy

Aleyna GÜMÜŞSOY^{1,2}, Emrah Fahri ÖZDOĞRU², Elif UZUN KART¹

• ¹MARMARA UNIVERSITY, ²TRİ METALURJİ
Türkiye

🕒 12.20-12.40

Effects of Air and Water Cooling During Press Quenching of 6063 Aluminium Alloys in the Extrusion Process

Burak KARDEŞLER, İlyas Artunç SARI, Alptuğ TANSES, Batuhan Emre YANIK, Görkem ÖZÇELİK, İbrahim BAT

• ASAŞ ALÜMİNYUM
Türkiye



NFMS

SESSION 3

Session Chairman / Oturum Başkanı:

Çağlar YÜKSEL • MARMARA UNIVERSITY

🕒 **13.30-14.00**

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Lightweight Materials and Sustainable Manufacturing: The Role of Integrated Computational Materials Engineering (ICME)

Alan LUO

• OHIO STATE UNIVERSITY
USA

🕒 **14.00-14.20**

Assesment of the Mechanical Properties of Sand Cast Aluminum Magnesium Copper Alloy and Modeling of its Behavior by Continuum Mechanics Approach

Armağan GÜL^{1,2}, Derya DIŞPINAR³, Özgür ASLAN⁴

• ¹OYAK RENAULT, ²ISTANBUL TECHNICAL UNIVERSITY, ³FOSECO, ⁴ATILIM UNIVERSITY
Türkiye

🕒 **14.20-14.40**

Deep-Sea Mining for Green-Metals: Oppurtunities and Threats

Fevzi YILMAZ, Haşim ÇAYIR

• FATİH SULTAN MEHMET VAKIF UNIVERSITY
Türkiye



NFMS

SESSION 4

Session Chairman / Oturum Başkanı:

Esra DOKUMACI ALKAN • DOKUZ EYLÜL UNIVERSITY

15.10-15.30

The Effect of Flux Type on Regression Output in the Relationship between Bifilm and Density Index in A356 Alloy

Sebihe Yağmur DİNÇ, Batuhan DOĞDU, Caner KALENDER

• CMS JANT VE MAKİNA SANAYİ
Türkiye

15.30-15.50

Achieving Grain Refinement in $\text{Cu}_2\text{Ni}_2\text{AlTi}$ High Entropy Alloy by Rapid Solidification

Dilan İŞILDAK, Gökhan POLAT

• İZMİR KATİP ÇELEBİ UNIVERSITY
Türkiye

15.50-16.10

Production of GdSmHoErYb Rare Earth High Entropy Alloy with Mechanical Alloying Method

Ömer GÜLER, Nihal YAYLA, Seval Hale GÜLER

• MUNZUR UNIVERSITY
Türkiye

16.10-16.30

Effects of Al Content on the Properties of Spark Plasma Sintered $\text{WMoNbVA}x$ ($x=0.25, 0.5, 0.75, 1$) Refractory High Entropy Alloys

Erman YAMAN, Duygu AĞAOĞULLARI, M. Lütfi ÖVEÇOĞLU

• İSTANBUL TECHNICAL UNIVERSITY
Türkiye



NFMS

SESSION 5

Session Chairman / Oturum Başkanı:

Murat ALKAN • DOKUZ EYLÜL UNIVERSITY

🕒 16.50-17.10

Selective Separation of Lanthanum Using Dehpa: Investigating the Potential of Extracting Rare Earth Elements from Eskisehir Beylikova Ores

**Melike TUNÇ^{1,2}, Utku Orçun GEZİCİ¹, Osman Can ÖZER^{1,2},
Mehtap ARSLAN KABA¹, Belma SOYDAŞ SÖZER²,
Güldem KARTAL ŞİRELİ¹, Servet TİMUR¹**

• ¹İSTANBUL TECHNICAL UNIVERSITY, ²TENMAK, NATEN
Türkiye

🕒 17.10-17.30

Assessing the Cyanex 272 and Binary Extractants for the Separation of Praseodymium and Neodymium in Extraction of Eskişehir – Beylikova Rare Earth Ores

**Utku Orçun GEZİCİ¹, Esra BAŞTÜRKÜ¹, Mehtap ARSLAN KABA¹,
Selim ERTÜRK¹, Belma SOYDAŞ SÖZER², Güldem KARTAL ŞİRELİ¹,
Servet TİMUR¹**

• ¹İSTANBUL TECHNICAL UNIVERSITY, ²TENMAK-NATEN
Türkiye

🕒 17.30-17.50

Production of Metallic Lanthanum from Its Oxide Form via Molten Salt Electrolysis

**Osman Can ÖZER¹, Mehtap ARSLAN KABA², Güldem KARTAL ŞİRELİ²,
Belma SOYDAŞ SÖZER¹, Servet İ. TİMUR²**

• ¹TENMAK, NATEN, ²İSTANBUL TECHNICAL UNIVERSITY
Türkiye





NANOMATERIALS SYMPOSIUM

NANOMALZEMELER SEMPOZYUMU

NMS

SESSION 1

Session Chairman / Oturum Başkanı:

H. Emrah ÜNALAN • MIDDLE EAST TECHNICAL UNIVERSITY

🕒 **10.00-10.20**

The Effect of Manganese and Cobalt Doped and Co-Doped on Structural, Optical and Photocatalytic Properties of Zinc Stannate ($\text{Zn}_2\text{Sn}_4\text{O}$, ZTO) Nanoparticles

Mehedi HASAN, Özlem ALTINTAŞ YILDIRIM

• KONYA TECHNICAL UNIVERSITY

Türkiye

🕒 **10.20-10.40**

Development of Ammonium Salt-Modified Polymeric Gel Precursors for Controlled Synthesis of BN- B_4C Nanocomposites

Suna AVCIOĞLU¹, Murat Cem DURMAZ¹, Ali ÇELİK², Alpogut KARA², Figen KAYA¹, Cengiz KAYA¹

• ¹YILDIZ TECHNICAL UNIVERSITY, ²ESKİŞEHİR TECHNICAL UNIVERSITY

Türkiye

🕒 **10.40-11.00**

Role of Machine Learning in Optimized Nanomaterials Synthesis

Zahra R. NAVAZI

• YEDİTEPE UNIVERSITY

Türkiye



NMS

SESSION 2

Session Chairman / Oturum Başkanı:

Figen KAYA • YILDIZ TECHNICAL UNIVERSITY

🕒 11.20-11.40

Synthesis and Photothermal Applications of Liquid Metal-Driven Core-Shell Bismuth-Tin Particles

Doğu ŞEYDA, Orçun DİNÇER, Duygu İNCE, Murathan ÇUĞUNLULAR, Hüsnü Emrah ÜNALAN, Simge ÇINAR-AYGÜN

• MIDDLE EAST TECHNICAL UNIVERSITY

Türkiye

🕒 11.40-12.00

Synthesis of 2D Titanium Carbide (Ti₃C₂T_x MXene) by Selective Etching

Paşa YAMAN, Bedri Onur KÜÇÜKYILDIRIM

• YILDIZ TECHNICAL UNIVERSITY

Türkiye

🕒 12.00-12.20

Investigating Surface Texture for Enhanced Sensitivity in Screen-Printed Pressure Sensor Arrays

Hatice GÖKDEMİR, Mehmet KONYAR, Fuat AKDEMİR, M. İlker YILMAZ

• KORDSA TEKNİK TEKSTİL

Türkiye

🕒 12.20-12.40

Investigating the Use of Nanofibers Doped with h-BN at Various Ratios as Electrode Materials in Supercapacitors and Their Performance

Serkan KILIÇTEK¹, Figen KAYA², Cengiz KAYA², Suna AVCIOĞLU²

• ¹İSTANBUL AYDIN UNIVERSITY, ²YILDIZ TECHNICAL UNIVERSITY

Türkiye



BIOMATERIALS SYMPOSIUM

BİYOMALZEMELER SEMPOZYUMU



BMS

SESSION 3

Session Chairman / Oturum Başkanı:

İpek AKIN KARADAYI • İSTANBUL TECHNICAL UNIVERSITY

🕒 13.30-14.00

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Surface Bioactivation of Metallic Biomaterials Thru Electrochemical Techniques

Cosmin M. COTRUT

• NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA
BUCHAREST
Romania

🕒 14.00-14.20

Antibacterial Silk Fibroin/Carbon Nanofiber Composites for Wound Dressing

Gizem KARAASLAN, Yiğithan TUFAN, Batur ERCAN

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

🕒 14.20-14.40

Synthesis and Characterization of Organic Solvent and Crosslinker Free Drug Carrier Nanomaterials

SümeYra Çiğdem SÖZER DEMİRDAŞ, Yaşar AKDOĞAN

• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

🕒 14.40-15.00

Additive Manufacturing of Cr-Co Alloys via Laser-Powder Bed Fusion: Detailed Microstructural, Mechanical, and Electrochemical Characterization

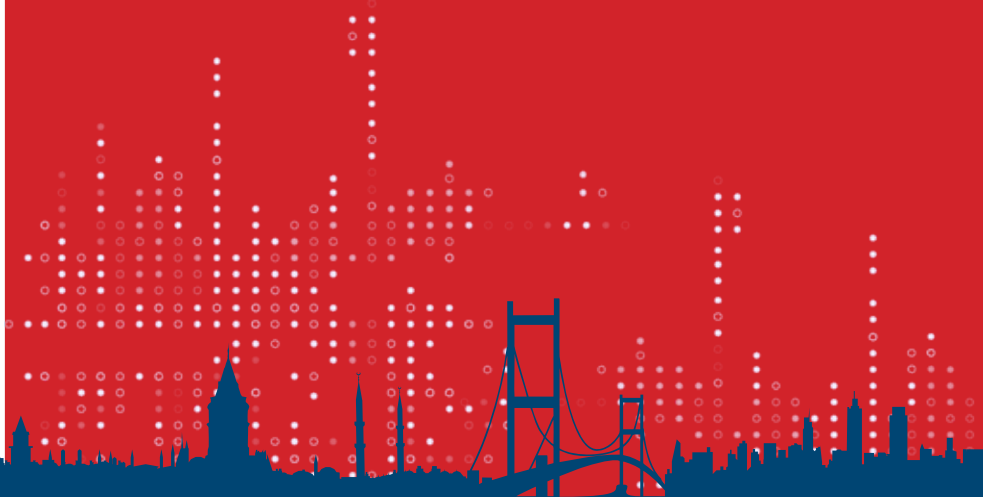
Olçay ÖZCAN, Batuhan SORUŞBAY, H. Özkan GÜLSOY

• MARMARA UNIVERSITY
Türkiye



WELDING AND NON-DESTRUCTIVE TESTING SYMPOSIUM

KAYNAK VE TAHRİBATSIZ MUAYENE
SEMPOZYUMU



WNTS

SESSION 4

Session Chairman / Oturum Başkanı:

Emel TABAN • KOCAELİ UNIVERSITY

🕒 15.20-15.50

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Non-Destructive Testing of Components Produced via Wire-Arc Additive Manufacturing

C. Hakan GÜR

• MIDDLE EAST TECHNICAL UNIVERSITY

Türkiye

🕒 15.50-16.20

INVITED SPEAKER/ DAVETLİ KONUŞMACI

A New Way of Transportation: Hyperloop-Large Diameter Hyperloop Tubes Mass Production

Mehmet ÖRGEN, Mahmut GEL

• ERCİYAS HOLDİNG

Türkiye

🕒 16.20-16.40

Effects of Backing Gas Characteristics and Sensitization Heat Treatment Parameters on Intergranular Corrosion Behavior of 304L Grade Stainless Steel Pipe Welding

Tanıl ATICI, Metin Efe TÜMER, Necati Furkan ŞAHİN, Burak AKÇALIOĞLU

• ÇİMTAŞ ÇELİK

Türkiye

🕒 16.40-17.00

Laser Welding of Aluminum to Copper: Properties of the Welded Joints and Optimization of Parameters

Fatih ŞAHİN, Emel TABAN

• KOCAELİ UNIVERSITY

Türkiye



FAILURE ANALYSIS AND HEAT TREATMENT SYMPOSIUM

HASAR ANALİZİ VE ISIL İŞLEM
SEMPOZYUMU



FAHTS

SESSION 1

Session Chairman / Oturum Başkanı:

Murat BAYDOĞAN • ISTANBUL TECHNICAL UNIVERSITY

🕒 11.20-11.50

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Lightweight Efforts on Heavy Duty Forging Applications

Gürbüz GÜZEY

• PARSAN MAKİNE PARÇALARI SANAYİİ
Türkiye

🕒 11.50-12.10

Microstructure and Mechanical Properties of Carbon Steel for Sequential Wire Drawing and Annealing

Doğuş ZEREN¹, Samed ENSER², Umut İNCE²

• ¹NORM ADDITIVE, ²NORM FASTENERS
Türkiye

🕒 12.10-12.30

A Failure Case Study: The Effect of Wire Surface Defects and Internal Structures on Steel Rope Strength

Yusuf Ziya SALIK¹, Ekrem ALTUNCU²

• ¹ÇELİK HALAT TEL VE SANAYİ, ²SAKARYA UNIVERSITY OF APPLIED SCIENCES
Türkiye

🕒 12.30-12.50

Harmonizing Strength and Ductility: Precision Heat Treatment Optimization for Enhanced Retained Austenite Stability in Hot-Rolled Q&P Steel

Ali Can AŞKIN, Ferhat İMAL, Emrullah ÇELİKKOL, Abdullah SEZER

• EREĞLİ IRON-STEEL R&D CENTER
Türkiye



ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING SYMPOSIUM

YAPAY ZEKA VE MAKİNE
ÖĞRENMESİ SEMPOZYUMU



AIMLS

SESSION 2

Session Chairman / Oturum Başkanı:

Scott P. BECKMAN • WASHINGTON STATE UNIVERSITY

🕒 13.30-14.00

INVITED SPEAKER/ DAVETLİ KONUŞMACI

Application of Graph Methods in Computational Design of Kinematically Active Molecules

Alex GREANEY

• UNIVERSITY OF CALIFORNIA, RIVERSIDE
USA

🕒 14.00-14.20

Melt Pool Width Prediction with Machine Learning in Selective Laser Melting

Umut Can GÜLLETUTAN^{1,2}, Sertaç ALTINOK², Irmak SARGIN¹

• ¹MIDDLE EAST TECHNICAL UNIVERSITY, ²TURKISH AEROSPACE INDUSTRY
Türkiye

🕒 14.20-14.40

Implementing a Robust Coding System for Aluminum Low-Pressure Die-Casting Manufacturing Providing Durability on the Hot Material Surface and Heat-Treatment Process

**Gökhan AKSU¹, Anıl TÜRKÜM¹, Serra TUZCUOĞLU², Mete KAYALAR²,
Musa Tunç ACARKAN²**

• ¹DÖKTAŞ DÖKÜMCÜLÜK, ²COSMODOT
Türkiye, USA

🕒 14.40-15.00

A Materials Informatics Approach to Understand Processing - Fracture Toughness Relationship in Boron Carbide Ceramics

Ö. Gökhan TARMAN, Irmak SARGIN

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye



CASTING SYMPOSIUM

DÖKÜM SEMPOZYUMU



CSS

SESSION 3

Session Chairman / Oturum Başkanı:

Ali KALKANLI • MIDDLE EAST TECHNICAL UNIVERSITY

🕒 15.20-15.40

Effect of Alloy Composition on Solidification Behavior of 1050 Aluminum Alloy

**Ayşe Ecem YÜRÜK¹, Hikmet KAYAÇETİN², Didem KAPLAN¹,
Onur MEYDANOĞLU², Melis ŞEREFOĞLU¹**

• ¹MARMARA UNIVERSITY, ²ASSAN ALÜMİNYUM - Türkiye

🕒 15.40-16.00

Microstructure Formation with Titanium in Compacted Graphite Cast Iron

Ahmet Buğra KEYVANKLI¹, Ahmet ÖZEL², Süleyman Can KURNAZ²

• ¹FERRO DÖKÜM, ²SAKARYA UNIVERSITY - Türkiye

🕒 16.00-16.20

Melting Dynamics in Two – Phase Eutectics

Didem KAPLAN, Ayşe Ecem YÜRÜK, İbrahim BİLGİN, Melis ŞEREFOĞLU

• MARMARA UNIVERSITY - Türkiye

🕒 16.20-16.40

Development of Nickel Aluminum Bronze Alloy and Production of Propeller Hub by Sand Casting Method

Yağmur LALECİ¹, Uğur KURUOĞLU¹, Recep ÇALIN²

• ¹AKDAŞ DÖKÜM, ²KIRIKKALE UNIVERSITY - Türkiye



UNDERGRADUATE RESEARCH SYMPOSIUM

LİSANS ÖĞRENCİLERİ
ARAŞTIRMA SEMPOZYUMU



URS

SESSION 1

Session Chairman / Oturum Başkanı:

Gökhan ORHAN • İSTANBUL UNIVERSITY-CERRAHPAŞA

🕒 10.00-10.15

Evaluation of Thermal Power Plant Ashes with a Waste Minimization Approach

**Harun KAYNAK, Gülfem ADIYAMAN, Sevdâ ÜZÜMCÜ,
Mert ÖZGÜR, Selçuk KAN, Kağan BENZEŞİK, Onuralp YÜCEL**

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

🕒 10.15-10.30

Circular Economy Approach for Aluminum Waste Evaluation

**Barbaros Sinan BOSTAN, Bora YILDIZ, Eren YÜCEDAĞ, Pelin ÖZBEK,
Veysel KIMIŞ, Selçuk KAN, Kağan BENZEŞİK, Onuralp YÜCEL**

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

🕒 10.30-10.45

Sustainable Process Design for EAF Steel Production Waste

**Simay MAY, Yusuf Eren KENDİR, Kağan KIRLI, Zeynep Aybike ÇANCI,
Selçuk KAN, Kağan BENZEŞİK, Onuralp YÜCEL**

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

🕒 10.45-11.00

Gold Refining by Using Acids: An Alternative to Electrolysis Process

Umut Fahri ERENER^{1,2}, Ezka EREMKERE², Mert ZORAĞA²

• ¹İSGOLD ALTIN RAFİNERİSİ, ²İSTANBUL UNIVERSITY-CERRAHPAŞA

Türkiye



URS

SESSION 2

Session Chairman / Oturum Başkanı:

M. Şeref SÖNMEZ • İSTANBUL TECHNICAL UNIVERSITY

🕒 **11.20-11.35**

Co-Precipitation Process from Leach Liquors Containing Critical Metals Extracted from End-of-Life LIBs

Esratur ULKA, Oğulcan GÜNGÖR, Elif GÜLOĞLU, Gökhan ORHAN

• İSTANBUL UNIVERSITY-CERRAHPASA

Türkiye

🕒 **11.35-11.50**

Process Design of Environment-Friendly Magnesium Metal Production

Bedirhan SAĞLAM, Ferhat KAYA, Sercan CANER,

Süleyman Suat TAHAN, Selçuk KAN, Kağan BENZEŞİK, Onuralp YÜCEL

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

🕒 **11.50-12.05**

Decarbonization Approach for the Production of Ferrochrome

Eray EKER, Ata Ilgaz ASLAN, Mirhat PAYIR, Yaren GÜNGÖR, Selçuk KAN,

Kağan BENZEŞİK, Onuralp YÜCEL

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

🕒 **12.05-12.20**

Production Optimization and Coating Characterization of Metal Sulfate Solutions Using Membrane Technology

Enes EKİNCİ, Begüm ÜNVEROĞLU ABDİOĞLU

• ANKARA YILDIRIM BEYAZIT UNIVERSITY

Türkiye



URS

SESSION 3

Session Chairman / Oturum Başkanı:

C. Hakan GÜR • MIDDLE EAST TECHNICAL UNIVERSITY

🕒 13.30-13.45

Research on Microwave-Assisted Synthesized Cu²⁺- and Zn²⁺-Doped β -TCP Powders

Dilan ATEŞ, Habibe Zehra AKSAKAL, Azade YELTEN COŞKUN

• İSTANBUL UNIVERSITY-CERRAHPASA

Türkiye

🕒 13.45-14.00

Electrodeposition of Chitosan-Based Neural Guidance Channels

Seda KARTAL, Osman Melih BAVUK, Yağmur SELVİ

• MIDDLE EAST TECHNICAL UNIVERSITY

Türkiye

🕒 14.00-14.15

Fabrication of Silk Fibroin/Carbon Nanofiber Neural Guidance Channel

Akif ADAY, Barış DARICIOĞLU, Aygün Arda ERDOĞAN, Aysıma PARLAK

• MIDDLE EAST TECHNICAL UNIVERSITY

Türkiye

🕒 14.15-14.30

Upgrading of Low-Purity, Low-Cost Zinc Oxide Raw Material to Purity That Can Be Used in Pharmaceutical and Cosmetic Industries

Nesli YÜRÜK¹, Alper SAKARYA¹, A. Murat AVCI², Ender SUVACI¹

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²ENTEKNO INDUSTRIAL TECHNOLOGICAL AND NANO MATERIALS

Türkiye

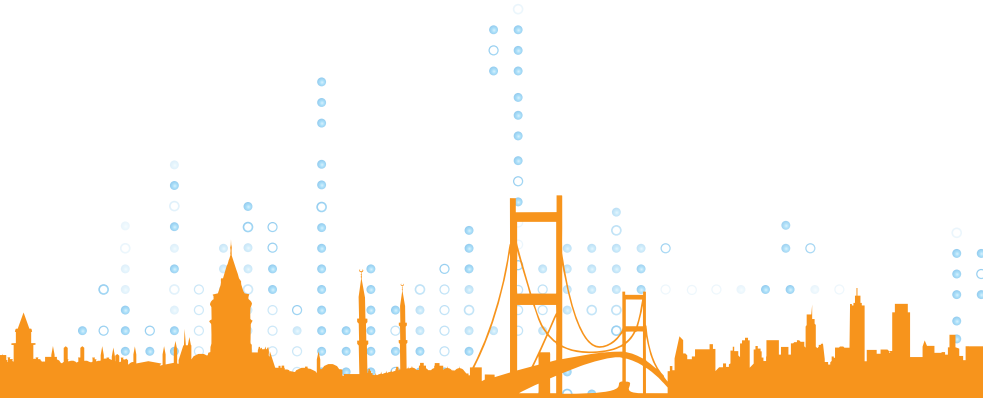


22nd International Metallurgy and Materials Congress

22. Uluslararası Metalurji
ve Malzeme Kongresi

POSTER PRESENTATIONS

POSTER SUNUMLAR





Poster Presentations

Poster Sunumları

Surface Treatment and Coating Symposium

Yüzey İşlemler ve Kaplama Sempozyumu

STCS-1

Comparison of Corrosion Behavior of CuNi14Al3, CuNi30Mn1 and Monel K500 Alloys in Neutral Chloride Solutions

Volkan KARAKURT, Feriha BİROL, Talip ÇİTRAK, Orçun ZİĞİNDERE

• SAĞLAM METAL

Türkiye

STCS-2

Inspection of the Surface Treatment Processes Effect on Composite-Composite and Composite-Metal Adhesion Properties

Rabia Şevval AKAN, Kerime GÜLMEZ, Hülya ARSLAN KARAÇEPER

• SAZCILAR OTOMOTİV

Türkiye

STCS-3

Gas Nitriding and Characterization of Medium-Entropy CoCrFeNi Alloys by Adding Nb Element at Different Rates

Doğancan CEYLAN, Sezgin CENGİZ, Kerem Özgür GÜNDÜZ, Yücel GENÇER, Mehmet TARAKÇI

• GEBZE TECHNICAL UNIVERSITY

Türkiye

STCS-4

TEOS-GPTMS Hybrid Sol-Gel Coatings to Improve the Physical and Corrosion Properties of Metals

Merve METİN YURT¹, Nilgün KIZILCAN¹, Alper YEŞİLÇUBUK²

• ¹İSTANBUL TECHNICAL UNIVERSITY, ²ARÇELİK

Türkiye

STCS-5

Comparison of Thermal and Physical Properties of High Light Reflective Cool Powder Coating and Conventional Powder Coating on 6XXX Aluminium Profiles

İrem Yaren SİYAH, Barış AKIN, Esra KAYMAK AKSU, Gökem ÖZÇELİK

• ASAŞ ALÜMİNYUM

Türkiye



Poster Presentations

Poster Sunumları



Synthesis and Characterization of B Doped SiO₂ Based Nanostructured Composite Coatings

Miray Batıkan KANDEMİR, Tolga TAVŞANOĞLU

• MUĞLA SITKI KOCMAN UNIVERSITY

Türkiye

STCS-6

Modeling of Diffusion During High Temperature Oxidation on Al Based Coatings deposited on Ni Based Superalloys

Ali BARUT, Cevat SARIOĞLU

• MARMARA UNIVERSITY

Türkiye

STCS-7

Development of Ni&NiGO Contact Layers for P-type (Zr,Ti) Co(Sn,Sb) Thermoelectric Material by Low-cost Electro-Brush Plating Technique

Mikdat GURTARAN, Zhenxue ZHANG, Xiaoying LI, Hanshan DONG

• UNIVERSITY OF BIRMINGHAM

United Kingdom

STCS-8

The Effect of Remaining Chloride on the Surface Quality of High Carbon Wire Rod After Picking

Yusuf Ziya SALIK¹, Zeynep.S. DAMADOĞLU¹, Ekrem ALTUNCU²

• ¹ÇELİK HALAT TEL VE SANAYİ, ²SAKARYA UNIVERSITY OF APPLIED SCIENCES

Türkiye

STCS-9

Cold-Sprayed Inconel 718 Alloy: Enhancing Deposition Behavior Through Process Parameter Optimization

Seren ÖZER¹, Eda AYDOĞAN², Ziya ESEN³, Arcan DERİCİOĞLU²

• ¹ATILIM UNIVERSITY, ²MIDDLE EAST TECHNICAL UNIVERSITY, ³ÇANKAYA UNIVERSITY

Türkiye

STCS-10





Poster Presentations

Poster Sunumları

STCS-11

Synthesis and Characterization of Electroless Copper-Coated SiC Fibers **Ulaş MATİK**

• KARABÜK UNIVERSITY
Türkiye

STCS-12

Investigation of the Effect of Pre-Surface Treatment Methods on 6063 Aluminum Alloy Surfaces for Anodizing and Tin Coloring Processes

Bahadır KARACA, Fırat ÇETİNKAYA, Büşra BOŞNAKOĞLU
• ZAHİT ALÜMİNYUM
Türkiye

Composite and Polymer Materials Symposium **Kompozit ve Polimer Malzemeler Sempozyumu**

CPS-1

Examining the Effects of Thickeners on the Rheological Properties of the Pastes, Stuccoes and Paints
Meltem İPEKÇİ TERZİOĞLU, Fatma ÇINAR, Ece ÜNLÜ PINAR
• KALEKİM KİMYEVİ
Türkiye

CPS-2

The Role of Sustainable Green Composites in the Aviation Sector
Afranur KÜÇÜKBAŞ, Gizem KARABULUT, Nuray BEKÖZ ÜLLEN
• İSTANBUL UNIVERSITY-CERRAHPAŞA
Türkiye

CPS-3

Wear Resistance of Cu/WC/Gr Hybrid Composites Prepared by Powder Metallurgy
Ulaş MATİK
• KARABÜK UNIVERSITY
Türkiye



Poster Presentations

Poster Sunumları



Aerospace Materials Symposium

Havacılık Malzemeleri Sempozyumu

Microstructural Investigation on Layer by Layer Transition of EB-PVD YSZ Coatings Under Thermal Oxidation

Nursedâ AKGÜRSU², Aylin ŞAHİN KAHRAMAN¹, Deniz Sultan AYDIN¹, Hüseyin AYDIN¹

• ¹TUBITAK MAM, ²GEBZE TECHNICAL UNIVERSITY
Türkiye

AMS-1

Alloying of Ti-6Al-4V Superalloy with Rare Earth Elements by Powder Metallurgy Method

İrem Nur USLU, Burhan ERDOĞDU, Batuhan SORUŞBAY, Hamit Özkan GÜLSOY

• MARMARA UNIVERSITY
Türkiye

AMS-2

The Impact of Process Parameters on Densification and Microstructure Evolution in Selective Laser Melted Oxide Dispersion Strengthened Inconel 939

Aylin AKTAŞ, Eda AYDOĞAN, Y. Eren KALAY

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

AMS-3

The Effect of Homogenization Heat Treatment on the Dynamic Strain Aging Behaviour of Additively Manufactured and Heat-Treated In 718 Superalloy

Tuğçe Kaleli ALAY, C. Hakan GÜR
• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

AMS-4





Poster Presentations

Poster Sunumları

Carbon Mitigation Technologies Symposium

Karbon Azaltma Teknolojileri Sempozyumu

CMTS-1

Valorization of Demolition Concrete for Post-Combustion Carbon Capture

Talal Abdulrazzak AL RAAS¹, Umay ÇINARLI¹, İlayda ÖZBAĞ TOĞAÇAR¹, Murat ALKAN², Shareq Mohd NAZİR³, Z. Cansu CANBEK ÖZDİL¹, Ahmet TURAN¹

• ¹YEDİTEPE UNIVERSITY, ²DOKUZ EYLÜL UNIVERSITY, ³KTH ROYAL INSTITUTE OF TECHNOLOGY
Türkiye, Sweden

CMTS-2

Going Nuts for Low Carbon Fuels: A Global Study on the Gasification of Pistachio Shell Waste

Isobel WOOD¹, Ben KOLOSZ¹, İlayda OZBAG TOGACAR², Ahmet TURAN², Martin TAYLOR¹

• ¹UNIVERSITY OF HULL, ²YEDİTEPE UNIVERSITY
United Kingdom, Türkiye

Poster Presentations

Poster Sunumları



Recycling and Sustainability Symposium

Geri Dönüşüm ve Sürdürülebilirlik Sempozyumu

Synthesis of Smelting-Grade Flux Through the Utilization of Salt-Based Residues

İlayda ÖZBAĞ TOĞAÇAR¹, Umay ÇINARLI¹, Bahar ÜNER¹, Cemre ORAL¹, Meltem GÜROL¹, Sarp TESKİN¹, Selenay ELBİR¹, Tamer CAR¹, Dürdane DEĞERLİ¹, Erman CAR³, Ahmet TURAN¹

• ¹YEDİTEPE UNIVERSITY, ²ETİ ALÜMİNYUM, ³METALLIC MÜHENDİSLİK ÇÖZÜMLERİ
Türkiye

RSS-1

Development of a New Lubrication System Focused on Increasing Life on Escalator Chains

Sinan KAPICIOĞLU, Nilüfer DUYGULU

• YILDIZ TECHNICAL UNIVERSITY
Türkiye

RSS-2

The Role of Lithium-Ion Batteries in the Sustainable Green Energy Sector

Süeda ÇUVALCI, Gizem KARABULUT, Nuray BEKÖZ ÜLLEN

• İSTANBUL UNIVERSITY-CERRAHPAŞA
Türkiye

RSS-3

Reuse of Biscuit Waste in Soft Porcelain Structure

Dilek BİRBEN ŞEN, Berda ALTUN, Çağla PEHLİVAN

• KÜTAHYA PORSELEN
Türkiye

RSS-4





Poster Presentations

Poster Sunumları

Steel Symposium

Çelik Sempozyumu

STS-1

Effect of O₂ Gas in Steel on Steel Cleaning and Final Product Construction Steel

Nilan DAĞLI, Uğur CENGİZ, Oğuz Han SAKARYA

• BİLECİK DEMİR ÇELİK

Türkiye

STS-2

Continuous Temperature Measurement System Application in Liquid Steel Continuous Casting Machine

Nilan DAĞLI

• BİLECİK DEMİR ÇELİK

Türkiye

STS-3

Green Era in the Iron and Steel Industry

Ezgi KULA, Zuhale AYDIN, Gizem KARABULUT, Nuray BEKÖZ ÜLLEN

• İSTANBUL UNIVERSITY-CERRAHPAŞA

Türkiye

STS-4

Production and Characterization Studies of 60SGH Grade Steel Used as Grinding Rod in the Mining Sector

Nurdan GÜNDOĞAN¹, Sebahattin YETİŞKEN¹, Hakan ERÇAY¹, Tuncay DİKİCİ²

• ¹ÖZKAN STEEL INDUSTRY, ²DOKUZ EYLÜL UNIVERSITY

Türkiye

STS-5

Investigation of Magnetocaloric Effect in MnFeCoNiCu, MnFeCoNiSi and MnFeCoNiGe High Entropy Alloys

Haluk ERGİN¹, Yaşar ORBAY¹, Aslı ÇAKIR¹, Mehmet ACET²

• ¹MUĞLA SITKI KOCMAN UNIVERSITY, ²UNIVERSITY OF DUISBURG-ESSEN

Türkiye, Germany



Poster Presentations

Poster Sunumları



Material Reliability and Sustainability in Crane Handling Systems

Kaan AKBAY, Barış KÜPELİ, Muhammed AKKUŞ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-6

Production Process of API 5L PSL2 X80M Quality (Oil and Natural Gas Pipe Steel) in İsdemir and Applied Tests

Muhammet BİLEN, Cemre KEÇECİ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-7

Ferroalloys Stocks Level Tracking System in Iron and Steel Production

Erman KAYA, Beril BİRİNCİ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-8

Optimizing Cooling Parameters to Prevent Collapse Defects in Hot Rolling Mill Production

Serdar GÜNBAY, Ahmet SAĞLAM, İskender GÖK, Uğur OKTAY, Adem Can GÜZİDE, Ramazan ÜNAL, Erhan SELVİ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-9

Modeling of Cri Value of Metallurgical Coke

Yavuz Selim GÜNAY¹, Ömer Saltuk BÖLÜKBAŞI²

• ¹İSKENDERUN DEMİR VE ÇELİK, ²İSKENDERUN TECHNICAL UNIVERSITY

Türkiye

STS-10





Poster Presentations

Poster Sunumları

STS-11

Effective Maintenance KPI Studies in Sustainable Steel Production

Hasan BULUT, Sururi KARAÇORLU, Gökçe ARSLAN

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-12

Influence of Titanium Content on the Structural Wheatering Steel

Adrian Emanuel ONICI, Victor GEANTA,

Alexandra Mihaela TUDOR, Ionelia VOICULESCU

• NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
POLITEHNICA BUCHAREST

Romania

STS-13

Blast Furnace Nr.3 Hearth Refractory Replacement

Süleyman TAŞÇILAR, Özhan UZUN, Çağlar CAN, Mehmet KURT

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-14

Increasing the Amount of Liquid Steel Transported in Steel Casting Ladles

Özhan UZUN, Süleyman TAŞÇILAR, Şevval ÖZDEMİR, Memduh KIRCAN, Alperen TERZİ

• İSKENDERUN DEMİR VE ÇELİK

Türkiye

STS-15

Prediction of Isdemir Hot Rolling Mill Production Rate Using Machine Learning Method

Adem Can GÜZİDE¹, Ahmet BEŞKARDEŞ¹,

Ömer Saltuk BÖLÜKBAŞI²

• ¹İSKENDERUN DEMİR VE ÇELİK, ²İSKENDERUN TECHNICAL UNIVERSITY

Türkiye



Poster Presentations

Poster Sunumları



Energy Materials Symposium

Enerji Malzemeleri Sempozyumu

Enhanced Cyclic Performance of Iron Anodes for Alkaline Rechargeable Batteries

**Beyzanur ACAR¹, A. Engin SERİN², A. Gül ÖZTÜRK²,
Özgür DARICIOĞLU², Tayfur ÖZTÜRK^{2,3}**

• ¹ANKARA UNIVERSITY, ²MIDDLE EAST TECHNICAL UNIVERSITY,
³INNOVASCOPE MATERIALS TECHNOLOGIES
Türkiye

EMS-1

Exploring Nano and Micro Composite Strategy for Enhancing Thermoelectric Properties of Half-Heusler Compounds

Enes İbrahim DUDEN¹, Servet TURAN¹, Cem SEVİK^{1,2}

• ¹ESKİŞEHİR TECHNICAL UNIVERSITY, ²UNIVERSITY OF ANTWERP
Türkiye

EMS-2

Composite Positrode in Protonic Ceramic Electrolysis Cells for Hydrogen Production

**Rishad KUNAFIEV, Veeramani VEDIYAPPAN, Leonard KWATI,
Manivannan BHUVANESHWARI, Hiroshige MATSUMOTO**

• KYUSHU UNIVERSITY
Japan

EMS-3

Non-Ferrous Metals Symposium

Demir Dışı Metaller Sempozyumu

Metal Extraction from Polymetallic Nodules by Modified Chlorination Method

**David NOVACEK, Eva KRISTIANOVA, Dieu Linh TRANOVA,
Vit JUZA, Nguyen Hong VU**

• UNIVERSITY OF CHEMISTRY AND TECHNOLOGY, PRAGUE
Czech Republic

NFMS-1





Poster Presentations

Poster Sunumları

NFMS-3

Investigation of Microstructure, Mechanical and Wear Properties of Extruded and Forged $\text{CuAl10Ni}_5\text{Fe}_4$ Alloy
Orçun ZİĞİNDERE, Volkan KARAKURT, Feyzanur ÖZTÜRK, Ümit KAPLAN, Baybora KILIÇ

• SAĞLAM METAL
Türkiye

NFMS-4

Production and Characterization of a Copper Matrix Composite Reinforced with Boron
Rabia Tuğçe ŞAHİN¹, Ömer Faruk ATAK¹, Hadi JAHANGIRI², Amir MOTALLEBZADEH², Samira MOHAGHEGH^{1,3}

• ¹İSTİNYE UNIVERSITY, ²KOÇ UNIVERSITY, ³ACCESS E.V
Türkiye

NFMS-5

Influence of Service Temperature on Hardness of the Eutectic Al-Ni Alloy

Kral Ali COŞAN, Salih Şükrü ÇEVRE, Tuğçe Nur MENCET, Kerem Özgür GÜNDÜZ, Mehmet TARAĞCI, Yücel GENÇER

• GEBZE TECHNICAL UNIVERSITY
Türkiye

NFMS-6

Investigation of the Effect of Vanadium Addition on A356 Scrap Aluminium Alloy on Fluidity

Ümit KUTSAL¹, Melek DURMUŞ², Murat ÇOLAK³

• ¹CEVHER JANT SANAYİİ, ²NECMETTİN ERBAKAN UNIVERSITY, ³BAYBURT UNIVERSITY
Türkiye

NFMS-7

Microstructure Investigation of Vanadium Addition to A356 Scrap Alloy Depending on Solidification Time

Ümit KUTSAL¹, Yiğit SAĞNAK¹, Emin USLU²

• ¹CEVHER JANT SANAYİİ, ²BAYBURT UNIVERSITY
Türkiye

NFMS-8

The Characterization of Eskisehir-Beylikova Ore by Mineral Liberation Analysis

Esra BAŞTÜRKÇÜ, Ceyda ŞAVRAN, Oğuzhan Mert GÜRKAN, Selim ERTÜRK, A. Ekrem YÜCE, Servet İ. TİMUR

• İSTANBUL TECHNICAL UNIVERSITY
Türkiye



Poster Presentations

Poster Sunumları



Selective Separation of Samarium from Light Rare Earth Elements via Ph-Controlled Solvent Extraction

Melike TUNÇ^{1,2}, Utku Orçun GEZİCİ¹, Esra BAŞTÜRKÜ¹,
Selim ERTÜRK¹, Belma SOYDAŞ SÖZER²,
Güldem KARTAL ŞİRLİ¹, Servet TİMUR¹

• ¹İSTANBUL TECHNICAL UNIVERSITY, ²TENMAK, NATEN
Türkiye

NFMS-9

Slag Modification Studies for Recycling of High Carbon Ferrochromium (HC FeCr) Metal Fines by Induction Furnace

Mahir Ünal BAKI¹, Ömer Faruk SAĞMAN², Ozan UYLAS¹

• ¹YILMADEN HOLDİNG, ²ETİ KROM
Türkiye

NFMS-10

Effect of Intensive Milling on the Structural Characteristics of Shale Ore

Turan UYSAL¹, Tufan KIYAK², Hikmet SİS², MURAT ERDEMOĞLU²

• ¹GÜMÜŞHANE UNIVERSITY, ²İNÖNÜ UNIVERSITY
Türkiye

NFMS-11

Influence of Ag Content on Structural and Mechanical Properties of Ti-Nb-Ta-Zr High Entropy Alloy

İlayda SARRAF, Gökhan POLAT

• İZMİR KATİP ÇELEBİ UNIVERSITY
Türkiye

NFMS-12

High-Entropy Alloy Deposit on an Aluminum Alloy

Murat ALKAN, Gizem ARI

• DOKUZ EYLÜL UNIVERSITY
Türkiye

NFMS-13

Investigation of Hydroxyapatites Synthesised from Eggshell and Mussel Shell in Cr (VI) Adsorption

Gabriel UĞURGEL¹, Erdoğan KARİP¹, Gökhan BAŞMAN¹,
Mehtap MURATOĞLU²

• ¹ETİ KROM, ²FIRAT UNIVERSITY
Türkiye

NFMS-14





Poster Presentations

Poster Sunumları

Ceramics, Glass, Refractory Materials Symposium Seramik, Cam, Refrakter Malzemeleri Sempozyumu

CGRS-1

Investigation of the Oxidation and Mechanical Properties of TaB₂-Based Composites

Taha Can YASGUL, İpek AKIN KARADAYI

• İSTANBUL TECHNICAL UNIVERSITY

Türkiye

CGRS-2

Ladle Spinel Refractory from a Circular Economy Perspective

Yasin GENÇ¹, Oğuzhan SAKARYA², Uğur CENGİZ², Bruno TOUZO³, Veli KARA¹

• ¹HAZNEDAR DURER, ²BİLECİK DEMİR ÇELİK, ³CALDERYS

Türkiye, France

CGRS-3

Investigation of the Effect of Glaze Viscosity on Surface Quality

Çağla PEHLİVAN, Dilek BİRBEN ŞEN, Berda ALTUN

• KÜTAHYA PORSELEN

Türkiye

CGRS-4

An Investigation of the Recyclability of Plaster Molds Generated as Waste in Porcelain Tableware Production with Polymer Chemical Addition

Ayşe Betül DEMİR¹, Levent ŞENDOĞDULAR², Dilek ŞEN¹, Enver TARIM¹, Berda ALTUN¹

• ¹KÜTAHYA PORSELEN, ²ERCİYES UNIVERSITY

Türkiye

CGRS-5

Next-Generation MgO-C Refractories: Improving Infiltration and Strength Indicators by Development Additive Technology

Nuri SARIOĞLU, Ali ŞANLI, Ömer KAYDECI

• KUMAS REFRACTORIES

Türkiye



Poster Presentations

Poster Sunumları



Corrosion and Wear Symposium

Korozyon ve Aşınma Sempozyumu

Investigation of the Effect of Phthalocyanine Inhibitor on Aluminum 7075 Corrosion in Acidic Solution

Kübilay ÖZTÜRK^{1,2}, Oğuz Kaan ÖZDEMİR¹

• ¹TOFAŞ, ²YILDIZ TECHNICAL UNIVERSITY

Türkiye

CWS-1

Effect of Cutting Speed on Surface Integrity of Wc-Co During Wire Electrical Discharge Machining

Kemal Bartu AYDIN, Emre SANDAL, Tayfur YAVUZBARUT

• NORM TOOLING

Türkiye

CWS-2

Nanomaterials Symposium

Nanomalzemeler Sempozyumu

A Novel Approach for Sol-Gel Method to Develop Smart Multifunctional Nanomaterials

Osman ARSLAN

• İSTANBUL SABAHATTİN ZAİM UNIVERSITY

Türkiye

NMS-1

Towards Bimodal Structured High Entropy Alloys Triggered by Heat Treatment After Severe Plastic Deformation

Mustafa TEKİN¹, Hasan KOTAN²

• ¹YEDİTEPE UNIVERSITY, ²BURSA TECHNICAL UNIVERSITY

Türkiye

NMS-2

Exploring Electromagnetic Interactions in Core-Shell Metallic Nanoparticles for Enhanced Light Absorption

Seda Aygöl AKYÜZ, Zeliha Cansu CANBEK ÖZDİL

• YEDİTEPE UNIVERSITY

Türkiye

NMS-3





Poster Presentations

Poster Sunumları

Biomaterials Symposium

Biyomalzemeler Sempozyumu

BMS-1

Surface Modified Carbon Black as Photothermal Antibacterial Agent Against Gram-Positive and Gram-Negative Bacteria

Abdurrahman MUSTAFA, Ahmed ALSARORI, Abdulkarim ELUBEYD, İsmail Cihan KAYA, Gülcihan GÜZEL KAYA

• KONYA TECHNICAL UNIVERSITY

Türkiye

BMS-2

Synthesis of Drug Loaded Dopamine Crosslinked Albumin Nanoparticles

Eda ARGİTEKİN, Yaşar AKDOĞAN

• İZMİR INSTITUTE OF TECHNOLOGY

Türkiye

BMS-3

Preparation of Photo/Sono Sensitizer Loaded Nanoparticles and Monitoring Radical Forming by EPR

Cansu AKYOL KARPUZCU, Yaşar AKDOĞAN

• İZMİR INSTITUTE OF TECHNOLOGY

Türkiye

BMS-4

Electrochemically Grown Zinc-Based Nanowires for Antibacterial Applications

Zeynep Cemre ÖRSEL, Yiğithan TUFAN, Batur ERCAN

• MIDDLE EAST TECHNICAL UNIVERSITY

Türkiye

Failure Analysis and Heat Treatment Symposium

Hasar Analizi ve Isıl İşlem Sempozyumu

FAHTS-1

Low Pressure Carburizing Study on Martensitic Stainless Steel 14X17H2

Alper KELEŞOĞLU

• SİSTEM TEKNİK SANAYİ FIRINLARI

Türkiye

FAHTS-2

Fracture Analysis and Material Selection for L Geometry Single Sheet Front Control Arm

Mert İLGİN, Mehmet Fatih ERCAN

• OSKIM OTOMOTİV

Türkiye

Poster Presentations

Poster Sunumları



Investigation of Extending the Service Life of Cutting Tools Used for Threading in Rolling Mills Using Cryogenic Processes

FAHTS-3

Mehmet Kerem ERTEM¹, Muhammet ULUDAĞ², Efe TAŞCI¹

• ¹ENTİL ENDÜSTRİ YATIRIMLARI, ²BURSA TECHNICAL UNIVERSITY
Türkiye

Characterization of the Effect of Molybdenum Addition on Wear Behavior in High-Speed Steel Rolling Mills

FAHTS-4

Efe TAŞCI¹, Muhammet ULUDAĞ², Mehmet Kerem ERTEM¹

• ¹ENTİL ENDÜSTRİ YATIRIMLARI, ²BURSA TECHNICAL UNIVERSITY
Türkiye

Effect of Post-Processing Heat Treatments on the Mechanical Properties of AlSi10Mg Alloy Produced by Selective Laser Melting

FAHTS-5

Beril ÖZLEN^{1,2}, Burcu ARSLAN HAMAT¹, Arcan F. DERİCİOĞLU²

• ¹TURKISH AEROSPACE INDUSTRIES, ²MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

Effect of Different Aging Temperatures on Mechanical Properties of 6082 Alloy

FAHTS-6

Batuhan Emre YANIK, Burak KARDEŞLER, İbrahim BAT, Alptuğ TANSES, Gökem ÖZÇELİK

• ASAŞ ALÜMİNYUM
Türkiye





Poster Presentations

Poster Sunumları

FAHTS-7

Optimizing Heat Treatment for Enhanced Mechanical Performance of Ultra-High Strength Bolts

Burak HIZLI^{1,3}, Umut İNCE¹, Şerife HELVACIOĞLU², Cemal Can ERDOĞAN², Ayşe ERKAN², Ümmihan T. YILMAZ⁴

• ¹NORM İZMİR CIVATA, ²DÖKSAN ISIL İŞLEM, ³DOKUZ EYLUL UNIVERSITY, ⁴ANKARA HACI BAYRAM VELİ UNIVERSITY
Türkiye

FAHTS-8

Enhancing Trimming Die Life: The Impact of Material Properties, Geometry and Coatings in Cold Forging Processes

Tolga AYDIN¹, Tayfur YAVUZBARUT², Umut İNCE¹

• ¹NORM İZMİR CIVATA, ²NEDU BAĞLANTI ELEMANLARI
Türkiye

Artificial Intelligence and Machine Learning Symposium

Yapay Zeka ve Makina Öğrenmesi Sempozyumu

AIMLS-1

Comparative Analysis of Border Determination in Steel Sheet Metal Microstructures: A Canny vs. HED Approach

Mustafa Erdem LEVENT, Ümran BAŞKAYA, Mustafa Alp YALÇIN, Yasemin KILIÇ

• EREĞLİ DEMİR VE ÇELİK FABRİKALARI
Türkiye

AIMLS-2

Optimizing Additive Manufacturing Aluminum Alloys: A CALPHAD-Based Approach Empowered by AI

Mehmet Şamil DİNÇER^{1,2}, Caner ŞİMŞİR¹, Irmak SARGIN¹

• ¹MIDDLE EAST TECHNICAL UNIVERSITY, ²REPON MACHINE AND TOOL INDUSTRY
Türkiye

AIMLS-3

Machine Learning Design for Eutectic High-Entropy Alloys

Emre ÖZCAN, Esra DOKUMACI ALKAN

• DOKUZ EYLUL UNIVERSITY
Türkiye



Poster Presentations

Poster Sunumları



Formation Energy Prediction of Boron-Rich Borides by Machine Learning

Rıza Uğur AKBULUT, Irmak SARGIN

• MIDDLE EAST TECHNICAL UNIVERSITY
Türkiye

AIMLS-4

Creating a Metallurgical Digital Twin for More Efficient, Safer and Sustainable Ladle Furnace Process

Oğuz Han SAKARYA, Hüseyin AYKANAT, Uğur CENGİZ

• BİLECİK DEMİR ÇELİK
Türkiye

AIMLS-5

Casting Symposium

Döküm Sempozyumu

Optimization of Shot Profile on Flow Simulations and Comparison to the Real Production

Ekrem ALTUNCU², Mertcan GÜRCAN^{1,2}, Naci EKMEN¹

• ¹ARPEK, ²SAKARYA UNIVERSITY OF APPLIED SCIENCES, MATERIALS AND MANUFACTURING TECHNOLOGIES APPLICATION AND RESEARCH CENTER
Türkiye

CSS-1

Investigation and Solution of Shrinkage Porosity Defect in High Pressure Aluminum Die Casting

Ekrem ALTUNCU¹, Berkan ÇETİN^{1,2}, Naci EKMEN²

• ¹SAKARYA UNIVERSITY OF APPLIED SCIENCES, MATERIALS AND MANUFACTURING TECHNOLOGIES APPLICATION AND RESEARCH CENTER, ²ARPEK
Türkiye

CSS-2

Effect of Nickel Amount on Mechanical Properties and Microstructure of EN GJS 400-15 Cast Iron

Kübra ÇELİK, Ahmet Buğra KEYVANKLI

• FERRO DÖKÜM
Türkiye

CSS-3





Poster Presentations

Poster Sunumları

CSS-4

Continuous Casting Raw Material Optimization in Overhead Line Aluminum Alloy Conductor Manufacturing

Necati OCAK¹, Harun GÜNEŞ¹, Hüseyin İLHAN¹, Kerem GÜNEŞ¹, Oğuzhan YALDIZ¹, Erhan SAYIN²

• ¹ŞAHİNLER METAL, ²ERSAY BİLİŞİM
Türkiye

CSS-5

Demonstration of Defect Content of Aluminum Castings and Raw Materials, Investigation of Degassing Method Effectiveness by Computed Tomography Scans (CT)

Armağan GÜL^{1,2}, Derya DIŞPINAR³

• ¹OYAK RENAULT, ²İSTANBUL TECHNICAL UNIVERSITY, ³FOSECO
Türkiye

Undergraduate Research Symposium

Lisans Öğrencileri Araştırma Sempozyumu

URS-1

Modeling Unimorph Piezoelectric Energy Harvesting Using PZT-Based Materials with Different Substrate and Load Conditions by Finite Element Analysis Method

Murat ÖZKUL, Ayşe BERKSOY YAVUZ

• İSTANBUL GEDİK UNIVERSITY
Türkiye

URS-2

Development of a Lighter and Easier to Apply Bus Drawbar Part

Kübra Nur KABAY¹, Oğuz ÜNAL², Furkan ÖZDEMİR¹

• ¹ANKARA YILDIRIM BEYAZIT UNIVERSITY, ²MAN TÜRKİYE
Türkiye



Poster Presentations

Poster Sunumları



Influence of Heat Treatment on Microstructure and Mechanical Properties of AISI M2 and AISI M50 High-Speed Steels

**Alpay GÜLTEKİN^{1,2}, Yunus KEKEÇ^{1,2},
Ümmihan TAŞKOPARAN YILMAZ^{2,3}, Furkan ÖZDEMİR¹**
• ¹ANKARA YILDIRIM BEYAZIT UNIVERSITY, ²DÖKSAN ISIL
İŞLEM, ³KIRIKKALE UNIVERSITY
Türkiye

URS-3

Silica Aerogels and Their Utilization in Wastewater Treatment

**Ege YILMAZ, Ceren BEYOĞLU, Öykü İÇİN,
Çekdar Vakıf AHMETOĞLU**
• İZMİR INSTITUTE OF TECHNOLOGY
Türkiye

URS-4

Cost-Effective Synthesis of AlCoFeNiMn High-Entropy Alloys for Soft Magnetic Applications

**Ecem BALCI, Gamze BAHAR, Vedat GÜÇ, Faruk KAYA,
Kerem Can DİZDAR, Cevat Bora DERİN**
• İSTANBUL TECHNICAL UNIVERSITY
Türkiye

URS-5



TRANSPORTATION

IMMC2024 Congress, eagerly awaited by the metallurgy sector, will be held in the 3rd, 5th, 6th Halls and the Foyer area of the Istanbul Fair Center.

Metro

You can reach the fairground by getting off at the 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' stop on the Yenikapı-Atatürk Airport Metro line.

Marmaray

For Marmaray transportation to IFM, you can get off at the 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' station using the Marmaray-Yenikapı Airport Metro connection. Alternatively, you can get off at the Marmaray Yeşilyurt stop and reach the fairground in 5 minutes by taxi.

Metrobus

For transportation by Metrobus, you can get off at the 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' stop after reaching the Ataköy-Şirinevler station and using the Airport Metro Connection to get off at the 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' stop.

Bus

To reach the fairground by bus, you can use the IETT bus connections and get off at the Airport Metro 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' station.

Airway

Our participants and visitors who will reach Istanbul Airport can reach the Yenibosna-Kuleli stop by taking the Havaist or HVIST-10 buses, then reach the Airport Metro connection and reach the fairground from the 'Dünya Ticaret Merkezi (World Trade Center)-Istanbul Fair Center' station.

Our participants and visitors who will come from Sabiha Gökçen Airport can come to Taksim by Havabüs buses and reach the fairground by using the Airport Metro or Metrobüs.

Taxi

The distance between Istanbul Airport and the fairground is approximately 45 kilometers. Our visitors and participants who will use a taxi can reach the fairground in approximately 35 minutes.

The distance between Sabiha Gökçen Airport and the fairground is approximately 70 kilometers. Depending on the traffic density, it takes at least one hour to reach the fairground.



ULAŞIM

Metalurji sektörünün dört gözle beklediği IMMC2024 Kongresi, İstanbul Fuar Merkezi 3, 5, 6. hollerde ve Fuaye alanında düzenlenecektir.

Metro

Yenikapı-Atatürk Havalimanı Metro hattında 'Dünya Ticaret Merkezi-İstanbul Fuar Merkezi' durağında inerek fuar alanına ulaşım sağlayabilirsiniz.

Marmaray

İFM'ye Marmaray ulaşımı için Marmaray-Yenikapı Havalimanı Metro bağlantısını kullanarak 'Dünya Ticaret Merkezi-İstanbul Fuar Merkezi' istasyonunda inebilirsiniz. Alternatif olarak Marmaray Yeşilyurt durağında inip taksi ile 5 dakika içerisinde fuar alanına ulaşım sağlayabilirsiniz.

Metrobüs

Metrobüs ile ulaşım için, Ataköy-Şirinevler istasyonunda ulaştıktan sonra Havalimanı Metro Bağlantısını kullanarak 'Dünya Ticaret Merkezi-İstanbul Fuar Merkezi' durağında inip fuar alanına ulaşabilirsiniz.

Otobüs

Fuar alanına otobüs ile ulaşım için İETT otobüs bağlantılarını kullanarak Havalimanı Metrosu 'Dünya Ticaret Merkezi-İstanbul Fuar Merkezi' istasyonunda inip ulaşabilirsiniz.

Havayolu

İstanbul Havalimanı'ndan ulaşım sağlayacak katılımcı ve ziyaretçilerimiz, Havaist ya da HVİST-10 otobüsleri aracılığı ile Yenibosna-Kuleli durağına gelmelerinin ardından Havalimanı Metro bağlantısına ulaşp 'Dünya Ticaret Merkezi-İstanbul Fuar Merkezi' istasyonundan fuar alanına gelebilirler. Sabiha Gökçen Havalimanı'ndan gelecek katılımcı ve ziyaretçilerimiz ise Havabüs otobüsleri ile Taksim'e gelerek, Havalimanı Metrosu ya da Metrobüs aracılığı ile fuar alanına ulaşım sağlayabilirler.

Taksi

İstanbul Havalimanı ile fuar alanı arası yaklaşık 45 kilometredir. Taksi kullanacak olan ziyaretçilerimiz ve katılımcılarımız yaklaşık 35 dakikada fuar alanına ulaşabilirler.

Sabiha Gökçen Havalimanı ve fuar alanı arası yaklaşık 70 kilometre uzaklıktadır. Trafiğin yoğunluğuna göre fuar alanına ulaşım en az bir saat sürmektedir.



NOTLAR

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22nd International Metallurgy and Materials Congress

22. Uluslararası Metalurji
ve Malzeme Kongresi



 **METEM**

    immc2024

