



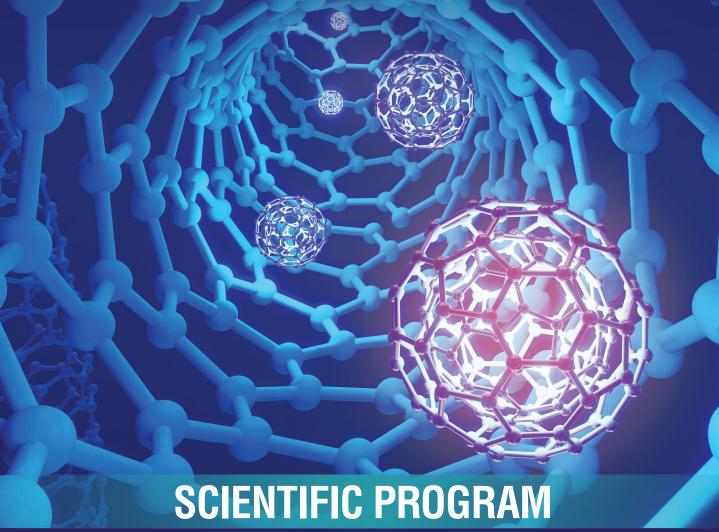






3rd INTERNATIONAL MATERIALS TECHNOLOGIES AND METALLURGY CONFERENCE-2023

11-13 October 2023 ITU SULEYMAN DEMIREL CONFERENCE CENTER ISTANBUL - TÜRKİYE



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OCTOBER 11,2023, WEDNESDAY

08:30-09:20	Registration
09:20-09:30	Prof. Dr. Gultekin Goller - Istanbul Technical University, Türkiye - Opening Speech
09:30-09:40	Ata Ozdemirler - METEM - Opening Speech
09:40-09:50	Prof.Dr.Ismail Koyuncu-Rector- Istanbul Technical University, Türkiye
09:50-10:05	Presentation of Plaques
10:05-10:20	Yaşar Hacı Altürk-Ereğli Demir ve Çelik Fabrikaları T.A.ŞTürkiye
	Session Chair: Prof. Dr. Ozgul Keles - Istanbul Technical University
10:20-10:40	Plenary Speaker Prof. Dr. Iulian Antoniac - Materials Science and Engineering Faculty, University Politehnica of Bucharest, Romania Correlations Between Materials, Methods, and Clinical Needs Regarding the Coatings for Biodegradable Mg Alloys
10:40-11:00	Plenary Speaker Dr. Csaba Balazsi - Centre for Energy Research, Eötvös Loránd Research Network (ELKH), Hungary Current Status and Future Trends in Nanocarbon Added Ceramics
11:00-11:20	Family Photo – COFFEE BREAK
	Session Chair: Prof. Dr. Onuralp Yucel - Istanbul Technical University
11:20-11:40	Plenary Speaker Prof. Dr. Julia Claudia Mirza Rosca - Las Palmas de Gran Canaria University, Canary Islands, Spain Exciting and Promising New Class of Materials for the Future: High Entropy Alloys
11:40-12:00	Plenary Speaker Prof. Dr. Gabriella Tranell - The Norwegian University of Science and Technology, Norway Recycling of Aluminium and Aluminium Sidestreams for Resource Efficient Production
12:00-13:30	Lunch
13:30-13:50	Plenary Speaker Prof. Dr. Eda Tahir Turanli - Faculty of Engineering and Natural Sciences, Dept.of Molecular Biology and Genetics, Acibadem University, Türkiye Current Progress in Identifying Disease Genes: Insights from Multiple Sclerosis
13:50-14:10	Plenary Speaker Prof. Dr. Buket Aksu - Altinbas University, Türkiye Industry 5.0 and Society 5.0







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14:10-14:30 Plenary Speaker

Prof. Dr. Hakan Gür - Department of Metallurgical and Materials Engineering, Middle East Technical University, Türkiye

The Place of Nondestructive Testing and Characterization in the Manufacturing Chains

Modified Under the Effect of Industry 4.0 and 5.0 Approaches

14:30-14:50 Plenary Speaker

Prof. Dr. Capt. Taner Albayrak - Piri Reis University, Türkiye C-Ports "Circular Economy in European Maritime Ports"

14:50-15:10 Plenary Speaker

Dr. Baris Yavas - University of Connecticut, USA

Use of Laser Glazing to Evaluate an Al-Cu-Fe-Cr Alloy Containing Icosahedral Quasicrystalline Dispersoids as a Candidate Material for Additive Manufacturing

15:10-15:30 COFFEE BREAK

15:30-17:30 Industry Professionals and Student Meeting (in Turkish)

15:30-16:30 POSTER SESSION

OCTOBER 12,2023,THURSDAY

ADVANCED CERAMICS AND COMPOSITES

MAIN HALL

Session Chairs: Prof. Dr. Cihangir Duran and Assoc. Prof. Dr. Takashi Shirai

09:30-09:50 Plenary Speaker

Assoc. Prof. Dr. Takashi Shirai - Advanced Ceramics Research Center, Nagoya Institute of

Technology, Japan

Fabrication of Functional Porous Ceramics by Gel-Casting and Its Applications

09:50-10:10 Plenary Speaker

Prof. Dr. Cihangir Duran - Metallurgical and Materials Engineering Department, Ankara Yıldırım

Beyazıt University, Türkiye

Compositional Engineering of Glass/Ceramic Composites for Low Temperature Co-Fired

Ceramic Applications

10:10-10:25 Semih Ates - Istanbul Technical University, Türkiye

(Cr,V),C,-T MXene Materials Derived from (Cr,V),AIC Max Phases Synthesized via Powder

Metallurgy Methods (1069)

10:25-10:40 Ayse Berksoy Yavuz - Istanbul Gedik University, Türkiye

Lead-Free Lithium-Modified KNN Spherical Shell Transducer Application and Their

Properties (1090)

10:40-10:55 Namik Kemal Gozuacik - Gebze Technical University, Türkiye

Effect of Nd Doping on Electrical Properties of 0.854BNT-0.12BKT-0.026BT Piezoceramics

(1088)

10:55-11:10 COFFEE BREAK







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ADVANCED CERAMICS AND COMPOSITES

MAIN HALL

Session Chairs: Prof. Dr. Cihangir Duran and Assoc. Prof. Dr. Takashi Shirai

11:10-11:25 Ezgi Yalcin - Gebze Technical University, Türkiye

Determination of Electrocaloric Properties of Nd-Doped PNN-PZT Ceramics and

Piezocomposites (1062)

11:25-11:40 Selva Astan - Sivas Cumhuriyet University, Türkiye

Dielectric and Electromechanical Properties of Textured BiScO₃-PbTiO₃ Based High Temperature Piezoceramics (1053)

ELECTRONIC, MAGNETIC AND OPTICAL MATERIALS

MAIN HALL

Session Chairs: Prof. Dr. Cihangir Duran and Assoc. Prof. Dr. Takashi Shirai

11:40-11:55 Ji-su Yuk - Gyeongsang National University, Korea, South

Structural and Electrical Properties of (La_{0.7}Sr_{0.3}) MnO₃/BiFeO₃ Multilayer Thin Films

Prepared by Sol-Gel Method (1075)

11:55-12:10 Volkan Kalem - Konya Technical University, Türkiye

Synthesis of Bl_{0.5}NaO_{0.5}Tio₃ Nanocrystalline Powders by a Solution Coating Method **(1043)**

12:10-13:30 LUNCH

NANOMATERIALS MAIN HALL

Session Chairs: Prof. Dr. Simona Cavalu and Ass. Prof. Marcin Nabialek

13:30-13:50 Plenary Speaker

Prof. Dr. Simona Cavalu - Faculty of Medicine and Pharmacy, University of Oradea, Romania

Metallic Nanoparticles: Sustainable Approach for Environmental and Biomedical

Applications

13:50-14:10 Plenary Speaker

Prof. Dr. Julietta V. Rau - Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche

(ISM-CNR), Italy

Antibacterial Strategies Applied to the Design of Ceramic Materials for Biomedical

Implants

14:10-14:30 Plenary Speaker

Assoc. Prof. Dr. Marcin Nabialek - Institute of Physics, Faculty of Processing Engineering and

Materials Technology, Czestochowa University of Technology (PCz), Poland

Methods for the Production of Bulk Iron-Based Amorphous and Nanocrystalline

Materials and their Properties

14:30-14:45 Cagin Bolat - Samsun University, Türkiye

Nanoparticle-Enhanced Machinability of Natural Fiber-Reinforced Composites: Effect of

Tool Diameter and Process Parameters (1086)

14:45-15:00 Mert Saracoglu - Istanbul Technical University, Türkiye

Tuning the Properties of Nano-Materials by Lattice Strain: Cause and Effects (1068)







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15:00-15:15 Mücahid Ozcan - Adıyaman University, Türkiye

Electrospinning of Zeolite ZSM-5 Reinforced PVA-Gelatin Nanofibers for Mains Water

Purification. (1031)

15:15-15:30 COFFEE BREAK

NANOMATERIALS MAIN HALL

Session Chairs: Prof. Dr. Simona Cavalu and Ass. Prof. Marcin Nabialek

15:30-15-45 Elif Nida Goksu - TOBB University of Economics and Technology, Türkiye

Design of Fly Ash Based Nanocomposites for Improvement Thermal Energy Storage

Capacity of the Nitrate Salts (1030)

SPECIAL TOPICS MAIN HALL

Session Chairs: Prof. Dr. Simona Cavalu and Ass. Prof. Marcin Nabialek

15:45-16:00 Hakan Kocak - Sağlam Metal San. ve Tic. A.Ş.,Türkiye

Footprint of the Cannon Casting Industry: Usulü's Siyaga (1063)

16:45 CLOSING CEREMONY

ENERGY MATERIALS HALL I

Session Chair: Assoc. Prof. Dr. Deniz Karahan

09:30-09:50 Plenary Speaker

Prof. Dr. Hasan Gocmez - Department of Metallurgical and Materials Engineering at Kutahya

Dumlupinar University, Türkiye

Metal Borides For Supercapacitor Electrodes Materials

09:50-10:05 Suna Avcioglu - Yıldız Technical University,Türkiye

Discovering The Potential of B_Ac-Bn Nanocomposite Powders for The Fabrication of

New-Generation Supercapacitor Electrodes (1060)

10:05-10:20 Ipek Tunc - Istanbul Technical University, Türkiye

Rice Husk-Derived Silica Anodes for Lithium-Ion Batteries (1059)

10:20-10:35 Vecihe Elif Imamoglu - Yıldız Technical University,Türkiye

Non-Catalytic Sol-Gel Synthesis of Nano/Micro B₄c Fibers and Its Utilization in Electrodes

for Supercapacitors (1061)

10:35-10:50 Ali Kemal Mak - Şişecam,Türkiye

Development and Characterization of Al³⁺ Based Electrochromic Structures by

Magnetron Sputtering Method (1017)

10:50-11:10 COFFEE BREAK







14:40-14:55

14:55-15:10

15:10-15:30

COFFEE BREAK

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ENERGY MATERIALS HALL I Session Chair: Asst. Prof. Dr. Suna Avcioglu 11:10-11:25 Gulgun Zehra Senyurt - Istanbul Technical University, Türkiye Cobalt Free Cathodes for High Performance Lithium-Ion Batteries (1021) 11:25-11:40 Cagla Ozgur - Middle East Technical University, Türkiye Nano-Porous High Entropy Oxide Electrocatalyst for Hydrogen Production (1049) 11:40-11:55 Cihan Kuru - Bilecik Seyh Edebali University, Türkiye An Electrochemical Approach for Borophene Production (1057) 11:55-12:10 Emre Ergen - Izmir Institute of Technology, Türkiye Coating of La_{0.3}Ca_{0.7}Fe_{0.7}Cr_{0.3} Cathode Layers on GDC by ESD **(1052)** 12:10-13:30 LUNCH **RECYCLING AND SUSTAINABILITY HALL I** Session Chair: Assoc. Prof. Dr. Seref Sonmez 13:30-13:50 **Plenary Speaker** Prof. Dr. Nese Sahin Yesilcubuk - Istanbul Technical University, Dept. Of Food Eng., Türkiye Exploring the Potential of Food Processing Residues for Biopolymers as Biodegradable **Packaging Materials and Coatings** 13:50-14:10 **Plenary Speaker** Prof. Dr. Selim Senkan - Department of Chemical and Biomolecular Engineering University of California Los Angeles (UCLA), USA Catalysis/Materials Science Meets Artificial Intelligence: A New Path for Sustainability Viorica Ghisman - Dunarea de Jos University of Galati, Türkiye 14:10-14:25 Recycling Waste Steel Slag to Improve the Soil Acidity (1077) Simge Tarkuc - Arçelik Co.,Türkiye 14:25-14:40 The Optimization of the Working Parameters of Bipolar Membrane Electrodialysis System for Acid and Base Solution Production (1072)

The Production of Fused Alumina by EAF using Aluminum Dross as Raw Material (1058)

Development of Flexible Waterproofing Mortar from Geopolymer (1012)

Meltem İpekci Terzioglu-Istanbul Technical University-Kalekim Construction Chemicals Co., Türkiye

Necdet Oguz Yanar - Istanbul Technical University, Türkiye







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RECYCLING AND SUSTAINABILITY HALL I

Session Chair: Assoc. Prof. Dr. Seref Sonmez

15:30-15:45 Bilge Turanlı - Istanbul Technical University,Türkiye

The Pyrorefining of Waelz Oxide in Rotary Kiln (1055)

15:45-16:00 Hayri Atalay Kul - Proses Makina, Türkiye

PCAM Production from Spent Lithium Batteries (1056)

ARCHEOMETRY, TRADITIONAL CLAY-BASED MATERIALS HALL I

Session Chair:Asst. Prof. Dr. Ozden Ormanci

16:00-16:15 Memduha Zeynep Atasayar - Mimar Sinan Fine Arts University, Türkiye

Mineralogical Characterization of Iron Age Ceramic Fragments (1089)

BIOMATERIALS, BIOTECHNOLOGY AND DRUG DELIVERY SYSTEMS HALL II

Session Chairs: Prof. Dr. Corrado Piconi and Prof. Dr. Catalin Popa

09:30-09:50 Plenary Speaker

Prof. Dr. Corrado Piconi - Italian National Research Council, Institute for the Science and

Technology of Ceramics, (CNR-ISTEC) Faenza (RA), Italy Dental Implants: From Gold to Zirconia, and Beyond

09:50-10:10 Plenary Speaker

Prof. Dr. Catalin Popa - Technical University of Cluj-Napoca, Romania

Microscopic Level Physical Effects in Medical Applications

10:10-10:25 Alina Robu - National University of Science and Technology Politehnica Bucharest, Romania

The Influence of the Test Environment and the Composition of Magnesium Alloys on the

Degradation Process (1092)

10:25-10:40 Ozden Kisacik - TENMAK-BOREN, Türkiye

Biocompatibility Study of Lab, Films Produced By Magnetron Sputtering (1051)

10:40-10:55 Hakan Yilmazer - Yıldız Technical University, Türkiye

Exploring the Potential of Zinc-Based Copper and Manganese Alloy as a Novel Material

for Urethral Stents (1015)

10:55-11:10 COFFEE BREAK

POWDER METALLURGY HALL II

Session Chair: Assoc. Prof. Dr. Mustafa Guven Gok

11:10-11:25 Mustafa Guven Gok - Gaziantep University, Türkiye

Finite Element Modelling of the Spark Plasma Sintering Process of Alumina (1029)

11:25-11:40 Berk Senyurt - Bursa Technical University

Mechanical Activation Assisted Synthesis and Characterization of Cr. AIC Max Phase (1044)









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Oznur Oguz - Sakarya Universty, Türkiye 11:40-11:55

Production of Activated Carbon via Pyrolysis of Olive Seeds Using Co, Gas (1020)

11:55-12:10 Zeynep Ilhan - Sakarya University, Türkiye

Activated Carbon Obtained in Dynamic System from Agricultural Product Wastes in

Sakarya Region (1016)

SINTERING AND ADVANCED SINTERING

HALL II

Session Chair: Assoc. Prof. Dr. Mustafa Guven Gok

12:10-12:25 Metin Özbekler - İzmir Institue of Technology, Türkiye

Sintering and Densification Behavior of Nanoparticle Infiltrated Alumina Scaffolds (1047)

12:25-13:30 Lunch

MATERIALS CHARACTERIZATION AND COMPUTATIONAL MODELING

HALL II

Session Chair:Prof. Dr. Cengiz Kaya

13:30-13:45 Ammar Aksoy - Istanbul Technical University, Türkiye

New Insights and Understanding of Hydrogen Embrittlement of Duplex Stainless Steel:

Combined DFT Modelling and Experimental Study (1011)

13:45-14:00 Daniela Laura Buruiana - Dunarea de Jos University of Galati, Romania

Effect of Immersion Time on Corrosion Behaviour of S235JR Steei in 3.5% NaCL and Drink

Water (1078)

14:00-14:15 Cansinem Tuzemen Gundogan - Istanbul Technical University, Türkiye

High Entropy Alloys for High Temperature Applications: Design, Production and

Characterization (1023)

14:15-14:30 Dogus Zeren - Norm Cıvata San. ve Tic. A.Ş., Türkiye

A Comparison of Static and Fatigue Performance of High-Strength Bolts Depending on

Heat Treatment Process (1046)

14:30-14:45 Eray Abakay - Sakarya University, Türkiye

Electrochemical Corrosion Properties of Bismuth Dopped AZ91D (1036)

14:45-15:00 Zeliha Idil Yondu - TEI TUSAS Engine Industries, Türkiye

An Evaluation of Titanium Forging Microstructure for Aerospace Applications (1035)

15:00-15:15 Yigit Buga - TEI TUSAS Engine Industries, Türkiye

An Evaluation of Titanium Forging Microstructure for Aerospace Applications (1034)

COFFEE BREAK 15:15-15:30







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MATERIALS CHARACTERIZATION AND COMPUTATIONAL MODELING HALL II		HALL II	
	Session Chair: Prof. Dr. Figen Kaya		
15:30-15:45	Nihal Yumak - Afyon Kocatepe University, Türkiye Production of Functionally Graded Panels by the Additive Manufacturing Method and Investigation of Their Acoustic Behavior (1084)		
15:45-16:00	Ahmet Sefa Atalay - Kocaeli University, Türkiye The Effect of Mn Substittion on Mechanical Properties of Alcr Investigation (1019)	_z B ₂ : An Computational	
16:00-16:15	Berke Erk - ONATUS Vision Technologies, Türkiye A Study of Microstructure Evolution During Heat Treatment of Computational Materials Engineering (1064)	of Bearing Steels Using	
16:15-16:30	Nihal Yumak - Afyon Kocatepe University, Türkiye Manufacturing of Functionally Graded Porous Materials by the Method and Investigation of Compressive Strength (1085)	ne Additive Manufacturing	
16:30-16:45	Umut Can Cingoz - Yildiz Technical University, Türkiye Characterization of PA 12 Matrix Composites Produced by Se Method (1050)	lective Laser Sintering	
COATINGS		HALL III	
	Session Chair: Asst. Prof. Dr. Faiz Muhaffel		
09:30-9:50	Plenary Speaker Prof. Mirosław Bonek - Silesian University of Technology Gliwi Formation of the Structure and Properties of the Surface Lay by the Laser Treatment		
09:50-10:05	Cenk Turkuz - Titanit Ultrahard Coatings Company, Türkiye A New Kind of Passivation/Pvd Coating Combination for Dent Autoclave Cycles and Temperature Measurements During Dr		
10:05-10:20	Hamid Bolvardi - PLATIT AG, Switzerland Innovations in Thin Film Technologies and Properties to Meet Requirements (1026)	t Industrial Application	
10:20-10:35	Faiz Muhaffel - Istanbul Technical University, Türkiye Enhancing Surface Properties of Titanium-Based Biomateria Oxidation And Subsequent Hydrothermal Treatment (1037)	ıls Through Micro-Arc	
10:35-10:50	Alina Crina Muresan - Dunarea de Jos University of Galati, Ror		
	Electrodeposition and Characterisation of Polymer-Zinc Com	posite Coatings (1079)	







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11:10-11:25	Cennet Yildirim - TENMAK-Boron Research Institute / Istanbul Technical University, Türkiye Production of SiC Foam Intended for Wide Band Radar Absorbing Material (1071)
11:25-11:40	Irem Elmas Kant - Istanbul Technical University, Türkiye Investigation the Structural Effect of Amine-Based Chain Extenders on Morphology and Mechanical Characteristics of the Polyurethane-Urea Coatings (1065)
COATINGS	HALL III
	Session Chair: Asst. Prof. Dr. Faiz Muhaffel
11:40-11:55 11:55-12:10	Zeynep Sirel - Sarkuysan Elektrolitik Bakır San. ve Tic. A.Ş., Türkiye Investigation of the Effects of Copper Wire Surface Defects on the Final Product Quality in Enamelled Wires (1038) Ugur Iz - Polat Makine A.Ş., Türkiye Investigation of Wear Performance and Microstructural Properties of Ni-B-Si Alloy with Tungsten Carbide Powder by Coating with PTA Method (1083)
12:10-13:30	Lunch
METALLURGY	HALL III
	Session Chair: Asst. Prof. Dr. Fahir Arisoy
13:30-13:45	Marzhan Mukhametkhan - Karaganda Industrial University,Kazakhstan Problems of Processing Iron-Containing Wastes of Metallurgical Production (1082)
13:45-14:00	Mikko Jokinen - Luxmet Oy,Finland The Luxmet Story - From Research to Industrial Applications: Helping the Steel Industry in the Green Transition (1074)
14:00-14:15	Pelin Sezer - Akdaş Döküm Sanayi ve Ticaret A.Ş.,Türkiye Duplex Stainless Steel (DSS): Reducing the Intermetallic Phases (1042)
14:15-14:30	Yagmur Laleci - Akdaş Döküm Sanayi ve Ticaret A.Ş.,Türkiye Effect of Tempering Heat Treatment on Microstructure and Mechanical Properties of Nickel Aluminum Bronzea (1040)
14:30-14:45	Volkan Karakurt - Sağlam Metal San. ve Tic. A.Ş.,Türkiye Effect of Cryogenic Heat Treatment on Microstructure and Mechanical Properties of CuAl ₁₄ Femn2co Aluminum Bronze (1039)
14:45-15:00	Merve Oper - Kadir Has University, Türkiye Linking Theory and Practice: A Comprehensive Study of Natural Convection Cooling in Horizontal Hot Coils (1010)
15:00-15:15	Cihan Yakupoglu - Ak-Pres Otomotiv A.Ş, Türkiye Investigation of Compatibility of Al 6016 Series Sheets with DP800 Series Sheets by CMT Method (1007)







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COFFEE BREAK 15:15-15:30

METALLURGY		HALL III
	Session Chair: Asst. Prof. Dr. Fahir Arisoy	
15:30-15-45	Cisem Celik Kurtulan - Istanbul Technical University,Türkiye The Effect of Calcination on Cerium Dissolution for Eskisehir Bastn	nasite Ores (1006)
15:45-16:00	Ozlem Kirmizi - PMS Aluminyum San. ve Tic. A.Ş Improving Deep Drawing Capability with Heat Treatment Paramet Alloy (1003)	ers in EN AW 1050