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International Metallurgy and Materials Congress

Uluslararası Metalurji ve Malzeme Kongresi

10-12

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20th INTERNATIONAL METALLURGY MATERIALS CONGRESS

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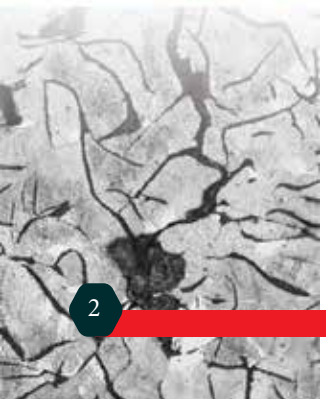

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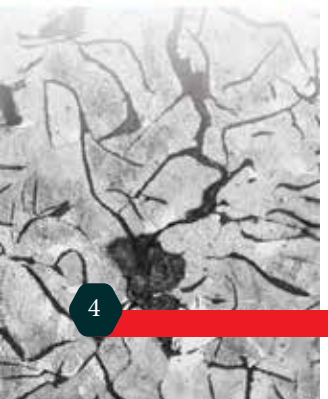

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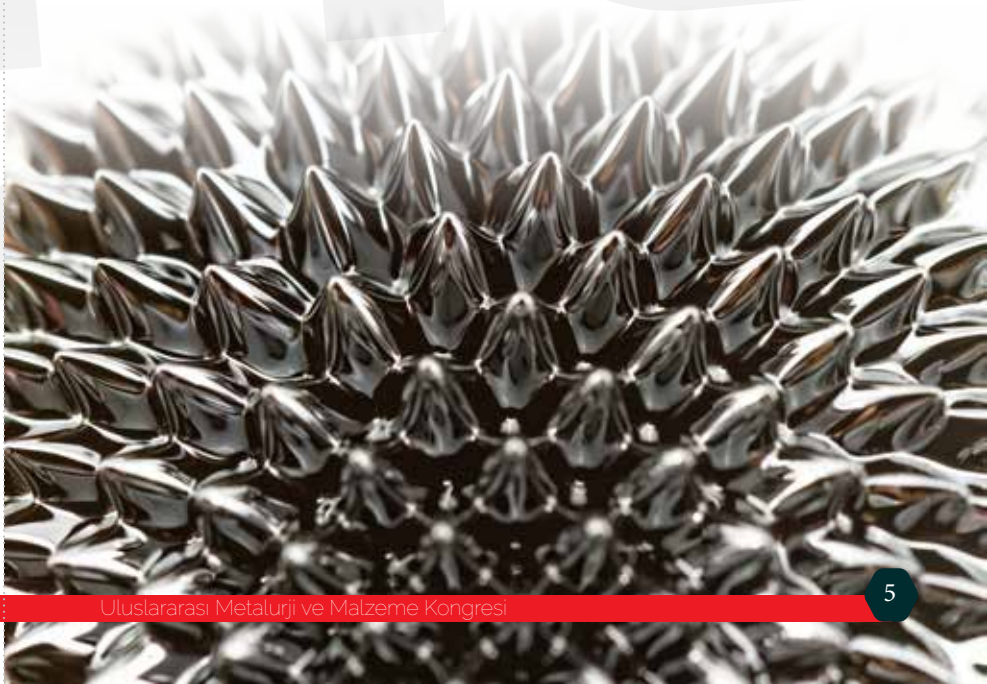

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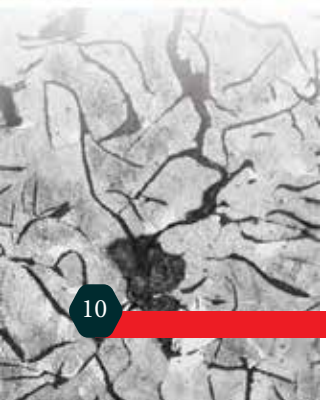


Invited Speakers
Davetli Konuşmacılar

Rodrigo Martins
(Prof. Dr.)
President of the European Academy of Sciences, Portugal

S. Pamir Alpay
(Prof. Dr.)
University of Connecticut, USA

Diran Apelian
(Prof. Dr.)
University of California, USA

Ahmed Elmarakbi
(Prof. Dr.)
Northumbria University, UK

Fathi Habashi
(Prof.Dr.)
Laval University, Canada

Makoto Hasegawa
(Prof. Dr.)
Yokohama National University, Japan

Alpagut Kara
(Prof. Dr.)
Eskişehir Technical University, Turkey

Sanjay Mathur
(Prof. Dr.)
University of Cologne, Germany

Frank Mücklich
(Prof. Dr.)
Saarland University, Germany

Maria Omastova
(Dr.)
Slovak Academy of Sciences, Slovakia

Cengiz Özkan
(Prof. Dr.)
University of California, USA

Marcel A.J. Somers
(Prof.Dr.)
Technical University of Denmark, Denmark

Mingyue Sun
(Prof. Dr.)
Chinese Academy of Sciences, China

Muhammet S. Toprak
(Prof. Dr.)
KTH Royal Institute of Technology, Sweden

Cong Wang
(Prof. Dr.)
Northeastern University, China

Rodrigo Martins (Prof. Dr.)
President of the European Academy of Sciences and President Elected of the International Union of Materials Research Societies, Portugal

"Future Perspectives of Materials Research"

Rodrigo Martins is full professor in Materials Science Department of NOVA SCHOOL OF SCIENCE AND TECHNOLOGY | FCT NOVA, a Fellow of the Portuguese Engineering Academy since 2009 and a member of the European Academy of Science since 2016. He has award-winning the gold medal of merit and distinction by the Almada Municipality for his R&D achievements.

Currently he is the:

- Director of the Centre of Excellence in Microelectronics and Optoelectronics Processes of the Institute of New Technologies, CEMOP/Uninova;
- Head of the group of Materials for Electronics, Optoelectronics and Nanotechnologies (MEON) of CENIMAT/I3N;
- President of the European Academy of Sciences - EurASc;
- Member of the Advisory Board of Horizon 2020 on DG Research and Innovation (Advanced Materials, Nanotechnology, Biotechnology and Manufacturing);
- Chair of The European Committee Affairs of European Materials Research Society, E-MRS;
- Chair of The Global Leadership and Service Award Committee of the International Union of Materials Research Societies, IUMRS;
- Vice-Chair of Energy, Materials Industry Research Initiative, EMIRI.

Rodrigo Martins has been involved in the pioneer European research on amorphous silicon semiconductors and pioneer with is group worldwide activity related to passive and active oxides, the so called transparent electronics and it is one of the inventors of the so-called paper electronics, where paper is exploit not only as a substrate but also as a functional component in active devices.

He published over 700 papers and during the last 10 years got more than 14 International and national prizes and distinctions for his work (e.g: Lisbon Energy Live Expo, Innovation prize, 2012 (Solar tiles); European Patent Office Innovation nomination 2016 (paper electronics); Exame Informática Innovation prize 2016 (paper solar cells).

S. Pamir Alpay (Prof. Dr.)
University of Connecticut, USA

"Addressing Fundamental Problems in Metallurgy via First Principles Models: Point Defects, Surface Chemistry, and Initial Stages of Precipitation"

Prof. Dr. Pamir Alpay is the General Electric Endowed Professor in Advanced Manufacturing in the Department of Materials Science and Engineering and Department of Physics of the University of Connecticut (UConn). He is presently the Executive Director of UConn's Tech Park, leading the University's efforts to increase strategic partnerships with industry in a state-of-the-art research and development facility. Dr. Alpay's research is primarily focused in materials modeling. His research employs a palette of theoretical tools ranging from ab initio computations to basic thermodynamic models. Dr. Alpay is an elected member of the Connecticut Academy of Science and Engineering (CASE) and a Fellow of the American Physical Society (APS) and the American Ceramic Society. He is the recipient of several awards including the National Science Foundation's CAREER grant in 2001, the UConn School of Engineering Outstanding Junior Faculty Award in 2004, the UConn School of Engineering Outstanding Faculty Advisor Award in 2013. He has over 200 peer-reviewed journal publications and conference proceedings, four invited book chapters, and an invited book co-authored on compositionally graded ferroelectric materials.

Diran Apelian (Prof. Dr.)
University of California, USA

"Materials Recovery and Reuse for the 21st Century: A call for action and the need for a paradigm change."

Diran Apelian is Distinguished Professor of Materials Science and Engineering at the University of California, Irvine. He is also the Founding Director of the Metal Processing Institute (MPI) at Worcester Polytechnic Institute (WPI).

He received his B.S. degree in metallurgical engineering from Drexel University in 1968 and his doctorate in materials science and engineering from MIT in 1972. He worked at Bethlehem Steel's Homer Research Laboratories before joining Drexel University's faculty in 1976. At Drexel he held various positions, including professor, head of the Department of Materials Engineering, associate dean of the College of Engineering and vice-provost of the University. He joined WPI in July 1990 as WPI's Provost. In 1996 he returned to the faculty and led the activities of the Metal Processing Institute, which he founded. In 2019, he joined the faculty at UCI.

He is credited with pioneering work in various areas of metal processing – specifically in molten metal processing, alloy development, solidification and casting, surface engineering, spray casting/forming, and powder metallurgy. During the last decade, he has worked on sustainable development issues, and particularly, resource recovery, reuse, and recycling. Apelian is the recipient of many distinguished honors and awards – national and international; he has over 700 publications to his credit; and serves on several technical, corporate and editorial boards. During 2008/2009, he served as President of TMS. He served as Chair of the ASM Educational Foundation Board of Trustees (2016-2018). Apelian is a Fellow of TMS, ASM, and APMI; he is a member of the National Academy of Engineering (NAE), National Academy of Inventors (NAI), and the Armenian Academy of Sciences (AAS). He is a recipient of the 2016 Bernard Gordon Prize for Innovation in Engineering Education (with Kris Wobbe, Art Heinricher and Rick Vaz.)

Ahmed Elmarakbi (Prof. Dr.)
Northumbria University, UK

"Novel Advanced Automotive Graphene Nanocomposites: Challenges and Future Perspectives"

He obtained his PhD in Mechanical Engineering from University of Toronto, Canada in September 2004. After three years as a NSERC/JSPS fellow in Canada and Japan, he moved to the University of Sunderland in 2007 (Senior Lecture 2007-2011; Reader, 20011-20012; Professor 2012-2018). Recently, he moved to Northumbria University as Professor of Automotive Composites and Head of Subject (Mechanical Engineering). He is also a Visiting Professor of Vehicle Lightweighting at Hunan University.

His research work focuses on developing robust, reliable and sustainable material solutions (based on graphene and related materials) and implementing new concepts and technologies in industrial scale. It aims to establish and strengthen the link between the development of novel advanced nanocomposites with unique synthesis and functionalities, and the improvement of the modelling capability and the need for securing refined results for the design of real structural components and energy conversion/storage systems.

His work outcomes are recognised both nationally and internationally as evident from over 90+ plenary lectures, invited talks, keynotes and presentations; over 150 peer-reviewed research papers and patents. He has received many prestigious awards and grants, including EPSRC (UK), NSERC and OGS (Canada), JSPS (Japan), FP7, Horizon2020, and Graphene Flagship (EU), and several direct national and international projects. He is also part of the €1bn European Graphene Flagship and leading composites for structural application task. The pioneering project is exploring how graphene can be used to create lighter, stronger, safer and more energy-efficient aerospace and automotive structures. His role leading the graphene structural application in the flagship – alongside partners in Italy, Spain and Germany has created many opportunities to network and engage around the world. In his role, he combines novel 'concept' materials with the latest safety design approaches through the development of advanced ultra-light graphene-based polymer materials, efficient fabrication and manufacturing processes, and life-cycle analysis to reduce the environmental impact of future structures. In addition, his work has come to the attention of the Chinese Government via Hunan University. He is one of only ten professors worldwide invited to join the prestigious Talents-111 project. This Chinese Government led initiative selects leading scientists and funds intensive laboratory-based research projects. The project into vehicle body lightweighting is led by Hunan University and will run for four years from 2016-2020.

He has been involved in various professional activities: Expert Reviewer for FP7, Horizon2020, EPSRC, Ontario Research Fund and Cyprus Research Promotion Foundation; European Science Foundation Expert; Founding Editor-in-Chief of International Journal of Automotive Composites; Editorial-board member, and reviewer, of high-impact journals; Organiser of international conferences; and Chairman of the International Conference on Automotive Composites. He is also member of CSME, ASME, SAE, JSAE, FISITA, IMechE, Engineering Council (CEng), and Member of the UK Research and Innovation Future Leaders Fellowships (UKRI FLF) programme Peer Review College (PRC).

Fathi Habashi (Prof. Dr.)
Laval University, Canada

"The Future of Extractive Metallurgy"

Fathi Habashi (Professor Emeritus of Extractive Metallurgy at Laval University in Quebec City) holds a B.Sc. degree in Chemical Engineering from the University of Cairo (1949), a Dr. techn. degree in Inorganic Chemical Technology from the University of Technology in Vienna (1959).

He held the Canadian Government Scholarship at the Mines Branch in Ottawa (1960–1962), taught at Montana College of Mineral Science & Technology (1964–1967), then worked at the Extractive Metallurgical Research Department of Anaconda Company in Tucson, Arizona before joining the Department of Mining, Metallurgy and Materials Engineering at Laval University in 1970.

His research was mainly directed towards organizing the unit operations in extractive metallurgy and putting them into a historical perspective. He is an Honorary Professor at the Technical University of Oruro in Bolivia, Honorary Citizen of the city of Oruro, Governor at the Fondation de l'Université Laval, and Member of Le Cercle des Ambassadeurs in Québec City. He is a member of a number of Editorial Boards of extractive metallurgy journals and Chairman of the Historical Metallurgical Committee of the Metallurgical Society of the Canadian Institute of Mining, Metallurgy, and Petroleum.

Habashi was guest professor at a number of foreign universities. He is the author of a dozen internationally recognized books, including Principle of Extractive Metallurgy, Handbook of Extractive Metallurgy. In addition to the four industrial patents he holds, he has written more than a hundred scientific articles and about a hundred others devoted to his most recent subject of interest, the history of metallurgy. Habashi has been a guest speaker on more than 70 occasions in research centers or conferences around the world.

In 1998 he was named a Fellow of the Canadian Institute of Mining, Metallurgy, and Petroleum and in 1999 he received its silver medal. The St. Petersburg Institute of Mining in Russia awarded him an honorary doctorate of science in recognition of his immense contribution to the field of metallurgy. He also holds Dr. Sc. honorus causa from the the National Technical University in Lima, Peru (2010).

Makoto Hasegawa (Prof. Dr.)
Yokohama National University, Japan

"Advances in Thermal Barrier Coatings: Current Status and Future Perspectives"

Makoto Hasegawa obtained his Master of Engineering (1999) and Doctor of Engineering (2002) from Yokohama National University, Japan. He worked as a postdoctoral research fellow and research associate in The University of Tokyo from 2002 to 2006 and a research associate in Yokohama National University from 2006 to 2010. From 2011, he became an associate professor in Yokohama National University. He stayed in the Institute of Physics of Materials, Czech Republic as a visiting researcher from 2012 to 2014 under the program of "Strategic Young Researcher Oversea Visits Program for Accelerating Brain Circulation" founded by JSPS, and collaborated with Prof. Ivo Dlouhy. He is currently focused on the researches of aerosol deposition method, which enables to form dense and crystalline ceramic coatings at room temperature in order to develop environmental barrier coatings and ultra-high-temperature ceramics coatings. Improvement of interfacial delamination toughness of the thermal barrier coatings by controlling the yield strength of bond coat layer, and high temperature deformation of intermetallic compounds and alloys in order to control microstructure and preferential orientation of materials are also performed.

Alpagut Kara (Prof. Dr.)
Eskişehir Technical University, Turkey

"Current Status of Industrial and Advanced Ceramics in Turkey"

Graduated from Istanbul Technical University/Turkey as a Metallurgical Engineer in 1988. He had his MSc degree in Engineering Ceramics from University of Leeds/UK in 1991. He received his PhD degree from University of Bath/UK in 1999. Since then, he has been working as a lecturer in the department of Materials Science and Engineering of Anadolu University (recently as Eskisehir Technical University)/Turkey. He has also been acting as the president and R&D coordinator of the Ceramic Research Centre (SAM), university-industry joint research centre founded by Anadolu University and Turkish ceramic manufacturing companies, since 2010. His research activities are in both processing of industrial and advanced ceramics and composites. Up till now, he has published around 100 papers in international and national journals and conferences. He has also been inventor in several national and international patents. Apart from these academic activities, he is one of the co-founders of MDA Advanced Ceramics, a spinoff company, being active in the development of advanced ceramics and composites for ballistic, wear and cutting tool applications since 2004. In addition, he is the head of Turkish Ceramic Society (TSD).

Sanjay Mathur (Prof. Dr.)
University of Cologne, Germany

"Chemically Processed Inorganic Nanostructures for Energy and Health Applications."

Sanjay Mathur is the director of the Institute of Inorganic Chemistry at the University of Cologne in Germany. He is the Co-Director of the Institute of Renewable Energy Sources at the Xian Jiao Tong University, Xian, China and a World Class University Professor at the Chonbuk University in Korea. He also holds Visiting Professorships at the Central South University, China, Tokyo University of Agriculture and Technology, Japan and National Institute of Science Education and Research (NISER), India. He has been awarded the Honorary Doctorate of the Vilnius University in 2016.

His research interests focus on application of nanomaterials and advanced ceramics for energy technologies. He holds six patents and has authored/co-authored over 275 original research publications and has edited several books. He is a Titular Member of the International Union of Pure and Applied Chemists (IUPAC) and a member of the ISO Technical Committee on Nanotechnologies.He serves as the Editor for Journal of Electroceramics, and as the Principal Editor of J. Mater. Research. He is also an Associate Editor for International Journal of Applied Ceramics Technology, International Journal of Nanoscience and Nanomaterials. He is also on the Editorial Boards of the journals International Journal of Nanotechnology, Materials, Journal of Ceramic Science and Technology, and NanoEnergy.

He is an Academician of the World Academy of Ceramics. He also acts as the "International Ambassador" of the University of Cologne. He is a recipient of the fellowships of the Alexander von Humboldt Foundation, and stipend of the Federation of German Chemical Industries for excellence in research. He was an ASM International-Indian Institute of Materials (ASM-IIM) visiting lecturer in 2009. He was given the Global Star Award of the ECD of The American Ceramic Society in 2010. He had organized and chaired several international and national conferences and Symposia.

He has served as the Chair of the Engineering Ceramics Division of ACerS. He also chaired the Jeppson Award Committee of ACerS. He is a member of the Advisory Board of the Federation of German Materials Science (DGM) and also serves on the Advisory Committees of a number of international academies and research institutions. He is on the Board of the German Chemical Industries Network CHEMCOLOGNE and an appointed member of the Technical Advisory Board of the global company Henkel. He is appointed on the Review Advisory Panel of the CSIR, South Africa and also serves as International Advisor to Korean Institute of Industrial Technology (KITECH), Incheon, Korea and Vice-President of the Thin Film Society, Singapore.

Frank Mücklich (Prof. Dr.)
Saarland University, Germany

"New Surfaces by Direct Laser Interference Patterning: Optimal Functional Properties due to Fast and Precise Micro-Nano Structuring"

Since 1995 Prof. Frank Mücklich heads the Institute for Functional Materials at Saarland University, which is dedicated for basic research in Materials Science. Since 2009 he is also founding director of the Material Engineering Center Saarland (MECS), which specializes in materials engineering transfer to applications. 2008 he founded the European School for Materials (EUSMAT.net), which fosters international talents from Bachelor to PhD in worldwide collaborations and in four languages (English, German, Spanish, French).

Frank Mücklich's main research interests are, on the one hand, the advanced 3D analysis of the complex microstructure on the micro, nano and atomic scale including artificial intelligence capabilities and, on the other hand, the development of new bio-inspired functional surfaces. For this purpose he developed with his team the Direct Laser Interference Patterning (DLIP), an extremely efficient micro/nanostructuring technique using interfering laser beams from high power lasers. Pulse lengths from nanoseconds to femtoseconds are used for DLIP.

Frank Mücklich has served as President of the German Materials Society, and is deputy spokesman at the German Academy of Science and Engineering (acatech) for Materials Science and Engineering. He is a Fellow of the American Society for Materials and has received numerous scientific awards, including the Henry Clifton Sorby Award of the American Society for Materials (ASM) for his lifetime achievements in microstructure research. He was awarded the Berthold Leibinger Laser Innovation Prize for the development of the DLIP technique. He has published more than 500 scientific papers and is editor of the tradition-rich application-oriented journal "Practical Metallography - Preparation, Imaging and Analysis of Microstructures".

IMMC 2021

Maria Omastova (Dr.)
Slovak Academy of Sciences, Slovakia

"Polymeric Composites with Novel 2D Nanofillers Mxenes"

Mária Omastová, PhD., D.Sc., received Ph.D. in macromolecular chemistry in 1993 and D.Sc. in 2009. After postdoctoral tenure at the Leibniz Institute of Polymer Research Dresden, Germany, she joined the Polymer Institute, Slovak Academy of Sciences (PI SAS).

Her research interests are focused on conducting polymers, conductive polymeric micro- and nano-composites, their application as sensors and actuators, modification of carbon based nanofillers, 2D nanofillers as MoS2, MXenes, surface and interphase characterization of polymeric, organic and inorganic materials by X- ray photoelectron spectroscopy, etc.

M. Omastová is now head of Department of Composite Materials at PI SAS (http://www.polymer.sav.sk/OKM)

She published about 170 peer-reviewed papers, and 6 book chapters, which are cited more than 3 900 times.

In the ratings of Academic Ranking and Rating Agency (ARRA) in 2011 'Identification of high scientific teams and their members in Slovak Academy of Sciences' her team was ranked in the top category. For scientific achievements she was awarded as the Scientist of the Year 2016 in Slovakia and in 2019 by Pribina Cross, 1st Class by the President of the Slovak Republic.

She has been principal investigator of 10 national projects, and many bilateral and multilateral projects. She is developing a wide international collaboration that resulted in number of projects and most recently in the project of 7 RP EU, Horizon 2020, and MEraNet. The international recognition of her work was reflected in great numbers of invited lectures on international conferences e.g. International Conference on Advanced Electromaterials 2017 Jeju, Korea, International Conference on Structural Nano Composites, Berlin, 2018, 7th International Seminar on Modern Polymeric Materials, Kraków, 2019, and many others.

She has chaired several international conferences reflecting research of nanoparticles and nanocomposites, as the 10th anniversary meeting EUROFILLERS 2013, and conference New Trends in Solar Cells 2016, both were held in Bratislava, Slovakia. She is reviewer in reputable scientific journals

Cengiz Özkan (Prof. Dr.)
University of California, USA

"Design of Materials for Advanced Energy Storage"

Prof. Cengiz Ozkan is a faculty member in the Department of Mechanical Engineering at the University of California, Riverside. He is a visionary scientist and inventor with exceptional contributions to engineering research and innovation, and societal service with international distinction. Dr. Ozkan received his Ph.D. Degree in Materials Science and Engineering at Stanford University in 1997. Before joining UCR in 2001, Dr. Ozkan was employed in the semiconductor industry. Research in the Ozkan group involves the design and synthesis of nanoscale materials for energy storage, nanoelectronics and sensors applications; fundamental understanding and characterization of electrical and optical properties of nanoscale materials; and nanoscale structure–property relationships. Dr. Ozkan has been a member of several prestigious National Centers including the SRC MARCO Center for Functional Engineered Nano Architectonics at UCLA; the SRC STARnet Center for Spintronic Materials, Interfaces and Novel Architectures at UMN; the NSF Nanoscale Science and Engineering Center for Hierarchical Nanomanufacturing at UMASS, and the NSF Materials Research Science and Engineering Center at UMASS. Dr. Ozkan has over 600 technical publications including journal papers, conference proceedings, conference abstracts, and book chapters; 6 Edited Books; 84 invention disclosures; 12 issued US patents; 19 pending patent applications; has given more than 150 presentations worldwide; has 18 intellectual properties licensed by the industry; he is a co-founder of two start-up companies; and he is serving as an Associate Editor for the Journal Energy Storage (Wiley). His research received significant media attention in many news outlets including The Wall Street Journal, Huffington Post, The Forbes, BBC, Discovery Channel, MTV News, Physics Today, Popular Science and Materials Today. He is the recipient of many honors including The European Advanced Energy Materials Award by the IAAM; The John J. Guarrera Engineering Educator of the Year by the Engineers' Council; The Climate Global Winner Award by the European Clean-Tech Initiative; The Distinguished Engineering Educator Award by the Engineers' Council; and The Inventor Award by the SRC. Just recently, Dr. Ozkan has been appointed as an Honorary Professor at the Hong Kong Polytechnic University. He co-organized and chaired nearly 40 conferences worldwide, and he will be serving as a Meeting Chair for the Fall 2021 Meeting of the Materials Research Society (MRS), in Boston, MA.

Marcel A.J. Somers (Prof. Dr.)
Technical University of Denmark, Denmark

"Microstructure Optimization in Additively Manufactured Metals through Heat and Surface Treatment."

arcel A.J. Somers (1960) received his M.Sc. degree in physical metallurgy (1985) and his Doctor's degree (1989) from Delft University of Technology (NL). In 89/90 he was with Philips Center for Materials, Technology and Innovation as section leader in advanced materials characterization. He returned to Delft University of Technology as assistant professor in physical chemistry of the solid state in 1990 and was appointed full professor of physical metallurgy at the Technical University of Denmark in 1997. A red thread through Somers' scientific work is gas-metal interactions in surface engineering with interstitials and gaseous corrosion along with advanced microstructure characterization. Furthermore, his interests encompass martensitic transformations at cryogenic temperatures and thermodynamics and diffusion modelling. His work is of fundamental character with a technological importance and spin-off for industrial application. In 2000 he established a university group in Materials and Surface Engineering, which he has headed since. Marcel Somers is an enthusiastic educator in physical metallurgy, materials characterization and surface engineering and has co-authored over 300 contributions in international journals, conference proceedings and chapters in books. He is co-editor of the comprehensive book "Thermochemical Surface Engineering of Steels". Moreover, he is co-inventor of 17 patents/patent applications and co-founder of the industrial spin-outs Expanite A/S and TRD Surfaces ApS. He was awarded the Brandsma prize (1989); ASM European Lecturer (1999); Reinholdt W. Jorck prize (2001); DTU's innovation prize (2007); Alex Foss gold medal for rewarding contributions to engineering sciences (2014); Fellow of ASM International (2016) and the IFHTSE Medal (2019). He is an elected member of the Danish Society for Technical Sciences (ATV) since 1999 and was chairman of the Danish Research Council for Technology and Production Sciences (FTP) from 2007 to 2009.

Mingyue Sun (Prof. Dr.)
Chinese Academy of Sciences, China

"Novel Technologies for Forging of Superalloys with Controlled Microstructure"

Dr. Ming-Yue Sun is Professor and Deputy Director of the Material Processing and Modeling Division, Institute of Metal Research, Chinese Academy of Sciences (IMR, CAS). His research is focused on novel forming and microstructure-properties controlling technology for large forgings.

When pursuing PhD in the same institute, he contributed significantly to key technologies of forging, microstructure control and shrink fitting for a 20 meters long crankshaft. The work was rated as excellent, gained 11 patents, and created new output value over 3 billion RMB in five major companies. The research won the Liaoning Science and Technology Silver Award.

He also led a comprehensive study on microstructure control of SA508-3 steel for shape forming process, the results of which have been applied in forging companies and successfully produced several key components with ~5m in diameter of the AP1000 nuclear power plants. This project garnered 8 patents and was awarded Silver State Science and Technology Prize.

He sits on the Academic Committee of Chinese Plastic Engineering Society and Youth Committee of Chinese Materials Research Society. He holds over 50 patents and published over 40 peer-reviewed papers, including 70 technical reports for companies.

Recently, he promoted a novel metal processing method coined as 'Additive Forging'. This technology can obtain homogeneous large steel products without preparing a heavy ingot, which effectively avoids serious solidification defects in large section steel. This novel method has been applied in the support ring with 15m in diameter for the 4th generation nuclear power plant, and main journal with 7.5m in length for water turbine. It is recognized as a disruptive technology and offered outstanding contributions to heavy forgings. In 2017, he was elected associate academician of Asian Pacific Academy of Materials.

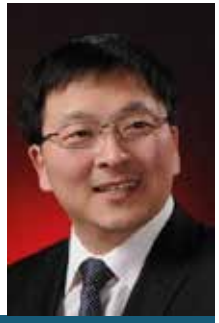
Muhammet S. Toprak (Prof. Dr.)
KTH Royal Institute of Technology, Sweden

"Synthesis of Nanoceramic Powders and Their Biomedical Applications"

Muhammet S. Toprak received his B.Sc. in Chemistry Education and M.Sc. on Inorganic Chemistry from the Middle East Technical University (METU, Ankara-Turkey). During the PhD studies at METU he moved to Sweden and completed his PhD studies in Materials Chemistry at KTH - Royal Institute of Technology (Stockholm-Sweden), specializing in Inorganic Materials Chemistry and Nanotechnology. He worked as a Post-doctoral fellow at the University of California at Santa Barbara (UCSB, USA) on the biomimetic assembly routes for the fabrication of nanomaterials. He then returned to KTH and received the title of Docent in 2009, thereafter was appointed full Professor in Materials Chemistry in 2015. He is currently a staff member at the Department of Applied Physics, KTH, leading a research group with a strong Nanochemistry profile.

Material design on the nanoscale is Toprak's main research domain. The focus is on developing sustainable methods (green chemistry) for synthesizing nanoparticles with controlled size, morphology and surface chemistry (nanotectonics), precisely engineered for the intended applications. The group uses a wide range of analytical techniques for structural, microstructural, physicochemical and interface characterization, to reveal the materials' qualities in relation to the process used. Muhammet and his group are also responsible for several key courses within the international master program on Nanotechnology. with focus on chemistry, nanomaterials and nanocharacterization. He has published more than 200 articles in internationally renowned journals and have an h-index of 57.

Toprak's research activities have a strong sustainability focus, with special emphasis on applications in energy and biomedicine. Thermoelectric materials is one area where his group has a strong track-record, reporting several materials displaying state-of-the-art performance. The aim is scalable hybrid films for thermal energy harvesting. For biomedicine, the group developed nanoparticles with biocidal and bio-active surfaces. A pioneering area is the development of a library of novel nanoparticle-based contrast agents, and demonstration of the usability of the new contrast agents for in-vivo x-ray fluorescence bio-imaging. Development of targeted nanoparticle delivery in-vivo is the objective of on-going research.



Cong Wang (Prof. Dr.)
Northeastern University, China

"Creep Cracking Mechanisms of Welded Joints for Cr-Mo Heat-Resistant Pressure Vessel Steels"

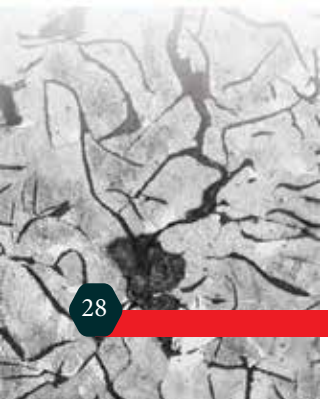
Prof. Cong Wang, completed his BS (2003, Materials Science and Engineering-Top Talents Class) and MS (2006) in Northeastern Univ.-Shenyang, and his PhD in Carnegie Mellon Univ.-Pittsburg in 2009. He worked as senior research engineer in Alcoa Technical Center (2010-2012), in Saint-Gobain R&D (2012-2013), and as research associate in Northwestern Univ-Evanston (2013-2014).

He has been awarded many awards and fellowships: Associate Academician (2019, Asia Pacific Academy of Materials), Early Career Faculty Fellow Award (TMS, 2018), Outstanding Young Metallurgist (Chinese Society of Metals, 2018), Invitational Fellowship (2017, JSPS, Japan), Excellent Young Scientist Award (2016, NSFC), Newton Advanced Fellowship (2016, The Royal Society, UK), Outstanding Young Manufacturing Engineer Award (SME, 2014), 1000 Talents program (2014, China), Emerging Leaders Alliance Capstone Program (UEF, 2011), Young Leader Professional Development Award (TMS, 2011).

He is a full-time professor in the Department of Metallurgical Engineering in Northeastern Univ-Shenyang (since 2014). He has 4 patents, about 50 journal articles. He is very active researcher in his field, and also contributes to the editorial boards in prestigious journals, and scientific committees.

20th INTERNATIONAL METALLURGY MATERIALS CONGRESS
10-12 June 2021
"in Digital Platform"

immc2021



20th INTERNATIONAL METALLURGY MATERIALS CONGRESS

10-12 June 2021

"in Digital Platform"

SCHEDULE of EVENTS

10.June.2021 Thursday

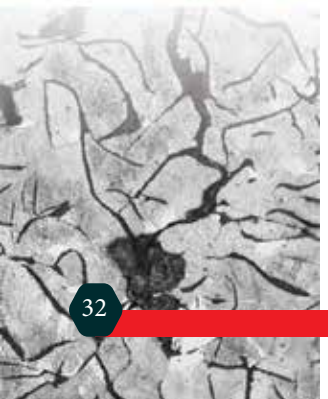
	Hall 1	Hall 2	Hall 3
10:00	10:00 S'S1 Steelmaking Symposium1 11:00	10:00 CGRM'S1 Ceramic, Glasses and Refractory Materials Symposium1 11:10	10:00 BM'S1 Biomaterials Symposium1 11:20
11:00			
11:20	11:20 S'S2 Steelmaking Symposium2 12:40	11:20 CGRM'S2 Ceramic, Glasses and Refractory Materials Symposium2 12:50	
12:00			
13:00		13:00 PLENARY SESSION1 13:30	
13:30	13:30 S'S3 Steelmaking Symposium3 14:50	13:30 CGRM'S3 Ceramic, Glasses and Refractory Materials Symposium3 14:30	13:30 NM'S1 Nanomaterials Symposium1 15:00
14:00			
15:00			
15:10	15:10 S'S4 Steelmaking Symposium4 16:30	15:10 CGRM'S4 Ceramic, Glasses and Refractory Materials Symposium4 16:30	15:10 NM'S2 Nanomaterials Symposium2 16:40
16:00			
16:50	16:50 S'S5 Steelmaking Symposium5 18:10		16:50 MM'S1 Mechanical Metallurgy1 18:20
17:00			
18:00			
19:00			

11.June.2021 Friday

	Hall 1	Hall 2	Hall 3	Hall 4
10:00	10:00 AAPA'S1 Advanced Alloys and Processes for Aerospace Symposium1 11:00	10:00 STHT'S1 Surface Treatment and Heat Treatment Symposium1 11:00	10:00 NFM'S1 Non-Ferrous Metals Symposium1 11:00	10:00 C'S1 Casting Symposium1 11:40
11:00				
	11:20 AAPA'S2 Advanced Alloys and Processes for Aerospace Symposium2 12:40	11:20 STHT'S2 Surface Treatment and Heat Treatment Symposium2 12:30	11:20 NFM'S2 Non-Ferrous Metals Symposium2 12:40	
12:00				
		13:00 PLENARY SESSION2 13:30		
13:00				
	13:30 AAPA'S3 Advanced Alloys and Processes for Aerospace Symposium3 14:50	13:30 STHT'S3 Surface Treatment and Heat Treatment Symposium3 14:50	13:30 NFM'S3 Non-Ferrous Metals Symposium3 14:30	13:30 ME'S1 Materials for Energy Symposium1 15:00
14:00				
15:00				
	15:10 AAPA'S4 Advanced Alloys and Processes for Aerospace Symposium4 16:30	15:10 STHT'S4 Surface Treatment and Heat Treatment Symposium4 16:20	15:10 CW'S1 Corrosion and Wear Symposium1 16:10	15:10 ME'S2 Materials for Energy Symposium2 16:10
16:00				
17:00	16:50 AAPA'S5 Advanced Alloys and Processes for Aerospace Symposium5 17:50	16:50 STHT'S5 Surface Treatment and Heat Treatment Symposium5 17:50	16:50 CW'S2 Corrosion and Wear Symposium2 17:50	16:50 ME'S3 Materials for Energy Symposium3 17:50
18:00				
19:00				

12.June.2021 Saturday

	Hall 1	Hall 2	Hall 3
10:00	10:00 AAPA'S6 Advanced Alloys and Processes for Aerospace Symposium6 11:00	10:00 CPM'S1 Composite And Polymer Materials Symposium1 11:50	10:00 RS'S1 Recycling and Sustainability Symposium1 11:00
11:00			
	11:20 AAPA'S7 Advanced Alloys and Processes for Aerospace Symposium7 12:30		11:20 RS'S2 Recycling and Sustainability Symposium2 12:20
12:00			
13:00			
	13:30 AAPA'S8 Advanced Alloys and Processes for Aerospace Symposium8 14:40	13:30 CPM'S2 Composite And Polymer Materials Symposium2 14:30	13:30 RS'S3 Recycling and Sustainability Symposium3 14:50
14:00			
15:00			
	15:10 WM'S1 Welding Metallurgy Symposium1 16:20	15:10 CPM'S3 Composite And Polymer Materials Symposium3 16:10	15:10 RS'S4 Recycling and Sustainability Symposium4 16:30
16:00			
17:00			
18:00			
19:00			



20th INTERNATIONAL METALLURGY MATERIALS CONGRESS

10-12 June 2021

"in Digital Platform"

PROGRAM

HALL - 2

10.June.2021 Thursday

OPENING CEREMONY

09:15 - 09:50

Prof. Dr. C. Hakan GÜR
Congress Organizing Board, Chairman
Kongre Organizasyon Kurulu Başkanı

Ata ÖZDEMİRLER
METEM Chairman of the Executive Committee
METEM Yürütme Kurulu Başkanı

A. İrfan TÜRKKOLU
MMEC Chairman of the Board // MMMO Yönetim Kurulu Başkanı

Prof. Dr. Rodrigo Martins
President of the European Academy of Sciences and President Elected of the International Union of Materials Research Societies, Portugal
"Future Perspectives of Materials Research"

09:50 - 10:00 PLAQUETTE CEREMONY (for Sponsors)

HALL - 1

10.June.2021 Thursday

STEELMAKING-1

Session Chairman
F. Arcan DERİCOĞLU

10:00 - 10:20	**Modelling of Mechanical Strength by Examining Hot Rolling Mill Parameters in Structural Steels** Cemre KEÇECİ, Muhammet BİLEN, Serdar GÜNBAY, Hasan YILDIRIM, Z. Özlem TUNÇ, Tayfun KOCABAŞ, A. Mesud ÇAKIR, Burcu SOYSAL ATAN, İlyas AÇIKGÖZ İskenderun Demir ve Çelik A. Ş., Oyak Maden Metalurji Grubu Operasyonel Mükemmellik Direktörlüğü Turkey
10:20 - 10:40	**Coking Process, Optimization of Coke Quality Parameters and Investigation of Effects in Blust Furnace** Hüseyin KALAY, Zekeriya ÖZER İskenderun Demir ve Çelik A. Ş. Turkey
10:40 - 11:00	**Affects of Coke Quenching Methods on Coke Reactivity Index** Ömer ECE, Hüseyin ZÜMRÜT, Erman KAYA İskenderun Demir ve Çelik A. Ş. Turkey

HALL - 1

10.June.2021 Thursday

STEELMAKING-2

Session Chairman
Ender KESKİNKILIÇ

11:20 - 11:40	**Maintenance Management System Installation in Integrated Iron and Steel Plants & Innovative Approches** Hasan BULUT, Merih YAMAN, Serkan KESKİ, Ali KESKİN İskenderun Demir ve Çelik A. Ş., Ereğli Demir ve Çelik A.Ş. Turkey
11:40 - 12:00	**Analysis of Annealing & Pickling Processes for AISI 304 Stainless Steel Sheet Corrosion Resistance** Onur AY[1], Ayşegül BİLEN[2], Erdem GÜLER[1], Bedirhan GÜRAYDIN[1], Hamdi EKİCİ[1], İ. Cemre TÜRÜ[2], Eda DAĞDELEN[1] [1]Trinox Metal San. ve Tic. A.Ş., [2]Yıldız Technical University Turkey
12:00 - 12:20	**Centralization and Reduction of Human Factor in the Control of Water Supply and Circulation Plants in the Iron and Steel Industry** İsmail GÜVEN, Erkin Yekda GEDİK, Engin KARABEYOĞLU, Gencer BİRKAN İskenderun Demir ve Çelik A. Ş. Turkey
12:20 - 12:40	**Investigation of Distinct Strain Rates on Hydrogen Permeability Properties of Enamel Steel** Ramazan UZUN[1], Ümran BAŞKAYA[1], Zafer ÇETİN[1], Oğuz GÜNDÜZ[1], Yasemin KILIÇ[1], Adem BAKKALOĞLU[2] [1]Eregli Iron and Steel Works, Co., [2]Yıldız Technical University Turkey

HALL - 1

10.June.2021 Thursday

STEELMAKING-3

Session Chairman
Bora DERİN

13:30 - 13:50	**Effect of Thermomechanical Rolling Process on the Mechanical Properties of 46MnV56 Microalloyed Steel** Funda OZMEL[1], Dogan CAMLI[1], Mert ULKER[1], Kenan ACAR[1], Arcan F. DERİCİOGLU[1,2] [1]Asil Çelik San. ve Tic. A.Ş., [2]Middle East Technical University Turkey
13:50 - 14:10	**Development of New Generation Steel Alloy and Forging Process** Fulya EYÇİN[1], Tuğçe YAĞCI[2,3], Adem KORKMAZ[3], Serhat BARDAKÇI[3], Osman ÇULHA[2,3] [1]Tirsan Kardan San. ve Tic. A.Ş., [2]Manisa Celal Bayar University, [3]Twin R&D Engineering Company Turkey
14:10 - 14:30	**The Characterization After Normalizing Treatment of Hot Forged 16MnCr5 and 20MnCr5 Cementation Steels** Nuray BEKÖZ ÜLLEN[1], Mustafa ERSOY[2] [1]İstanbul University-Cerrahpaşa, [2]Batı Heat Treatment Turkey
14:30 - 14:50	**Reverse Ageing Phenomena in Hyper-Eutectoid Wire Rod Steels** Cemre KEÇECİ, Erhan SAKALLI, Sadık POLAT, M. Eriş DURMUŞOĞLU, Ali KOCA, Ahmet SAĞLAM İskenderun Demir ve Çelik A. Ş., Ereğli Demir ve Çelik Fabrikaları T.A.Ş. Turkey

HALL - 1

10.June.2021 Thursday

STEELMAKING-4

Session Chairman
F. Arcan DERİCİOĞLU

15:10 - 15:30	**Data Mining Applications in Iron and Steel Plants** Ahmet BEŞKARDEŞ İskenderun Demir ve Çelik A. Ş. Turkey
15:30 - 15:50	**Modelling the Turbidity-Suspended Solids Relationship and Optimizing the Polyelectrolyte Dosage** Mehmet Burak ATAN, Erkin Y. GEDİK, Gökhan GÜNGÖR, Onur MARTI, Arif AKSOY, İsmail GÜVEN, Gencer BİRKAN, A. Mesud ÇAKIR, Fatih ÇELİK İskenderun Demir ve Çelik A. Ş., Operasyonel Mükemmellik Müdürlüğü Turkey
15:50 - 16:10	**Modelling and Digitalization of Mix Slab Applications** İlker AYÇİÇEK, Kübra AKGÜN, Güven SAĞDIÇ, Murat PERÇEM, Burak Emre IŞIK, Arif SAĞBUR, Tayfun KOCABAŞ, A. Mesud ÇAKIR, Fatih ÇELİK, İlyas AÇIKGÖZ İskenderun Demir ve Çelik A. Ş., Oyak Maden Metalurji Grubu Operasyonel Mükemmellik Direktörlüğü Turkey
16:10 - 16:30	**Slab Movement Optimization** Ertan CULHACI, Mahmut KAYHAN, Timur KAYNAK, Ugur OKTAY, Halim SADE, Abdurrahman Mesud ÇAKIR, Fatih ÇELİK İskenderun Demir ve Çelik A. Ş. Turkey

HALL - 1

10.June.2021 Thursday

STEELMAKING-5

Session Chairman
C. Fahir ARISOY

16:50 - 17:10	**A Case Study for Tool Steel Deformation: Crack Investigation of a Cold Work Tool Steel Used for Trimming Operations** Yekta Berk SÜSLÜ[1], Berkay SAVAŞKAN[1,2], Onur ÖZCAN[1], Muammer MUTLU[1], Özgül KELEŞ[2] [1]Mita Kalıp ve Döküm Sanayii AŞ, [2]Istanbul Technical University Turkey
17:10 - 17:30	**The Effect of FeSiMn Usage on Deoxidation at Low Carbon Silicon Restricted Steel Grades** Zafer ÇETİN, Onur KART, Recep TOPAL, Davut ÇELİK, Özcan BAHAROĞLU, Oğuz GÜNDÜZ Eregli Iron and Steel Works, Co. Turkey
17:30 - 17:50	**The Impact of Additive Aluminum Bullions Upon Recycle of Alloying Elements in Secondary Metallurgy** Mert TURFANDA, Emrecan ZORBA, Oğuzhan SAKARYA, Uğur CENGİZ Bilecik Demir Çelik San. Tic. A.Ş Turkey
17:50 - 18:10	**The Effect of Different Isolation Practice of Dolomite Steel Ladles on Energy Consumption of Ladle Furnace** Oğuzhan SAKARYA, Mert TURFANDA, Burak EKİN, Uğur CENGİZ, Muammer BİLGİÇ Bilecik Demir Çelik San. Tic. A.Ş Turkey

HALL - 2

10.June.2021 Thursday

CERAMICS, GLASS, REFRACTORY MATERIALS-1

Session Chairman
Ender SUVACI

10:00 - 10:30 **Invited Speaker**	**Current Status of Industrial and Advanced Ceramics in Turkey** Alpagut KARA Eskişehir Technical University Turkey
10:30 - 10:50	**Development of Geopolymer Based Thermal Insulation Material for Industrial Applications** G. Can TATLISU[1,3], Cem ACIKSARI[1,2], Yesim TEKE[2], Cuneyt KARAKAYA[2], Ozge AKARCAY[2], Emre KELES[1,3], Serdar CELEBI[2], Servet TURAN[1,3] [1]Eskişehir Technical University, [2]TUPRAS R&D Center, [3]Ceramic Research Center Turkey
10:50 - 11:10	**Effect of Brazing Parameters on the Microstructural and Mechanical Characteristics of Ceramic Matrix Composite/ Titanium Alloy Brazed Joints** Simge TÜLBEZ[1,2], Ziya ESEN[3], Arcan Fehmi DERİCİOĞLU[1] [1]Middle East Technical University, [2]Roketsan Industries Inc., [3]Çankaya University Turkey

HALL - 2

10.June.2021 Thursday

CERAMICS, GLASS, REFRACTORY MATERIALS-2

Session Chairman
Çekdar VAKIFAHMETOĞLU

11:20 - 11:50 **Invited Speaker**	**Synthesis of Nanoceramic Powders and Their Biomedical Applications** Muhammet TOPRAK KTH Royal Institute of Technology Sweden
11:50 - 12:10	**Reactive Hydrothermal Liquid-Phase Densification (rHLPD) - Low Temperature Densification Concept: A Case Study of $BaTiO_3$** Levent KARACASULU, Melike TOKKAN, Umut ADEM, Cekdar VAKIFAHMETOGLU Izmir Institute of Technology Turkey
12:10 - 12:30	**Hydrothermal Synthesis of Zinc Tin Oxide (Zn_2SnO_4) Particles for High Purity Sputtering Targets** Cem ACIKSARI[1,2], Umut SAVACI[1], Emel OZEL[1], Servet TURAN[1], Ender SUVACI[1] [1]Eskişehir Technical University, [2]TUPRAS R&D Center Turkey
12:30 - 12:50	**Open and Partially Closed Porosity SiOC Ceramics** Tugce SEMERCI[1], Murilo Daniel de Mello INNOCENTINI[2], Gian Domenico SORARU[3],Cekdar VAKIFAHMETOGLU[1] [1]Izmir Institute of Technology, [2]University of Ribeirão Preto (UNAERP), [3]Università di Trento [1]Turkey, [2]Brazil, [3]Italy

HALL - 2

10.June.2021 Thursday

PLENARY SESSION 1

Session Chairman
C. Hakan GÜR

13:00 - 13:30 **Invited Speaker**	**Materials Recovery and Reuse for the 21st Century: A Call for Action and the Need for a Paradigm Change** Diran APELIAN University of California USA

HALL - 2

10.June.2021 Thursday

CERAMICS, GLASS, REFRACTORY MATERIALS-3

Session Chairman
Filiz ŞAHİN

13:30 - 13:50	**Investigation of the Effect of Low Cost Graphene on the Mechanical and Thermal Properties of the SiAlON Based Ceramics** Emre KELES[1,3], Cuneyt KARAKAYA[2], Cem ACIKSARI[1,2], Umut SAVACI[1,3], Servet TURAN[1,3] [1]Eskişehir Technical University, [2]TUPRAS, 3Ceramic Research Center Turkey
13:50 - 14:10	**$CaCO_3$ Doped AlON Ceramics Fabricated by Reactivxe Spark Plasma Sintering** Demet AYDOGMUS, Samet KAYA, Gultekin GOLLER, Onuralp YUCEL, Filiz SAHIN Istanbul Technical University Turkey
14:10 - 14:30	**TiC Synthesis from Oxide Raw Materials Through Self-Propagating High-Temperature Synthesis** Tuğçe ERGÜL, Umay ÇINARLI, Mehmet BUĞDAYCI, Ahmet TURAN Yalova University Turkey

HALL - 2

10.June.2021 Thursday

CERAMICS, GLASS, REFRACTORY MATERIALS-4

Session Chairman
Abdullah ÖZTÜRK

15:10 - 15:30	**Fabrication of High Density Alumina Ceramics from Nanopowders through Colloidal Processing** Hüseyin Utkucan KAYACI, Simge ÇINAR Middle East Technical University Turkey
15:30 - 15:50	**Synthesis of Magnetic Bioactive Glass** Cansu TAŞAR, Batur ERCAN Middle East Technical University Turkey
15:50 - 16:10	**Relationship Between Surface Roughness and Adherence Perfomance of Cast Iron Enamel Coatings** Aykut AK[1,2], Nurullah ÇÖPOĞLU[1,2], Yasin Bozkurt YILMAZ[1,2], Tamer CENGİZ[2], Buğra ÇİÇEK[1] [1]Yıldız Technical University, [2]Gizemfrit Turkey
16:10 - 16:30	**The Investigation of Permanent Linear Change (PLC) Properties of Monolithic Refractories** Oğuzhan SAKARYA, Mert TURFANDA, Emrecan ZORBA, Uğur CENGİZ Bilecik Demir Çelik San. Tic. A.Ş Turkey

HALL - 3

10.June.2021 Thursday

BIOMATERIALS-1

Session Chairman
İpek Akın KARADAYI

10:00 - 10:20	**Anodization of 316L Stainless Steel for Implant Applications** Yaşar Kemal ERDOĞAN, Batur ERCAN Middle East Technical University Turkey
10:20 - 10:40	**Polylactic Acid / Calcium Sulfate Composite Production for Bone Tissue Engineering** Ayşe KAPLAN[1,2], Cem Bülent ÜSTÜNDAĞ[2] [1]Yıldız Technical University, [2]Alvimedica Medical Technologies Turkey
10:40 - 11:00	**Effect of GTA Vapor Crosslinking Time and Temperature on the Physico-Chemical Properties of Electrospun Gelatin Scaffolds** Aslıhan CALHAN[1,2], Mustafa SENGOR[1], Oguzhan GUNDUZ[1] [1]Marmara University, [2]Yildiz Technical University Turkey
11:00 - 11:20	**3D Silk Fibroin Scaffolds for Tissue Engineering Applications** Melisa KAFALI, Batur ERCAN Middle East Technical University Turkey

HALL - 3

10.June.2021 Thursday

NANOMATERIALS-1

Session Chairman
Emrah ÜNALAN

13:30 - 14:00 **Invited Speaker**	**Chemically Processed Inorganic Nanostructures for Energy and Health Applications** Sanjay MATHUR University of Cologne Germany
14:00 - 14:20	**Preparation and Photocatalytic Activity of Solar Light Sensitive g-C_3N_4/TiO_2 Heterojunction Nanocomposites** Pelin GÜNDOĞMUŞ[1], Jongee PARK[2], Abdullah ÖZTÜRK[1] [1]Middle East Technical University, [2]Atılım University Turkey
14:20 - 14:40	**Novel Synthesis of Boron Containing TiO_2 Nanostructures with Variable Morphologies by Sol-Gel and Hydrothermal Processing** Cansu NOBERİ[1], Cengiz KAYA[2] [1]İstanbul Gelişim University, [2]Sabancı University Turkey
14:40 - 15:00	**Characterization of Cellulose Nanocrystals Produced via Acid Hydrolysis Method** Burcu SARI, Cevdet KAYNAK Middle East Technical University Turkey

HALL - 3

10.June.2021 Thursday

NANOMATERIALS-2

15:10 - 15:40 **Invited Speaker**	**Novel Advanced Automotive Graphene Nanocomposites: Challenges and Future Perspectives** Ahmed ELMARAKBI Northumbria University United Kingdom
15:40 - 16:00	**Synthesis of Metallic Striped and Janus Particles** Mert ULUSEL, Ozan ŞAHİN, Orçun DİNÇER, Bayram YILDIZ, Simge ÇINAR Middle East Technical University Turkey
16:00 - 16:20	**Morphological Evolution of Boron Carbide Particles: Sol-Gel Synthesized Highly Crystalline B_4C Whiskers** Suna AVCIOĞLU, Figen KAYA, Cengiz KAYA Yıldız Technical University Turkey
16:20 - 16:40	**Solid Solution Strenghtening in Amorphous-Crystalline Metallic Composites** Sevda FATHIPOUR[1], Amir MOTALLEBZADEH[2], Özgür DUYGULU[3], Sezer ÖZERİNÇ[1] [1]Middle East Technical University, [2]Koç University, [3]TÜBİTAK Marmara Research Center Turkey

HALL - 3

10.June.2021 Thursday

MECHANICAL METALLURGY-1

Session Chairman
Murat BAYDOĞAN

16:50 - 17:20 **Invited Speaker**	**Addressing Fundamental Problems in Metallurgy via First Principles Models: Point Defects, Surface Chemistry, and Initial Stages of Precipitation** S. Pamir ALPAY University of Connecticut USA
17:20 - 17:40	**Simulation of the Friction Coeefficent Effect on Wire Drawing Proses** Sevim Gökçe ESEN[1], Zeynep Şeyma SERDAROĞLU[1], Osman ÇULHA[2] [1]Çelik Halat ve Tel Sanayii A.Ş, [2]Manisa Celal Bayar University Turkey
17:40 - 18:00	**Effect of Manganese and Titanium and Heat Treatment on Microstructure and Friction Behavior of Hadfield Steel** Ugur GUROL[1], Ozan COBAN[2,3], Suleyman Can KURNAZ[1] [1]Sakarya University, [2]İstanbul Gedik University, [3]İstanbul Technical University Turkey
18:00 - 18:20	**Determination of Die Geometry Effect on Mechanical Properties of Wire by Numerical Simulation Method** Sevim Gökçe ESEN[1], Osman ÇULHA[2] [1]Çelik Halat ve Tel Sanayii A.Ş, [2]Manisa Celal Bayar University Turkey

HALL - 1

11.June.2021 Friday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-1

Session Chairman
Hakan YAVAŞ

10:00 - 10:20	**Mechanical Behavior and Failure Modes of Hybrid Jointed Lap Shear Joints** Tansu GÖYNÜK[1,2], Uğur Can UYSAL[1], Duygu KARAÇAL[1,2], Cengiz Kayahan ÖZLAV[1] [1]Roketsan A.Ş., [2]Middle East Technical University Turkey
10:20 - 10:40	**Effect of Heat Treatment on Microstructure and Mechanical Properties of Additively Manufactured 18Ni300 Maraging Steels** İbrahim AYDIN[1], Aydın YAĞMUR[2], Süha TİRKEŞ[1], C. Hakan GÜR[1] [1]Middle East Technical University, [2]EOS GmbH Electro Optical Systems [1]Turkey, [2]Germany
10:40 - 11:00	**Advanced Braze Repair of Nickel Base Superalloys for Gas Turbine Applications** Kazım ÖZBAYSAL Siemens Energy Inc USA

HALL - 1

11.June.2021 Friday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-2

Session Chairman
Havva KAZDAL ZEYTİN

11:20 - 11:40	**The Effect of Recycled Powder Characteristics on the Properties of Additively Manufactured 17-4 PH Stainless Steel** Ece KAHRAMAN[1], Mertcan BAŞKAN[1], Gökhan ÇELİK[1], Mert KELEŞ[1], Andaç ÖZSOY[1], Orkun ÖNEM[1], Bilgehan ÖGEL[2] [1]Roketsan A.S., [2]Middle East Technical University Turkey
11:40 - 12:00	**Process Parameter Optimization for Wire and Arc Additive Manufacturing (WAAM) of 316LSi Steel** Mertcan BAŞKAN, Erkan Buğra TÜREYEN, Gökhan CAN, Mert KELEŞ, Ece KAHRAMAN, Orkun Umur ÖNEM, Oğuzhan YILMAZ Roketsan Turkey
12:00 - 12:20	**Comparison of Mechanical and Microstructural Properties of AISI321 Alloy after ESR and ESR+VAR Processes** Sertaç ALPTEKİN, Ömür Can ODABAŞ, Kaan DEMİRALAY, Lütfi YAKUT, Bülent BAHADIR, Havva KAZDAL ZEYTİN Materials Institute of Marmara Research Center of The Scientific and Technological Research Council of Turkey Turkey
12:20 - 12:40	**Improving the Thermal Stability of Laser Clad NiCrBSi Coatings** Natalia SOBOLEVA, Aleksey MAKAROV, Irina MALYGINA Ural Branch of the Russian Academy of Sciences Russia

HALL - 1

11.June.2021 Friday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-3

Session Chairman
Ziya ESEN

13:30 - 13:50

Development of Fire-Resistant Wrought Mg-Zn- Y-Ca Alloys for Civil Aircraft Applications

Önder TUNA[1,2], Halil DEMİRTAŞ[1,2], Deniz Sultan AYDIN[1], Özgür DUYGULU[1], Havva KAZDAL ZEYTİN[1], Metin USTA[1,2], Youngkil JUNG[3], Wonseok YANG[3], Hyun Kyu LIM[3]

[1]TUBITAK MAM, Materials Institute, [2]Gebze Technical University, [3]Korea Institute of Industrial Technology (KITECH)

[1,2]Turkey, [3]Korea

13:50 - 14:10

The Effect of Heat Treatment on the Fracture and Micro-Mechanical Behavior of the Selective Laser Melted AlSi10mg

Ahmet Alptuğ TANRIKULU[1], Hakan YAVAŞ[1], Sertaç ALTINOK[1,2], Burcu ARSLAN HAMAT[1,2], Gülten KAFADAR[1,2], Mustafa GÜDEN[3]

[1]Turkish Aerospace Industries Inc., [2]Middle East Technical University, [3]İzmir Institute of Technology

Turkey

14:10 - 14:30

Validation of Important Simulation Parameters to Predict Porosity Defects in ALSI12 Casting

Muharrem AKKAYA[1], Nuri DURLU[1], M. Akif ŞAHİN[2], M. Bülent ÖZER[2], Yiğit TAŞÇIOĞLU[3]

[1]TOBB University of Economics and Technology, [2]Middle East Technical University, [3]TED University

Turkey

14:30 - 14:50

The Effect of Casting Temperature and Withdrawal Rate on Laue Misorientation in CMSX-4 SLS Single Crystal Turbine Blade Production

Serra BAYRAM, Ecem ANNAŞLI, Furkan Ferhat BONCUK, Sertaç ALPTEKİN, Lütfi YAKUT, Ömür Can ODABAŞ, Havva KAZDAL ZEYTİN

TUBITAK Marmara Research Center
Turkey

IMMC 2021

HALL - 1

11.June.2021 Friday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-4

Session Chairman
Caner DURUCAN

15:10 - 15:30

Effect of Post-Processing Heat Treatment on the Mechanical Properties of Inconel 718 Fabricated by Selective Laser Melting (SLM)

Seren OZER[1,2], G. Mert BILGIN[1], Ziya ESEN[3], Arcan F. DERICIOGLU[1]

[1]Middle East Technical University, [2]Atılım University, [3]Çankaya University

Turkey

15:30 - 15:50

Optimizing the Heat Treatment Parameters of Additively Manufactured IN718 Components

Tuğçe KALELİ[1], Aydın YAĞMUR[2], Süha TİRKEŞ[1], C. Hakan GÜR[1]

[1]Middle East Technical University, [2]EOS GmbH Electro Optical Systems

[1]Turkey, [2]Germany

15:50 - 16:10

Microstructure and Mechanical Properties of Rene 41 Alloy Fabricated by Laser Powder Bed Fusion

Sıla ECE ATABAY, Oscar Sanchez-MATA, Jose Alberto Muñiz-LERMA, Mathieu BROCHU

McGill University
Canada

16:10 - 16:30

An Investigation on the Effect of Reuse and Recycling on Powder Characteristics in Electron Beam Melting

Evren YASA[1], Mutlu KARAŞOĞLU[2], Evren TAN[3], Berkay GÜMÜŞ[3], Emrecan SOYLEMEZ[4], Kuntay AKTAŞ[5]

[1]Eskişehir Osmangazi University, [2]Eskişehir Technical University, [3]Aselsan Elektronik Sanayi ve Ticaret A.Ş., [4]Istanbul Technical University, [5]Btech Innovation

Turkey

HALL - 1

11.June.2021 Friday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-5

Session Chairman
Levent ORGAN

16:50 - 17:10	**Structural and Mechanical Characterization of Scale-Up FeCoCrNiCux, High Entropy Alloys (HEAs)** Z. Anıl ERDAL[1], Gökhan POLAT[1,2], Doğuhan SARITÜRK[1], Y. Eren KALAY[1] [1]Middle East Technical University, [2]Necmettin Erbakan University Turkey
17:10 - 17:30	**Effect of Sintering Parameters on MoTiNbFeCr High Entropy Alloy (HEA) Produced by Mechanical Alloying (MA)** Gökhan POLAT, M. Fatih BAŞ, Hasan KOTAN Necmettin Erbakan University Turkey
17:30 - 17:50	**High-Temperature Gas Sensing Materials for Combustion Process Monitoring** Bilge SARUHAN[1], Roussin Lontio FOMEKONG[1,2] [1]German Aerospace Center, [2]University of Yaounde [1]Germany, [2]Cameroon

HALL - 2

11.June.2021 Friday

SURFACE TREATMENT AND HEAT TREATMENT-1

Session Chairman
Metehan ERDOĞAN

10:00 - 10:20	**Modification of Nitride Layer Applied on the Surface of DIN 1.2344 Hot Work Tool Steel with Boron** Yaşar AKÇA[1], Gökhan ÖZER[1], Ahmet KARAASLAN[2] [1]Fatih Sultan Mehmet Vakıf University, [2]Yıldız Technical University Turkey
10:20 - 10:40	**A Novel Technique for Phase Homogenization in CRTD-Bor: Periodically Interrupted Current** Oğuz Kağan COŞKUN, Mehtap ARSLAN, Mehran KARIMZADEKHOEI, Güldem KARTAL ŞİRELİ, Servet TİMUR İstanbul Technical University Turkey
10:40 - 11:00	**Development of Chrome-Free Etching for Electroless Coating of Polymeric Materials** Mehtap ARSLAN, Oguz Kagan COSKUN, Guldem KARTAL SIRELİ, Servet TIMUR İstanbul Technical University Turkey

HALL - 2

11.June.2021 Friday

SURFACE TREATMENT AND HEAT TREATMENT-2

Session Chairman
C. Hakan GÜR

11:20 - 11:50	New Surfaces by Direct Laser Interference Patterning: Optimal Functional Properties due to Fast and Precise Micro-Nano Structuring
Invited Speaker	Frank MUCKLICH Saarland University Germany
11:50 - 12:10	Surface Pattern Design of Biphasic Metal Particles
	Ozan ŞAHİN, Mert ULUSEL, Orçun DİNÇER, Emre ALTIN, Bayram YILDIZ, Simge ÇINAR Middle East Technical University Turkey
12:10 - 12:30	Effects of Multistep Surface Preparation of PU on Surface Properties of Metallic Coatings
	Büşra ÜNLÜ[1,2], Yahya ÖZ[2], Metehan ERDOĞAN[3], İshak KARAKAYA[1] [1]Middle East Technical University, [2]Turkish Aerospace, [3]Ankara Yıldırım Beyazıt University Turkey

HALL - 2

11.June.2021 Friday

PLENARY SESSION 2

Session Chairman
Özgül KELEŞ

13:00 - 13:30	The Future of Extractive Metallurgy
Invited Speaker	Fathi HABASHI Laval University Canada

HALL - 2

11.June.2021 Friday

SURFACE TREATMENT AND HEAT TREATMENT-3

Session Chairman
Batur ERCAN

13:30 - 13:50	**Using Laser Ultrasonics to Study Austenite Grain Growth Kinetics of Carburizing Steels** Kemal DAVUT[1], Rasim Köksal ERTAN[2], Yasin DEMİRKOL[2], Caner ŞİMŞİR[3] [1]Atılım University, [2]Simultura Malzeme Teknolojileri, [3]Middle East Technical University Turkey
13:50 - 14:10	**Influence of Methane Content on Control of Carburizing** M. Tarik BOYRAZ, Heinrich KLUMPER-WESTKAMP, Matthias STEINBACHER Leibniz-Institut für Werkstofforientierte Technologien Germany
14:10 - 14:30	**Investigating the Optimal Parameters of Electro Spark Deposition Coating Method on Inconel 718 with Aluminum** Ahmet KAVUKCU, Kemal KORKMAZ Gebze Technical University Turkey
14:30 - 14:50	**The Effect of Destabilization Holding Time on the Tribological Behaviour of a Hypoeutectic High Chromium Cast Iron Alloy** U. Pranav NAYAK[1], María Agustina GUITAR[1], Valentin PESNEL[3], Frank MUCKLICH[1,2] [1]Saarland University, [2]Materials Engineering Center Saarland (MECS), [3]EEIGM, Université de Lorraine [1,2]Germany, [3]France

HALL - 2

11.June.2021 Friday

SURFACE TREATMENT AND HEAT TREATMENT-4

Session Chairman
Caner ŞİMŞİR

15:10 - 15:40 **Invited Speaker**	**Microstructure Optimization in Additively Manufactured Metals through Heat and Surface Treatment** Marcel A. J. SOMERS Technical University of Denmark Denmark
15:40 - 16:00	**Investigation of Effects of Different Processing Speed on Mechanical Properties and Microstructure in the Patenting Heat Treatment** Anıl TIĞCI[1], Uğur ÖZSARAÇ[2] [1]Çelik Halat ve Tel Sanayii A.Ş, [2]Sakarya University of Applied Science Turkey
16:00 - 16:20	**Influence of Heat Treatment of 1.4462 and 1.4501 Duplex Stainless Steels on Microstructure and Wear Resistance** Gülüzar YALÇINER[1], Rıdvan GECÜ[1], Alptekin KISASÖZ[2], Ahmet KARAASLAN[1] [1]Yıldız Technical University, [2]Kırklareli University Turkey

HALL - 2

11.June.2021 Friday

SURFACE TREATMENT AND HEAT TREATMENT-5

16:50 - 17:10

Microstructural Characterization of Ferritic Nitro Carburized Layer on the Gray Cast Iron Brake Discs

Ekrem ALTUNCU[1], Recep AKYÜZ[2], Ozan DEMİRDALMIŞ[3], Bilgi ÇENGELLİ[4]

[1]Sakarya University of App. Sci., [2]Tofas Automotive, [3]Kale Balata, [4]Bodycote Istaş

Turkey

17:10 - 17:30

Investigation of Wear Behavior of Vacuum Gas Nitrided Crankshafts

Sayid HAS[1,2], Mehmet YILDIRIM[2], Rabia CENGİZ[1,2], Ali KELEŞ[1,3]

[1]Motus Automotive Inc., [2]Konya Technical University, [3]Dokuz Eylül University

Turkey

17:30 - 17:50

Investigating the Optimal Parameters of Hot-Dip Aluminizing Method on Inconel 718 Superalloy

Ahmet KAVUKCU[1,2], Faiz MUHAFFEL[1], Murat BAYDOĞAN[1]

[1]Istanbul Technical University, [2]Gebze Technical University

Turkey

HALL - 3

11.June.2021 Friday

NON-FERROUS METALS-1

Session Chairman

Cem KAHRUMAN

10:00 - 10:20

The Outlook of Zinc Mining and Metallurgy

Umut Doğan TURUNÇ[1,2], Cem KAHRUMAN[3]

[1]İstanbul University-Cerrahpaşa, [2]Esan Eczacıbaşı, [3]Bursa Technical University

Turkey

10:20 - 10:40

Solvent Extraction of Lithium from Tuz Lake

Merve ÖZTÜRK[1], Gökhan KADINKIZ[2], Memet PEKGÖZ[2], Bedirhan ERDENER[2], Ş. Samet KAPLAN[1], Nurgul ÇELİK BALCI[1], M. Şeref SÖNMEZ[1]

[1]İstanbul Technical University, [2]General Directorate of Mineral Research and Exploration

Turkey

10:40 - 11:00

The Effects of Calcium Addition and the Thermomechanical Processing on the Corrosion Resistance and Ignition Temperature of Mg Alloys

Halil DEMİRTAŞ[1,2], Önder TUNA[1,2], Özgür DUYGULU[1], Deniz Sultan AYDIN[1], Havva KAZDAL ZEYTİN[1], Metin USTA[1,2]

[1]TUBITAK MAM Materials Institute, [2]Gebze Technical University

Turkey

HALL - 3

11.June.2021 Friday

NON-FERROUS METALS-2

Session Chairman
Mertol GÖKELMA

11:20 - 11:40	**Cooling Slope Casting of 7075 Aluminum Alloy with Various Tilt Angles for Thixotropic Feedstock Production** Serhat ACAR, İzel KOCABAŞ, İbrahim TÜTÜK, Ayberk KÖÇKEN, Ali DOLU, Kerem Altuğ GÜLER Yıldız Technical University Turkey
11:40 - 12:00	**Effect of Sn Alloying Element Addition on Microstructural Change in Al-Mg-Si Alloys** Osman Halil ÇELİK, Mehmet Buğra GÜNER, Görkem ÖZÇELİK ASAŞ Alüminyum A.Ş. Turkey
12:00 - 12:20	**Behaviour of Al_2O_3 and Al_4C_3 Particles during Sedimentation and Gas Purging Processes in Aluminium Melts** Mertol GOKELMA[1], Bernd FRIEDRICH[2], Gabriella TRANELL[3] [1]Izmir Institute of Technology, [2]RWTH Aachen University, [3]Norwegian University of Science and Technology [1]Turkey, [2]Germany, [3]Norway
12:20 - 12:40	**Characterization of the Semi-Continuous Casted AlSi Alloy Microstructure in Function of Solidification Parameters** Agota KAZUP, Viktor KARPATI, Balazs GASCI, Greta GERGELY, Zoltan GACSI University of Miskolc Hungary

HALL - 3

11.June.2021 Friday

NON-FERROUS METALS-3

Session Chairman
Murat ALKAN

13:30 - 13:50	**High Temperature Deformation Behavior of NiCoCrAlY Alloy** Makoto HASEGAWA, Yuji KUBOTA, Nozomi TAKAHASHI Yokohama National University Japan
13:50 - 14:10	**Structural and Mechanical Characterization of $Al_{35}Ti_{35}V_{20}Cr_5Mn_5$ Lightweight High Entropy Alloy (LWHEA)** Gökhan POLAT[1,2], Ziya Anıl ERDAL[1], Yusuf Eren KALAY[1] [1]Middle East Technical University, [2]Necmettin Erbakan University Turkey
14:10 - 14:30	**Effect of CuAg0.1 Wire Rod Solidification on Continuous Extrusion Process** Zeynep SİREL, Murat ÖNEY, Orçun ZIĞINDERE, Mehmet Ali AKOY Sarkuysan Elektrolitik Bakır Sanayi ve Ticaret A.Ş. Turkey

HALL - 3

11.June.2021 Friday

CORROSION AND WEAR-1

15:10 - 15:30	**The Effects of Nitriding and TiCrN Coating by Cathodic Arc PVD Method on DIN1.2379 Cold Work Steel Substrate** Seda ATAŞ BAKDEMİR[1], M. Cenk TÜRKÜZ[2], Elif UZUN KART[3], Serdar SALMAN[1] [1]National Defence University, Naval Academy, [2]Titanit Ultra Hard PVD Coating Company, [3]Marmara University Turkey
15:30 - 15:50	**Development of Wear Resistant Coatings for Drilling Equipments** Emre YAVUZ[1,2], Nuri DURLU[1] [1]TOBB University of Economics and Technology, [2]Turkish Petroleum Corporation Turkey
15:50 - 16:10	**Microscale Fracture Toughness Testing on Hard Coatings** Burçin KAYGUSUZ[1], Amir MOTALLEBZADEH[2], Kürşat KAZMANLI[3], Sezer ÖZERİNÇ[1] [1]Middle East Technical University, [2]Koç University, [3]İstanbul Technical University Turkey

HALL - 3

11.June.2021 Friday

CORROSION AND WEAR-2

16:50 - 17:10	**Environmental Impact on the Corrosion Behavior of Marine Grade Steel in the Arabian Sea Conditions - A Comparative Analysis of Field and Laboratory Based Corrosion Tests** Muntazir ABBAS[1], Nigel SIMMS[1], Liyun LAO[1], Owais A. MALIK[2], Luqman ASHRAF[2] [1]Cranfield University, [2]National University of Science & Technology, PNEC [1]United Kingdom, [2]Pakistan
17:10 - 17:30	**A Predictive Model for Corrosion Under Insulation** Guodong WANG[1], Luyao MEI[1], Prafull SHARMA[2], Hoi YEUNG[1,2], Liyun LAO[1] [1]Cranfield University, [2]CorrosionRADAR Ltd United Kingdom
17:30 - 17:50	**Corrosion Resistance of Electroless NiB Coatings Synthesized in a Bath Free of Stabilizing Agent** Muslum YUNACTI[1], Alexandre MEGRET[1], Alex MONTAGNE[2], Véronique VITRY[1] [1]Université de Mons, [2]ENSAM Lille [1]Belgium, [2]France

HALL - 4

11.June.2021 Friday

CASTING-1

Session Chairman
Necip ÜNLÜ

10:00 - 10:20	**Evaluation of a New Eco-Friendly Sodium Silicate-Based Binder System for Chromite Sand Application** Necip ÜNLÜ[1], Ahmet ODABAŞ[2] [1]Istanbul Technical University, [2]Alazan Casting Chemicals & Industry Metal Inc. Co. Turkey
10:20 - 10:40	**The Effect of Nodularizer Type on the Microstructure and Mechanical Properties of EN-GJS-700-2 Nodular Cast Iron** Ali KELEŞ[1], Sayid HAS, Rabia CENGİZ[1], Mehmet YILDIRIM[2], Muhammed KIRICI[1] [1]Motus Automotive Company, [2]Konya Technical University Turkey
10:40 - 11:00	**Squeeze Pin Application on the HPDC Process for Improving Part Quality** Ekrem ALTUNCU[1], Naci EKMEN[2], Ali OZKAN[2] [1]Sakarya University of Applied Sciences, Material and Manufacturing Technologies Application And Research Center (SUMAR), [2]Arpek High Pressure Die Casting Company Turkey
11:00 - 11:20	**Irregular Eutectic Solidification: Coupled or Uncoupled Growth?** Samira MOHAGHEGHI[1], Shabnam Fadaei CHATROUDI[1], Sabine BOTTIN-ROUSSEAU[2], Silvère AKAMATSU[2], Melis ŞEREFOĞLU[1] [1]Koç University, [2]Sorbonne Université Turkey
11:20 - 11:40	**3D Numerical Simulation and Experimental Investigation of Pure Tin Solidification Under Natural and Forced Convection** SARI Ibrahim[1,2], HACHANI Lakhdar[1], ZAIDAT Kader[2], FAUTRELLE Yves[2] [1]Université Amar Telidji-Laghouat, [2]Université Grenoble Alpes [1]Algeria, [2]France

HALL - 4

11.June.2021 Friday

MATERIALS FOR ENERGY-1

Session Chairman
Tayfur ÖZTÜRK

13:30 - 14:00 **Invited Speaker**	**Design of Materials for Advanced Energy Storage** Cengiz S. ÖZKAN University of California USA
14:00 - 14:20	**Combinatorial Development of Active Materials for Energy Storge and Conversion** Fatih PİŞKİN[1,3], Hasan AKYILDIZ[2], Tayfur ÖZTÜRK[3] [1]Sıtkı Koçman University, [2]Konya Technical University, [3]Middle East Technical University Turkey
14:20 - 14:40	**High Performance and Flexible Supercapacitor Cells for Energy Storage from Renewable Energy Sources** Apurba RAY, Delale KORKUT, Jenny ROTH, Bilge SARUHAN German Aerospace Center (DLR) Germany
14:40 - 15:00	**On the Surfaces of Complex Oxides** Taner AKBAY[1], John A. KILNER[2,3], Tatsumi ISHIHARA[3] [1]Yeditepe University, [2]Imperial College London, [3]Kyushu University [1]Turkey, [2]United Kingdom, [3]Japan

HALL - 4

11.June.2021 Friday

MATERIALS FOR ENERGY-2

Session Chairman
Billur Deniz KARAHAN

15:10 - 15:30	**Production of Modified Iron Oxide with the Addition of Me (Me: Co,Ni) and Investigation of its Energy Storage Performance** Mehmet Feryat GÜLCAN[1], Billur Deniz KARAHAN[2] [1]Istanbul Technical University, [2]Istanbul Medipol University Turkey
15:30 - 15:50	**Nickel Cobalt Aluminum Oxide (NCA) Cathode Production for Lithium-Ion Battery** Dila SIVLIN, Ozgul KELES Istanbul Technical University Turkey
15:50 - 16:10	**Investigation of the Performance of Colloidal $LiFePO_4$ Particles in Suspension Flow Battery** Bayram YILDIZ[1], Yasemin AŞKAR[1], Elif COŞKUN[1], Bora MAVİŞ[2], Simge ÇINAR[1] [1]Middle East Technical University, [2]Hacettepe University Turkey

HALL - 4

11.June.2021 Friday

MATERIALS FOR ENERGY-3

Session Chairman
Gökçe Hapçı AĞAOĞLU

16:50 - 17:10	**Graphene Alternative 2D Materials: Mxene** Mesut Ramazan EKİCİ, Ahmet ATASOY Sakarya University of Applied Science Turkey
17:10 - 17:30	**Recent Development in 2D Metal Carbides and Nitrides (MXenes) for Energy Storage** Müslüm DEMİR Osmaniye Korkut Ata University Turkey
17:30 - 17:50	**Improved Ionic Conductivity in NASICON-Type Ce^{3+} Doped $LiZr_2(PO_4)_3$ for Li-Ion Batteries** Farah LAMARA, Nedjemeddine BOUNAR University of Jijel Algeria

HALL - 1

12.June.2021 Saturday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-6

Session Chairman
Murat ALKAN

10:00 - 10:20

Effect of Cold Rolling on the Shape Memory Behavior of Ni Rich NiTiHf High Temperature Shape Memory Alloy

H. Onat TUGRUL, Ogulcan AKGUL, Mustafa S. VELIPASAOGLU, Benat KOCKAR

Hacettepe University
Turkey

10:20 - 10:40

The Effect of Lattice Periodicity on the Compression Behavior of the E-Beam Melted Bcc-Like Ti6Al4V Lattices

Alican Tuncay ALPKAYA[1], Burak HIZLI[1], Burcu ARSLAN HAMAT[2], Hakan YAVAŞ[2], Ahmet Alptuğ TANRIKULU[2], Mustafa GÜDEN[1]

[1]İzmir Institute of Technology, [2]Turkish Aerospace Industries
Turkey

10:40 - 11:00

In Situ High Temperature Characterization of 3D-Printed Ti-6Al-4V Alloy

F. R. KASCHEL[1], R. K. VIJAYARAGHAVAN[2], P. McNALLY[2], D. P. DOWLING[1], M. CELIKIN[1]

[1]University College Dublin, [2]Dublin City University
Ireland

HALL - 1

12.June.2021 Saturday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-7

Session Chairman
Mustafa GÜDEN

11:20 - 11:50
Invited Speaker

Novel Technology for Manufacturing Heavy Steel and Superalloy Forgings

Mingyue SUN

Chinese Academy of Sciences
China

11:50 - 12:10

Nature Inspired Macro-Atomistic Design Approach in Additive Manufacturing

Hakan YAVAŞ[1], A. Alptuğ TANRIKULU[1], Alican Tuncay ALPKAYA[2], Mustafa GÜDEN[2]

[1]Turkish Aerospace Industries Inc., [2]İzmir Institute of Technology
Turkey

12:10 - 12:30

Thermo-Mechanical Modelling Study of Electron Beam/Wire Additive Manufacturing Process for Repair Purposes

Fatih SIKAN[1], Priti WANJARA[2], Javad GHOLIPOUR[2], Mathieu BROCHU[1]

[1]McGill University, [2]National Research Council Canada
Canada

HALL - 1

12.June.2021 Saturday

ADVANCED ALLOYS AND PROCESSES FOR AEROSPACE-8

Session Chairman
Benat KOÇKAR

13:30 - 14:00 **Invited Speaker**	**Advances in Thermal Barrier Coatings: Current Status and Future Perspectives** Makoto HASEGAWA Yokohama National University Japan
14:00 - 14:20	**Investigation of the Effect of Chemical Vapor Aluminizing Process Time and Heat Treatment on Nickel Aluminide Coating** Ahmet Arda İNCEYER[1,2], Gökhan GÜVEN[2], Kaan DEMİRALAY[2], Havva KAZDAL ZEYTİN[2], Metin USTA[1,2] [1]Gebze Technical University, [2]Materials Institute of Marmara Research Center of The Scientific and Technological Research Council of Turkey Turkey
14:20 - 14:40	**Investigation of High Temperature Oxidation Behavior of Additively Manufactured in 939 Alloy** Batuhan BAŞBOZKURT, Cevat SARIOĞLU Marmara University Turkey

IMMC 2021

HALL - 1

12.June.2021 Saturday

WELDING METALLURGY-1

Session Chairman
Caner BATIGÜN

15:10 - 15:40 **Invited Speaker**	**Creep Cracking Mechanisms of Welded Joints for Cr-Mo Heat-Resistant Pressure Vessel Steels** Cong WANG Northeastern University China
15:40 - 16:00	**Investigation of Microstructure and Mechanical Properties of Ferritic Stainless Steels Processed with Laser Welding** Günseli GÜÇ, Onuralp YÜCEL Istanbul Technical University Turkey
16:00 - 16:20	**Calculating Effectiveness Of Filler Metals in Reducing Solidification Cracking Susceptibility of AZ31 Mg Alloy** Tayfun SOYSA Igdir University Turkey

HALL - 2

12.June.2021 Saturday

COMPOSITE AND POLYMER MATERIALS-1

Session Chairman
Cevdet KAYNAK

10:00 - 10:30 **Invited Speaker**	**Polymeric Composites with Novel 2D Nanofillers Mxenes** Mária OMASTOVA Polymer Institute Slovak Academy of Sciences Slovakia
10:30 - 10:50	**Simultaneous Activation of Multiple Toughening Mechanisms: Interleaving Layered Composites with Blends of Thermoplastic Polymers** Melike KILIÇOĞLU[1], Erhan BAT[2], Güngör GÜNDÜZ[2], Bora MAVİŞ[1] [1]Hacettepe University, [2]Middle East Technical University Turkey
10:50 - 11:10	**Fabrication and Compressive Behaviour of B_4C Reinforced Al Foam** Bilgehan Cem TURAN, Mevlüt GÜRBÜZ Ondokuz Mayıs University Turkey
11:10 - 11:30	**Development of Resistance Welding Process for Fiber-Reinforced Thermoplastic Matrix Composites: Experimental Analysis and Multiphysics Modeling** Elvan ATEŞ[1], Oğuzhan BAŞ[1], Mete BAKIR[1,2], Fahrettin ÖZTÜRK[1,2] [1]Ankara Yıldırım Beyazıt Üniversitesi, [2]Türk Havacılık ve Uzay Sanayii A.Ş. Turkey
11:30 - 11:50	**Recovered Carbon Blacks for Enviromentally Friendly EPDM Based Sealing Systems** Yusuf GÜNER, Yasemin DURMUŞ, Ali Erkin KUTLU Standard Profil Automotive A.S. Turkey

HALL - 2

12.June.2021 Saturday

COMPOSITE AND POLYMER MATERIALS-2

Session Chairman
Bora MAVİŞ

13:30 - 13:50	**Spark Plasma Sintering and Characterization of B_4C- TiB_2 Composites** Leyla YANMAZ[1], S. Ege PARIM[2], Gültekin GÖLLER[1], Onuralp YÜCEL[1], Filiz Çınar ŞAHİN[1] [1]Istanbul Technical University, [2]Gebze Technical University Turkey
13:50 - 14:10	**The Effect of B_4C Amount on the Wear Properties of Al-B_4C Composites Obtained by High Energy Ball Milling** Sezgin YAŞA, Ahmet KABİL, Burak BİROL Yıldız Technical University Turkey
14:10 - 14:30	**Production and Characterization of Graphene Reinforced Al-10Si Matrix Composites via Powder Metallurgy** Berk ŞENYURT[1], Nazlı AKÇAMLI[1], Duygu AĞAOĞULLARI[2], Hasan GÖKÇE[2] [1]Bursa Technical University, [2]Istanbul Technical University Turkey

HALL - 2

12.June.2021 Saturday

COMPOSITE AND POLYMER MATERIALS-3

Session Chairman
Bora MAVİŞ

15:10 - 15:30	**Development of Novel Production Method for LaFeSi Based Materials and Its Room Temperature Magnetic Properties** Semih ATEŞ[1], Doğaç TARI[1], Şerzat SAFALTIN[1], Sebahattin GÜRMEN[1], Öznur KARAAĞAÇ[2], Hakan KÖÇKAR[2] [1]Istanbul Technical University, [2]Balıkesir University Turkey
15:30 - 15:50	**Liquid Crystal Self-Assembly: A Route for Anisotropic Composites** Selin SENGUL, Emre BUKUSOGLU Middle East Technical University Turkey
15:50 - 16:10	**Development and Characterization of SAC305 Alloy Matrix Composites** Zoltán GYOKER, Gréta GERGELY, Zoltán GACSI University of Miskolc Hungary

HALL - 3

12.June.2021 Saturday

RECYCLING AND SUSTAINABILITY-1

Session Chairman
Burçak EBİN

10:00 - 10:20	**Retrofitting and Recycling Approaches on Aluminium Industry with Computer Aided Engineering and Physical Simulations to Sustain Circular Economy within Retrofeed Project** Zeynep Tutku ÖZEN[1], Tolga DEMİRKIRAN[1], Görkem ÖZÇELİK[1], Hasan Basri TAŞKIN[1], Akın OBALI[2], Kadir KÖSOĞLU[2], Deniz ÜRK[2], Aleksandra KIEDRZYNSKA[3], Beata GLOT[3], Jaroslaw HERCOG[3] [1]ASAŞ Alüminyum A.Ş., [2]Sistem Teknik Endüstriyel Fırınlar Ltd., [3]Institute of Power Engineering [1,2]Turkey, [3]Poland
10:20 - 10:40	**New Regulation Estimation for Efficient and Environmentally Friendly Lamp Recycling in Turkey** S. Samet KAPLAN[1], M. Şeref SÖNMEZ[1], Zeynep AKKAYA[2], Elif KARA[2], Mustafa ÇETİN[2] [1]İstanbul Technical University, [2]AGİD, Aydınlatma Gereçleri İmalatçıları Derneği Turkey
10:40 - 11:00	**Design of Laboratory Type Electric Arc Furnace and Production of Copper Alloy From E-Waste** Rıdvan ORMAN, Barış DARYAL, Oğuz Kağan COŞKUN, Mehtap ARSLAN, Servet İbrahim TİMUR İstanbul Technical University Turkey

HALL - 3

12.June.2021 Saturday

RECYCLING AND SUSTAINABILITY-2

Session Chairman
Onuralp YÜCEL

11:20 - 11:40	**An Overview of Pyrometallurgical Concepts for Recycling of Metals from Waste Electrical and Electronic Equipment** Mertol GÖKELMA, Alireza HABİBZADE Izmir Institute of Technology Turkey
11:40 - 12:00	**White Dross Beneficiation by Pyrometallurgical Methods** İlayda Elif ÖNER, Buse Tuğçe POLAT, Selçuk KAN, Kağan BENZEŞİK, Onuralp YÜCEL İstanbul Technical University Turkey
12:00 - 12:20	**Production of Mo2FeB2-Fe Composites by Using Mill Scale via Self Propagating High-Temperature Synthesis** Bora DERİN, Buse YILMAZ, Faruk KAYA İstanbul Technical University Turkey

HALL - 3

12.June.2021 Saturday

RECYCLING AND SUSTAINABILITY-3

Session Chairman
Mertol GÖKELMA

13:30 - 13:50	**Industrial Study on the Recovery of Platinum Group Metals from the Catalytic Converter** H. Hande CEBECİ[1,3], Berk GÜLÖRTEN[3], Mahmut KARADAŞ[3], Safiye TANRIVERDİ[2,3] [1]Yıldız Technical University, [2]Istanbul University – Cerrahpaşa, [3]Proses Rafinasyon ve Metal Geri Kazanım Makina Sistemleri San. ve Tic. Ltd. Şti Turkey
13:50 - 14:10	**Leaching of Spent Ni-W Hydrodesulphurization Catalyst in H_2SO_4 Solution** Aycan DEMIR, Aycan ISCAN, Ahmet Orkun KALPAKLI, Mert ZORAGA, Sedat ILHAN Istanbul University-Cerrahpaşa Turkey
14:10 - 14:30	**Liberation and Extraction of Valuable Components From Li-ion Battery Waste via Supercritical Carbon Dioxide System** Yuanpeng FU[1,2], Burçak EBİN[2] [1]China University of Mining and Technology, [2]Chalmers University of Technology [1]China, [2]Sweden
14:30 - 14:50	**Thermodynamic and Experimental Study of the Fluoride Recovery from Spent Pot Lining Recycling Process by Precipitation of Calcium Fluoride** Anna Mas HERRADOR[1,2], Jonas SCHUSTER[1], Yuanpeng FU[1,3], Martina PETRANIKOVA[1], Burçak EBİN[1] [1]Chalmers University of Technology, [2]Universitat Politècnica de Catalunya, [3]China University of Mining and Technology [1]Sweden, [2]Spain, [3]China

HALL - 3

12.June.2021 Saturday

RECYCLING AND SUSTAINABILITY-4

Session Chairman
M. Şeref SÖNMEZ

15:10 - 15:30	**Recovery of Valuable Metals from Waste Lithium-Ion Batteries by Metallurgical Routes** Sepehr ABTAHI[1], Kağan BENZEŞİK[1], Ahmet TURAN[2], Onuralp YÜCEL[1] [1]Istanbul Technical University, [2]Yalova University Turkey
15:30 - 15:50	**Indium Recovery from Model Leach Solutions by Solvent Extraction** Doğaç TARI[1], Semih ATEŞ[1], Burçak EBİN[2], Sebahattin GÜRMEN[1] [1]İstanbul Technical University, [2]Chalmers University of Technology [1]Turkey, [2]Sweden
16:10 - 16:30	**Precious Metals Recovery from Residue of the Copper Concentrate Bioleaching Process** Mohammad MOKMELI[1], Amin KHOSHNEVISAN[2], Sina SHAKIBANIA[1], Amin RAFATI[3] [1]University of Tehran, [2]Iranian Fartak Research & Innovation Center, [3]Middle East Meyar Sanat Engineering Company Iran

20th INTERNATIONAL METALLURGY MATERIALS CONGRESS
10-12 June 2021
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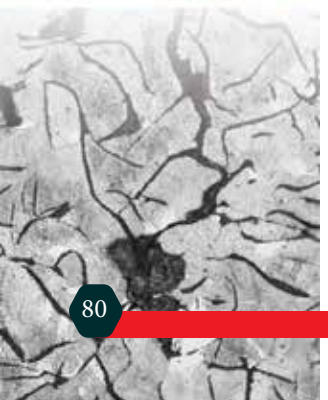

20th INTERNATIONAL METALLURGY MATERIALS CONGRESS

10-12 June 2021

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POSTERS

POSTERS

IMMC-P01	**Air Hardened Bainitic Forging Steel** İ. İsmail İrfan AYHAN[1], Caner GÜNEY[1], N. Başak DÜRGER[1], Emre ALAN[1], Ersoy ERİŞİR[2,3] [1]ÇEMTAŞ R&D Center, [2]Kocaeli University, [3]OBER R&D Turkey
IMMC-P02	**The Site and Phase Preferences of Mo Element in a Model Ni-Al-Mo Superalloy** Rasim ERİŞ, M. Vedat AKDENİZ, Amdulla O. MEKHRABOV Middle East Technical University Turkey
IMMC-P03	**Numerical Simulation and Experimental Analysis of the Dynamic Behaviour of Ternary Metal Alloy (Ga-In-Sn) Flow Driven by Tubular Electromagnetic Stirrer** Brahim HIBA[1], Lakhdar HACHANI[1], Abdallah NOURI[1], Kader ZAIDAT[2], Yves FAUTRELLE[2] [1]Université Amar Telidji de Laghouat, [2]SIMAP-EPM PHELMA, University of Grenoble Alpes [1]Algeria, [2]France
IMMC-P04	**The Effect of Heat Input on Mechanical Properties of Trip Steels in MAG Welding** Gökhan ERİAN[1], Adem KURT[2] [1]Turkish Accreditation Agency, [2]Gazi Univ. Turkey
IMMC-P05	**Invar Anomaly of Cu-Doped Fe64Ni36 Alloys** Ebru GEZGİN[1], Melike Nur ENGELOĞLU[1], Aslı ÇAKIR[1], Uğur Can ÖZÖĞÜT[1], Tolga TAVŞANOĞLU[1], Mehmet ACET[2] [1]Muğla Sıtkı Koçman University, [2]Duisburg-Essen University [1]Turkey, [2]Germany

IMMC-P06

Effect of Electro-Discharge Machining (EDM) on the Microstructure of Selective Laser Melting Processed 17-4 PH Stainless Steels

Andac OZSOY[1,2], Mert KELES[2], Ziya ESEN[3], Arcan F. DERICIOGLU[1]

[1]Middle East Technical University, [2]Roketsan Industries Inc., [3]Çankaya University

Turkey

IMMC-P07

Effect of Submerged Arc Welding on High Temperature Tensile Properties of P91 Type Steel

Junaid ASLAM, Caner BATIGÜN, C. Hakan GÜR

Middle East Technical University

Turkey

IMMC-P08

Production and Characterization of Mg and WE43 Infiltrated Ti6Al7Nb Matrix Composites

Ezgi BÜTEV ÖCAL[1], Ziya ESEN[2], Arcan F. DERİCİOĞLU[1]

[1]Middle East Technical University, [2]Çankaya University

Turkey

IMMC-P09

Hydration Efficiency of Metallic-Ion Incorporated Calcium Phosphate Cement Bone Analogs

Bersu BASTUG AZER, Caner DURUCAN

Middle East Technical University

Turkey

IMMC-P10

Production and Characterization of Si3N4 Reinforced Ti6Al4V Composites

Erdem SAYIN, Mevlüt GÜRBÜZ

Ondokuz Mayıs University

Turkey

IMMC-P11

Setting of CaSO4 Based Bone Cements in the Presence of Eggshell Membrane Protein

Şule KARAGÜLLEOĞLU, M. Utku YILDIRIM, Bora MAVİŞ

Hacettepe University

Turkey

IMMC-P12

Investigation of Natural Hydroxyapatite Originated from Salmon Fish Bone Wastes

Merve BAS[1], Sibel DAGLILAR[1], Nilgun KUSKONMAZ[1], Cevriye KALKANDELEN[2], Oguzhan GUNDUZ[3]

[1]Yıldız Technical University, [2]Istanbul University- Cerrahpasa, [3]Marmara university

Turkey

IMMC-P13

Hydroxyapatite Production in Solution Combustion Synthesis Using Different Fuels

Deniz ALTAN ALTINBAŞ[1], Şevki Samet KAPLAN[1], Sadia ILYAS[2], M. Şeref SÖNMEZ[1]

[1]Istanbul Technical University, [2]Jeonbuk National University

[1]Turkey, [2]Korea

IMMC-P14

The Operational and Quality Effects of Dynamic Superheat Control During the Continuous Casting Process

İsa KESKİN, Sergen Ali KAT

Heraeus Electro-Nite Turkey, Ekinciler Demir Çelik A.Ş.

Turkey

IMMC-P15

Optimization of High Pressure Die Casting Parameters for the Minimization of Porosities in Aluminium AlSi9Cu3 Casting Parts

Leyla ŞİMŞEK[1,2], Ahmet TURAN[2], M.Cahit ENSARİ[2]

[1]Kırpart Inc., [2]Yalova University

Turkey

IMMC-P16

Hardness and Microstructural Evaluation of the Graphene Reinforced Al Composites Using Waste Beverage Cans

Özgür YILMAZ, Mevlüt GÜRBÜZ

Ondokuz Mayıs University

Turkey

IMMC-P17

An Analytical Approach to Fortification Walls of Ephesos Lysimakhos

Cansu NOBERİ, Fırat BARANAYDIN

İstanbul Gelişim Üniversitesi

Turkey

IMMC-P18

A Preliminary Study on TiO_2 Coating Deposited on the AISI 2205 by High Energy Ball Milling

Serhat ACAR[1], Burak BİROL[1], Alptekin KISASÖZ[2]

[1]Yıldız Technical University, [2]Kırklareli University

Turkey

IMMC-P19

Evaluation of Glass Waste in Ceramic Glazes

Fatma GÖL[1], Ali YILMAZ[1], Selin ŞİMŞEK[1], Emre KAÇAR[1], Zeynep Gizem SARITAŞ[1], Çiğdem TÜRE[1], Melek ARSLAN[1], Fatih ŞEN[1,2]

[1]Keramika Ceramics, Ünsa Mining, Tourism, Energy, Ceramics, Forest Products, Electricity Production Industry, [2]Dumlupınar University

Turkey

IMMC-P20

Enhancing the Ductility of 3D-Printed Polylactic Acid

Burçin KAYGUSUZ, Sezer ÖZERİNÇ

Middle East Technical University

Turkey

IMMC-P21

Synthesis of Barium Strontium Titanate (BST) Ceramics for Tunable Polymer Matrix Composite Substrates

Nazlı ÖZKARAGÖZ, Başar SÜER, Arcan F. DERİCİOĞLU

Middle East Technical University

Turkey

IMMC-P22

Production and Characterization of B_4C Reinforced Al-8.5Si-3.5Cu Matrix Composites via Powder Metallurgy

Berk ŞENYURT, Nazlı AKÇAMLI

Bursa Technical University

Turkey

IMMC-P23

Electrostatic Flocking of Small-Sized Flocks

M. Utku YILDIRIM[1], Erhan BAT[2], Bora MAVİŞ[1]

[1]Hacettepe University, [2]Middle East Technical University

Turkey

IMMC-P24

Hollow Glass Microsphere and Glass Bead-Polyamide 12 Composites Production by Selective Laser Sintering Method

Burçin ÖZBAY[1,2], İ. Ersin SERHATLI[2], M. Enes BULDUK[1]

[1]Fatih Sultan Mehmet Vakif University, [2]Istanbul Technical University

Turkey

IMMC-P25

Corrosion and Wear Resistance of Aluminum Bronze Increased by Heat Treatment

Aleattin KULAKLI, Talip ÇİTRAK, Serdar TOZKOPARAN, Aydın Barış ŞİMŞİR, Edanur KASAP

Sağlam Metal A.Ş.

Turkey

IMMC-P26

Fabrication of Colloidal and Conductive $LiFePO_4$ Particles for Suspension Flow Batteries

Yasemin AŞKAR[1], Bayram YILDIZ[1], Bora MAVİŞ[2], Simge ÇINAR[1]

[1]Middle East Technical University, [2]Hacettepe University

Turkey

IMMC-P27

Bimetallic Metal-Organic Frameworks for Wearable Energy Storage Systems

Farzaneh HEKMAT, Husnu Emrah UNALAN

Middle East Technical University

Turkey

IMMC-P28

Synthesis of Lithium Iron Phosphate with Controlled Size and Shape

Elif ÇOŞKUN[1], Bayram YILDIZ[1], Yasemin AŞKAR[1], Bora MAVİŞ[2], Simge ÇINAR[1]

[1]Middle East Technical University, [2]Hacettepe University

Turkey

IMMC-P29	**Fractographic and Metallurgical Analysis Investigations of the Failure of HP Turbine Blade**	M.A. DJERIDANE[1], M. FERHAT[2], H.A. BENHORMA[2] [1]Sonatrach-Direction Maintenance Laghouat Company, [2]University of Laghouat Algeria
IMMC-P30	**A Study on The Failure Mechanisms of Various Milling Inserts**	Nuray Beköz ÜLLEN, Gizem KARABULUT Istanbul University-Cerrahpaşa Turkey
IMMC-P31	**Effect of Coating on Surface Integrity of Tools and End Products after Piercing Operation**	Fuat Can AĞARER[1], Hatice SANDALLI[1], M. Burak TOPARLİ[2], İ. Etem SAKLAKOĞLU[3] [1]Norm Somun San. ve Tic. A.Ş., [2]Nedu Bağlantı Elemanları San. ve Tic. A.Ş., [3]Ege Üniversitesi Turkey
IMMC-P32	**Microstructure, High Strength and Electrical Conductivity of the Ufg Cu-0.5%Cr-0.2%Zr Alloy Processed by HPT**	Igor ALEXANDROV[1], Wei WEI[2], Elena SARKEEVA[1], Vil SITDIKOV[1] [1]Ufa State Aviation Technical University, [2]Changzhou University [1]Russia, [2]China
IMMC-P33	**Morphological, Optical and Electrochromic Properties of Vanadium Pentoxide Thin Films Prepared by Ultrasonic Spray Deposition Method**	Yusuf TUTEL, Seyma KOC, Mete Batuhan DURUKAN, Serkan KOYLAN, Husnu Emrah UNALAN Middle East Technical University Turkey

IMMC-P34	**Fabrication of P-type CuI Nanowires Networks for Transparent Flexible Electronics**	Alptug CALASIN[1], Aleyna ASCIOGLU[1], Serkan KOYLAN[1], Sensu TUNCA[1], Sahin COSKUN[2], Husnu Emrah UNALAN[1] [1]Middle East Technical University, [2]Eskisehir Osmangazi University Turkey
IMMC-P35	**Functionalization of Glass Fiber Woven Fabrics by Transparent Conducting Oxide (TCO) Thin Films and Characterization of Their Electromagnetic Properties**	Merve OZDIL, Tilbe BETIN, Caner DURUCAN, Arcan F. DERICIOGLU Middle East Technical University Turkey
IMMC-P36	**Determination of the Effectiveness of the Conservation Area by Using Nano Particles on Archaic Stones with $CaCO_3$ Content**	Halit S. CANOL[1], Cem B. ÜSTÜNDAĞ[2], Rıza G. AKGÜN[3] [1]Mimar Sinan Fine Art University, [2]Yıldız Technical University, [3]Maltepe University Turkey
IMMC-P37	**Characterization of Zirconium-Tantalum Metallic Glass Coatings Produced by Combinatorial Sputtering**	Ali Bagheri BEHBOUD[1], Gökhan TARMAN[2], Amir MOTALLEBZADEH[3], Sezer ÖZERİNÇ[1] [1]Middle East Technical University, [2]TOBB University of Economics and Technology, [3]Koç University Turkey
IMMC-P38	**A Comparative Study in the Economy of the Hydrometallurgical and Pyrometallurgical Copper Extraction from Low-Grade Chalcopyrite Ores**	Mohammad MOKMELI[1], Masoumeh Torabi PARIZI[2], Hassan Sahraei PARIZI[2] [1]University of Tehran, [2]R&D Center of Sarcheshmeh Copper Complex Iran

IMMC-P39	**Industrial Study of Tantalum Metal Production from Ore with Alkaline Process**	Safiye TANRIVERDİ[1,2], H. Hande CEBECİ[2,3], Cem KAHRUMAN[1] [1]İstanbul University – Cerrahpaşa, [2]Proses Rafinasyon ve Metal Geri Kazanım Makina Sistemleri San. ve Tic. Ltd. Şti, [3]Yıldız Technical University Turkey
IMMC-P40	**Effect of Building Direction and Thermo-Hydrogen Processing on the Microstructure and Texture of Electron Beam Melting (EBM) Processed Ti6Al4V Alloy**	Merve N. DOĞU[1,3], Ziya ESEN[2], Kemal DAVUT[3,4], Evren TAN[5], Berkay GÜMÜŞ[5], Arcan F. DERİCİOĞLU[1] [1]Middle East Technical University,[2] Çankaya University, [3]Atılım University, [4]Metal Forming Center of Excellence, [5]ASELSAN A.Ş. Turkey
IMMC-P41	**Characterization of Interfaces Between Intermetallic Precipitates and Matrix in Some Magnesium Alloys**	Uğur Can ÖZÖĞÜT[1], Servet TURAN[2], Ali Arslan KAYA[3] [1]Muğla Sıtkı Koçman University, [2]Eskişehir Technical University Turkey
IMMC-P42	**Nanostructured High Entropy Alloys with High Strength**	Ö. Gökhan TARMAN[1], M. Yiğit KÖHNETARFUN[1], Amir MOTALLEBZADEH[2], Sezer ÖZERİNÇ[3] [1]TOBB University of Economics and Technology, [2]Koç University, [3]Middle East Technical University Turkey
IMMC-P43	**Determination of Mixing Ratio of Alloy Materials in Manufacturing of Power Transmission Line Aluminium Alloy Conductor**	İ. BİNBUĞA, Ü. UNCU, E. KISTI, H. AYKANAT, İ. GÖK, S. ÖZER EMTA Conductor &Cable Turkey

IMMC-P44	**Determination, Examination and Improvement of Breaking Problems in Wire Drawing Processes of 6101 Series 9,5 mm Diameter Aluminum Alloy Wire Rods**	Necati OCAK[1], U. G. UNCU[1], İ. BİNBUĞA[1], S. ASLAN[2], E. DURU[2] [1]Emta Conductor&Cable, [2]Sakarya University Turkey
IMMC-P45	**Investigation, Development of Parameters Affecting the Technical Properties of ACCC Lisbon Aluminium Conductor and Comparison with ACSR Hawk Conventional Conductor**	Necati OCAK[1], U.G. UNCU[1], E. BİLDİK[1], E. KISTI[1], C. DURMAZ[1], Serdar ASLAN[2] [1]Emta Conductor&Cable, [2]Sakarya University Turkey
IMMC-P46	**The Effect of Tin Addition and T6 Heat Treatment on the Mechanical Properties of A356 Aluminum Alloy**	Selda HASÇELİK, Işıl KERTİ Yıldız Technical University Turkey
IMMC-P47	**Fire Resistant Composite Doors Concepts and Smart Modular Design**	Cem MEHMETALİOĞLU, Murat KONAR, Görkem ÖZÇELİK, Zafer ZORLU, Tutku ÖZEN ASAŞ Alüminyum Sanayi ve Ticaret A.Ş. Turkey
IMMC-P48	**Production and Analysis of Cu and CuNi Nano Particles with Solution Combustion Synthesis**	Mustafa Çağrı ALTINBAŞ[1], Şevki Samet KAPLAN[1], Sadia ILYAS[2], M. Şeref SÖNMEZ[1] [1]Istanbul Technical University, [2]Jeonbuk National University [1]Turkey, [2]Korea

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Evaluation of Determination of Aluminum Wire Rod Surface and Subsurface Defects by Eddy Current Method

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IMMC-P50

Recovery of Rare Earth Elements (Nd, Gd, and Dy) from Apatite Concentrate, Esfordi Mine-Yazd Province

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IMMC-P51

Production of Alumina-Based Ceramics from Aluminium Black Dross

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IMMC-P52

Production of FeCo from Mill Scale Through Aluminothermic Reduction

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IMMC-P53

Effect of Flash Design on Efficiency in Hot Forging Process

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IMMC-P54

Recovery of WC and Co-Based Compunds from Waste Cutting Tools through Hydrometallurgical Route

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IMMC-P55

Solid State Synthesis of Li_4SiO_4 Using Different Kind Steel Slags as SiO_2 Source

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IMMC-P56

The Influence of Change in Microstructure by Heat Treatment on Drill Quality of Hot Forged AISI 4140 Steel

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IMMC-P57

Effects of Microalloying Elements on Microstructure and Mechnical Properties of Leaf Sprig Steels

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IMMC-P58

Effects of Pre-Heat Treatment on Mechanical and Microstructural Properties of Q&T and Bainitic Steels

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IMMC-P59

Increasing the Rate of Hot Charging and Reducing Energy Consupmtion by the Hot Rolling Mill Monitoring Screen Approach

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IMMC-P60

Increasing the Quality of the Surface with Transformation from Adhesive Scale to Easy to Remove Scale

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IMMC-P61

Power Transformer Fault Diagnosis with Fuzzy Logic Based Oil Dissolved Gas Analysis

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IMMC-P62

Effect of Sintering Conditions on Microstructural and Mechanical Properties of Injection Molded 420 Martensitic Stainless Steel

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IMMC-P63

The Effect of Crystallographic Texture and Microstructure on Hydrogen Permability of Enamel Steels

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IMMC-P64

Influence of Hydrochloric Acid Temperature on Pickling Efficiency Before Wire Drawing

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IMMC-P65

Boriding of AISI 304L Stainless Steel via CRTD-BOR Method

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Comparison of Microstructural and Optical Properties of TiO_2 Thin Films Synthesized by Sol-Gel Dip Coating and Spin Coating Techniques

Özge ÖZGÜN, Muhammed NAJAR, Aslı ÇAKIR, Tolga TAVŞANOĞLU

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IMMC-P67

Investigation of Delaying Cold Heading Crack Formation with Shot Peening Process

Cenk KILIÇASLAN, M. Burak TOPARLI, Sezgin YURTDAŞ, Doğuş ZEREN, Barış TANRIKULU

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Effect of Heat Treatment Parameters on the Microstructure and Mechanical Properties of 30CrNiMo8 Steel

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IMMC-P69

Temperature Distribution Analysis of Thin Metal Surfaces by Induction Heating

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Improvement of Orbital Cutting Blade Life With Tin Coating

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Microstructural and Mechanical Characterization of Spot Welds on AISI 430 Ferritic Stainless Steel Sheets

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The Optimization of Super Impact MIG Welding Process of ETIAL 171 Alloy Diameter Parts Produced By Die Casting

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New Ideas in X-Ray Diffractive Characterization of Nanomaterials

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A Microstructural Investigation of 1 Mol% H3BO3 and 0.5 Mol% MnO Added ZnO Ceramics

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Preparation and Structural Characterization of $NiMn_2O_4$ Ceramics

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Experimental Study of the Solidification of Sn-10wt.%Pb Alloy Under Forced and Natural Convection in Benchmark Experiment

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The Effect of Cooling Rate on the Mechanical Properties, Microstructure and Formation of Oxide Scale in Welding Wire Rod Grade for Submerged Arc Welding

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Definition of Martensite Structures by XRD Method in Carbon Steel (C80)

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Bf No4 Slag Granulation (INBA) Facility Solution of Chimney Floor Abrasion Problems

İbrahim ÇAKMAK, Mehmet Atıl TUNÇ, Ümit GEBENLİ

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