

JOM TECHNICAL TOPICS

Find peer-reviewed technical articles covering the full range of minerals, metals, and materials science and engineering in the March issue of *JOM: The Journal*. Each issue features several technical topics presenting a series of related articles compiled by guest editors. A preview of March technical topics and articles are listed below. TMS members can log in to www.tms.org/Journals for full access to technical articles from *JOM: The Journal* and additional TMS journals.

Below is a sample of articles that will appear in the March issue, based on information available at press time. For the most up-to-date article listing, visit www.tms.org/JOM.

MARCH 2024

Electrical Steels

Editors: Youliang He, Natural Resources Canada; and Leo Kestens, Ghent University

Sponsor: Steels Committee

"The Early Stage Formation of Shear Orientations and the Stability of <001>ND Orientations During Hot Rolling in Electrical Steels," **Huanzhu Wang**, et al.

"Microstructure, Particle Size, and Magnetic Property of Fe-6.5wt.% Si Nanocrystalline Alloys Prepared by Mechanical Alloying," **Yang Sun**, et al.

"Effect of Annealing Temperature and Time on the Magnetic Properties and Magnetic Anisotropy of a Temper-rolled, Semi-processed Non-oriented Electrical Steel," **Youliang He**, et al.

"The Addition of Boron to Melt-Spun Fe-6.5%Si Ribbons," **Gaoyuan Ouyang**, et al.

"Grain Structure Evolution in Fe-6Si During Directed Energy Deposition," **A. Plotkowski**, et al.

"Evolutions of Microstructure and Crystallographic Texture in an Fe-1.2 wt.% Si Alloy After (A)symmetric Warm Rolling and Annealing," **Tuan Nguyen-Minh**, et al.

"Some Aspects of Magnetic Anisotropy in Non-Grain-Oriented (NGO) Electrical Steels," **Bevis Hutchinson**, et al.

"The Impact of Temperature on the Electric, Magnetic and Thermal Properties in the Selection of Ferromagnetic Materials for Traction Machines," **Sigrid Jacobs**, et al.

Mechanistic Interactions in Energy Storage

Editors: Partha Mukherjee, Purdue University; Pallab Barai, Argonne National Laboratory; Dibakar Datta, New Jersey Institute of Technology; and George Nelson, University of Alabama in Huntsville

Sponsor: Energy Conversion and Storage Committee

"Preparation of Fe₂O₃/Mn₃O₄/C Composites as High Performances Anode Materials for Lithium-Ion Batteries," **Xiaoyan Zhang**

"Phase Field Modeling of Pressure Induced Densification in Solid Electrolytes," **Pallab Barai**, et al.

"On the Impact of Mechanics on Electrochemistry of Lithium-Ion Battery Anodes," **Ankit Verma**, et al.

"Probing Asymmetric Plating and Stripping Behavior of Symmetric Sodium Metal Batteries," **Susmita Sarkar**, et al.

"Mechanical and Li Diffusion Properties of Interface Systems in the Solid Electrolyte Interphase," **Yunxiang Wang**, et al.

"Galvanic Replacement of Magnesium Nanowire Arrays to form Templated Antimony Frameworks," **Luis Carrillo**, et al.

"Advances in Inorganic Solid Electrolytes: A Mini Review," **Yi-An Wang**

"Electro-Chemo-Mechanical Modeling of Multiscale Active Materials for Next-Generation Energy Storage: Opportunities and Challenges," **Dibakar Datta**

"The Linkage Between Electro-Chemical and Mechanical Instabilities in Battery Materials," **Minal Wable**, et al.

"Can We Intuitively Tune Electrochemical Reactions by Changing Electrolyte Species?" **Aashutosh Mistry**

"Unleashing the Potential of NASICON Materials for Solid-State Batteries," **Anand Parejija**, et al.

Powder-based Functional Materials for Extreme Environments: Processing and Characterization

Editors: David Yan, San Jose State University; and Tim Prost, Uniformity Labs, Inc.

Sponsor: Powder Materials Committee

"Production of AA 2014 Matrix Wollastonite/Wood Ash Solid Waste Particle Reinforced Hybrid Composite with Powder Metallurgy and Investigation of Its Structural Properties," **Hakan Gökmeşe**, et al.

"Development of Heat-Resistant Composites Based on Al-Mg-Si Alloy Mechanically Alloyed with Aluminide Particles," **A. S. Prosviryakov**, et al.

"Process Parameter Optimization and Improved Properties of Large Electric Current Sintered Mo-W-Cu Alloys Using Orthogonal Analysis," **Hongling Zhou**, et al.

"Preparation of Spherical Porous and Spherical Ti6Al4V Powder by Copper-Assisted Spheroidization Method," **Jin Qian**, et al.

"Thermal Conductivity and Microstructure of Cu-Coated Graphite Flake/Ti Alloy Composites Fabricated by Spark Plasma Sintering," **Zunyue Yu**, et al.

"Experimental Optimization of Blended Powder Semisolid Forming Parameters for Production of 316L Stainless Steel Nanocomposites Reinforced with Al_2O_{3np} ," **Akbar Javdani**, et al.

"Study on the Permeability and Mechanical Properties of Copper Powder/Mesh Porous Plates," **Yingmao Chen**, et al.

"Evaluation of High-Vacuum Annealing and Hot Isostatic Pressing on the Microstructure and Properties of an Additively Manufactured Niobium Alloy," **Carter Fietek**, et al.

"A Tutorial Review on Composites of Silica and Smart Microgels," **Muhammad Arif**

Recent Developments on Metals and Energy Extraction from Waste Streams

Editors: Fiseha Tesfaye, Åbo Akademi University, Metso Outotec Metals Oy;

Joseph Hamuyuni, Metso Outotec Research Center; **Chukwunwike Iloeje**, Argonne National Laboratory;

Leiting Shen, Central South University; and **Dirk Verhulst**

Sponsor: Energy Committee and Recycling and Environmental Technologies Committee

"Thermal Analysis and Phase Equilibria of the Molten System Na_3AlF_6 - NdF_3 - Nd_2O_3 ," **Dhiya Krishnan**, et al.

"Influence Mechanism of Phase Change on Leaching of Metal Elements from Ternary Lithium Ion-Battery Waste in Citric Acid," **Xiaoyu Wu**, et al.

"Recovered Scandium from Tungsten Residue with High Silicon Content," **Jinxi Qiao**, et al.

"Recovery of Tellurium from Cyanide Leaching Gold Tailings and the Leaching Mechanism of Lead Telluride," **Wei Yang**, et al.

"A Case Study of Producing Alumina from High-Sulfur Diasporic Bauxite: Sulfur-Containing Desilication Products and Pyrite in Red Mud," **Saikui Wang**, et al.

"Study on the Effect of Thermal Activation on Arsenic Removal from Industrial Wastewater," **Bo Yu**, et al.

"Vanadium Recovery from Bayer Process Liquor Residue," **Massimiliana Pietrantonio**, et al.

"Dimensional Variation and Parametrical Feasibility for Utilizing Aluminum Cast-House Flue Gases to Supplement Heat for the Organic Rankine Cycle (ORC)," **Nan Zou**, et al.

"Construction of Valuable Element Allocation Model of Cobalt-rich Slag in the Hydrometallurgy Process," **Qian Li**, et al.

"Thermodynamics of Separating Molybdenum(VI) Over Iron(III) from High Acid Leach Solutions with Mixtures of P507 and N235," **Miaomiao Peng**, et al.

"Optical and Dielectric Properties of Multiphase Phosphate Obtained from Phosphoric Acid Treatment of Bauxite Residue," **Kishore Kumar Mayuranathan**, et al.

"Recovery of Lithium from Beta-Spodumene Through Serial Calcination and Water Leaching with CaO," **Dongseok Lee**, et al.

"Sodium Removal from Aluminum Electrolysis Spent Anodes (Butts) Through Aluminum Sulfate Hydrothermal Acid Leaching," **Chengcheng Xia**, et al.

"Mechanical Activation of Coal Fly Ash for the Improvement of Alumina-Silica Separation During Reduction Roasting-Alkaline Leaching Process," **Hongyang Wang**, et al.

"Effect of Iron Content on High Strength and Environmentally Friendly Water-Permeable Bricks Prepared From W-Mo Tailing and Iron Slags," **Hongrui Guan**, et al.

"Comprehensive Extraction of Silica and Alumina from Coal Fly Ash Via Reduced and Oxidized Roasting–Low Temperature Alkaline Leaching and Bayer Digestion," **Peng Wang**, et al.

"Recycling of Yttrium and Europium from Microwave-roasted Waste Cathode Ray Tube Phosphor Powder," **Rajiv Ranjan Srivastava**, et al.

"Recovery of Alumina and Alkali from Red Mud Using NaFeO_2 (NF) as an Additive in the Hydrothermal Process," **Jun Shao**, et al.

"Study on the Extraction of Valuable Components from Aluminum Electrolysis Spent Carbon Anode by Mechanical Activation Assisted Flotation," **Liu He**, et al.

"Study on the Cavitation and Dissociation of Sulfur from Zinc Leaching Residue," **Weizhi Zeng**, et al.

"Characterization of Nickel in Chromite Beneficiation Tailings by Mineral Liberation Analysis and Its Recovery by H_2SO_4 Leaching Followed by Oxalic Acid Precipitation," **Mahmut Altiner**, et al.

"Recycling Of Spent Catalysts from the Petrochemical Industry by Hydrometallurgy to Obtain High-Pure Nickel Products for Electroplating," **Nayara Gomes**, et al.

"Investigation into the Impact of Fe_2O_3 , MgO , and Al_2O_3 Contents on the Ca Ions Leaching Rate of Steel Slag," **Yinbo Luo**, et al.

"Investigation of the Optimal Recovery of Sn, Pb, Cu, and Ni from E-waste Generated Type of Slags in the Black Copper Processing Route," **Niklas Jylhävuori**, et al.

"Physical Concentration of Heavy Minerals: A Brief Review on Magnetic Separation Process Techniques," **Nnaemeka Stanislaus Nzeh**, et al.

"Recycling NdFeB Magnets and Rare Earth Fluorescent Materials from Electronic Waste," **Qiande Xu**, et al.

The Role of Microstructure on the Mechanical Behavior of Materials

Editors: Cyril Williams, DEVCOM Army Research Laboratory; and Kris Darling, DEVCOM Army Research Laboratory

"A Review of the Anomalous Dynamic Behavior in Magnesium Alloys," **Kiran Solanki**, et al.

"Microstructural Analysis of the Improved Strength–Ductility Combination in Titanium Alloy with Bi-modal Structure," **Wenguang Zhu**, et al.

"Age-Hardening Behavior and Phase Transformation of Mg-9.2Gd-1.9Y-1.8Zn-0.5Zr Alloy," **Yunfang Liu**, et al.

"Relationship Between Powder Size, Prior Particle Boundaries and Properties of FGH4096M Nickel-Based Superalloy," **Xiaona Ren**, et al.

"Role of Crystal Orientation in the Dynamic Strength of Magnesium Alloy AZ31B," **J. C. Jonsson**, et al.

"Microstructural Characterization and Nanomechanical Properties of Multilayer Graphene on Metal Substrates," **Salil Bavdekar**, et al.

"The Role of Target Melting in Particle Impact Ignition with Inert Particulate," **Spencer V. Taylor**, et al.

ANNUAL MEETING OF THE MEMBERSHIP ANNOUNCEMENT

The Minerals, Metals & Materials Society, Inc. (TMS), in accordance with its bylaws (Article II, Section 2.6, and Article III, Section 3.7) will hold its 2024 Annual Meeting of the Membership with Open Board of Directors Meeting, on Thursday, March 7, 2024, at 8:00 a.m. at the Hyatt Regency Orlando, during the TMS 2024 Annual Meeting & Exhibition in Orlando, Florida.

