JOM, Vol. 71, No. 1, 2019
https://doi.org/10.1007/s11837-018-3295-0

call for papers

***JOM* is seeking contributions on the following topics for 2019. For the full Editorial Calendar, along with author instructions, visit the *JOM* website at jom.tms.org.**

July 2019:
Manuscript Deadline: February 1, 2019

Topic: Second-Phase Particles in Magnesium Alloys: Engineering for Properties and Performance
Scope: Alloy and process design to control second-phase particle distribution is a key aspect of the future of magnesium alloys. This special topic is a holistic review of advances in the understanding of second-phase effects on magnesium alloy behavior.
Guest Editors: Victoria Miller and Petra Maier
Sponsor: Magnesium Committee

Topic: Composition-Processing-Microstructure-Property Relationships of Titanium Alloys
Scope: This topic seeks papers addressing emerging or novel uses of titanium, and investigations with an emphasis on the interplay between processing, microstructure, properties, and performance are encouraged. Titanium and titanium alloys, including beta, alpha+beta, intermetallic alloys as well as titanium matrix composites will be applicable.
Guest Editors: Benjamin M. Morrow, Carl J. Boehlert, Kayla L. Calvert, Yufeng Zheng, and Peter C. Collins
Sponsor: Titanium Committee

Topic: Urban Mining: Characterization and Recycling of Solid Wastes
Scope: Since the solid wastes in urban areas have become significant environmental concerns, the recycling and reuse of these waste materials is attracting great attention both in the public and in the materials industry. This topic will focus on the characterization of urban waste materials and the effective extraction of metals from the materials.
Guest Editors: Mingming Zhang and Bowen Li
Sponsors: Materials Characterization Committee and Recycling and Environmental Technologies Committee

Topic: Advanced Manufacturing for Nuclear Energy
Scope: Of interest for this topic are papers on additive manufacturing, advanced welding and cladding techniques, powder metallurgy, high performance concrete and rebar, surface modification, in-situ quality control, inspection, and advanced machining.
Guest Editors: Xiaoyuan Lou and David Gandy
Sponsor: Nuclear Materials Committee

Topic: ICME 2019
Scope: The 5th World Congress on Integrated Computational Materials Engineering (ICME 2019) convenes leading researchers and practitioners of ICME to share the latest knowledge and advances in the discipline. This congress is the recognized hub of interaction among software developers and process engineers along the entire production chain, as well as for materials scientists and engineers developing new materials. Only submissions from congress attendees will be considered for publication in *JOM*.
Sponsor: Invited

August 2019:
Manuscript Deadline: March 1, 2019

Topic: Solidification Defects in Additive Manufactured Materials
Scope: Solidification defects, such as porosity and hot cracking, are commonly observed in a variety of metal additive manufacturing processes, not limited to powder bed fusion, direct energy deposition, and binder jet processes. New scientific discoveries and/or industrial applications to understand and/or control solidification defects are welcome for publication.
Guest Editor: Lang Yuan
Sponsor: Solidification Committee

Topic: Characterization of Advanced Sintering Materials
Scope: Sintering is one of the major processes for synthesis and production of various materials such as ceramics, polycrystalline alloys, sintered ores, iron ore pellets, calcined minerals, slags, and organic metals. This topic will focus on the sintering process, phenomenon, and mechanisms of a material by heating at high temperature.
Guest Editors: Mingming Zhang and Bowen Li
Sponsor: Materials Characterization Committee

Topic: Multiscale Computational Strategies for Heterogeneous Materials with Defects

Scope: Multiscale modeling is a familiar theme, integral to heterogeneous materials. Challenges are encountered in the presence of evolving defects at multiple scales leading to extreme behavior. Such complexities may be addressed by a combination of hierarchical (bottom-up) and concurrent (top-down coupling) strategies. This topic is devoted to approaches addressing these issues.
Guest Editors: Somnath Ghosh and David McDowell
Sponsor: ICME Committee

Topic: Precipitation Mechanisms in Non-ferrous Alloys

Scope: This topic addresses the range of phase transformation behavior and mechanisms across a series of different non-ferrous metal alloys. The papers will address the implications of such phase changes on microstructure and associated properties.
Guest Editors: Gregory Thompson, Deep Choudjuri, Rajarshi Banerjee, and Eric Lass
Sponsor: Phase Transformations Committee

September 2019:

Manuscript Deadline: April 1, 2019

Topic: Aluminum: Recycling and Environmental Footprint

Scope: This topic covers recycling of aluminum and its alloys as well as the environmental ramifications of both primary and secondary aluminum.
Guest Editors: David Wong and Pascal Lavoie
Sponsors: Aluminum Committee and Recycling and Environmental Technologies Committee

Topic: Advanced Electronic Interconnection

Scope: Papers are invited for this special topic covering recent advances of bonding technologies for 2.5D and 3D IC, wide-band-gap (WBG) semiconductors, and flexible electronics.
Guest Editor: Shih-kang Lin
Sponsor: Alloy Phases Committee

Topic: Advances in Processing, Manufacturing, and Applications of Magnetic Materials

Scope: Papers are invited on novel magnetic materials, advances in processing or relevant property measurement, and circular manufacturing of magnetic materials. Of interest are permanent and soft magnets and magnetocaloric materials, and also multifunctional magnetic materials such as magnetoelastic, magnetoelectric, and magnetoresistive materials.
Guest Editors: Orlando Rios and Ikenna Nlebedim
Sponsors: Magnetic Materials Committee and Energy Conversion and Storage Committee

Topic: Comparison of Recycling Methods for Industrial Metals

Scope: This topic will compare recycling methods for different metals which will stimulate thinking about similarities and differences and engender improvements in recycling processes and in the use of metals.
Guest Editor: Dirk Verhulst
Sponsor: Recycling and Environmental Technologies Committee

Topic: Sustainable Pyrometallurgical Processing

Scope: This topic covers the development of recycling and bio-based fuel technologies to meet current environmental standards as well as sourcing issues. Fields include but are not limited to: process optimization, alternative material sourcing, by-product utilization, and energy efficiency.
Guest Editors: Joseph Grogan and Camille Fleuriault
Sponsor: Pyrometallurgy Committee

October 2019:

Manuscript Deadline: May 1, 2019

Topic: New Developments in Nanomechanical Methods

Scope: This special topic will focus on the advances used to measure mechanical properties of small-volume and low-dimensional materials, as well as bulk nanostructured materials. Of particular interest are new instrumentation, methods, and environmental control to evaluate mechanical behavior in terms of size effects, time scales, environmental testing, as well as in-situ experimental methods.
Guest Editors: Megan Cordill and Janelle Wharry
Sponsor: Nanomechanical Materials Behavior Committee

Topic: Microstructure Evolution During Deformation Processing

Scope: Understanding how deformation processing techniques can control the microstructural evolution in metals is vital for alloy development. Papers are invited that investigate aspects of microstructural evolution during deformation processing.
Guest Editor: Daniel Koughlin
Sponsors: Shaping and Forming Committee and Advanced Characterization, Testing, and Simulation Committee

Topic: Progress in High-Entropy Alloys

Scope: High-entropy alloys (HEAs) loosely refer to multi-principal-element solid solution alloys due to their high configurational entropy. This special topic on high-entropy alloys invites contributions from authors working in the various fields of HEAs to disseminate the rapid progress in this fascinating and expanding class of advanced materials.
Guest Editors: Chuang Zhang, Michael C. Gao, and Shih-kang Lin
Sponsor: Alloy Phases Committee

Topic: Modeling and Simulation of Composite Materials

Scope: This topic will highlight modeling and simulation currently used in advancing the understanding of the complex interactions and structure-property relationship in composite materials by ab-initio methods, atomistic methods, mesoscale simulations, finite element methods, and multi-scale modeling.
Guest Editors: Rakes Behera, Dinesh Pinisetty, and Dung Luong
Sponsor: Composite Materials Committee