



call for papers

JOM is seeking contributions on the following topics for 2018. For the full Editorial Calendar, along with author instructions, visit the JOM website at jom.tms.org.



August:

Manuscript Deadline: March 1, 2018

Topic: Advanced Materials for Energy Storage and Conversion Applications

Scope: Energy storage and conversion technologies play a critical role in solving today's environmental issues. Current technologies include all types of fuel cells, batteries, supercapacitors, photovoltaics, thermoelectrics, etc. This topic will include research and development of various types of materials for energy storage and conversion applications.

Guest Editors: Amit Pandey and Guihua Yu

Sponsor: Energy Conversion and Storage Committee

Topic: Reducing AI Production Impact: GHG Emissions, Energy Reduction & Recovery

Scope: This topic aims at presenting advances and future challenges for the aluminum production process in reducing greenhouse gases emissions including perfluorocarbons, specific energy consumption, and energy recovery technologies.

Guest Editor: Pascal Lavoie

Sponsor: Aluminum Committee

Topic: Manufacturing with Recycled Materials

Scope: Recycling and reprocessing of materials at the traditional end-of-life cycle can ideally result in feedstocks which can be used to manufacture the same product. This special topic addresses new material innovations that are needed to appropriately up-cycle and down-cycle the recovered materials into appropriate technology.

Guest Editors: Mingming Zhang and John Howarter

Sponsor: Recycling and Environmental Technologies Committee

Topic: Nuclear Materials, Oxidation, Supercritical CO₂, and Corrosion Behavior

Scope: This special topic seeks papers covering the effect of an alloy's composition on oxidation and/or corrosion; effect of different environments on materials performance; the presence of stresses under harsh environments; alloy protection using

coatings; and further understanding on alloy oxidation and/or corrosion behavior.

Guest Editor: Kinga Unocic

Sponsor: Chemistry and Physics of Materials Committee

September:

Manuscript Deadline: April 1, 2018

Topic: ICME – 10 Years Later: Success and Challenges

Scope: In 2008, the National Academy of Engineering issued a report titled *Integrated Computational Materials Engineering: A Transformational Discipline for Improved Competitiveness and National Security*. 2018 is the ten year anniversary of this major milestone in the discipline of ICME. This special topic in *JOM* includes how the 2008 ICME report has affected the materials science and engineering community over the last ten years and what is anticipated for the future.

Guest Editors: Terry Wong and Muralidharan Paramsothy

Sponsor: Materials Characterization Committee

Topic: Additive Manufacturing of Ti Components

Scope: Papers are invited on the application of additively manufactured Ti components to encompass the effect of composition and processing of microstructures; alloy design; mechanical properties; computation and simulation.

Guest Editor: Peter Collins

Sponsor: Titanium Committee

Topic: 3D Nanoscale Characterization of Metals, Minerals, and Materials

Scope: This special topic invites papers demonstrating recent progress in utilizing atom probe tomography (APT) along with correlative microscopy where the 3D nanoscale compositional information obtained using APT complements other structural or chemical state characterization or simulation results that aid in understanding phase transformation mechanisms or structure–property relationships in materials.

Guest Editors: Philip Eisenlohr and Arun Devaraj

Sponsor: Advanced Characterization, Testing, and Simulation Committee

Topic: Integrated Computational Materials Engineering of Magnesium (ICME of Mg)

Scope: Alloy and process design are significantly complicated, relative to Al- and Ni-based alloys for which ICME has been most successfully employed, because Mg-based alloys possess a hexagonal crystal structure. Modeling and experimental tools required to perform ICME of Mg have significantly advanced over the past few years. This special topic provides a compact review of those recent advances.

Guest Editors: Sean Agnew and Victoria Miller

Sponsor: Magnesium Committee

October:

Manuscript Deadline: May 1, 2018

Topic: Characterization of Green Materials

Scope: Green materials with increasing technological applications in automobile, construction, and medical sectors are made of natural organic products such as lignocellulosic fibers. In particular, renewable, biodegradable, and environmentally friendly green composites are replacing conventional glass fiber composites with both cost and properties advantages.

Guest Editor: Mingming Zhang

Sponsor: Materials Characterization Committee

Topic: Solution Purification Technology

Scope: The effluent/solution management of waste in the extractive metallurgical industry is becoming crucial as the world demand for metals increases with the growing market and demand for clean energy technologies. Papers are invited on topics including, but not limited to, effluent/solution treatment processing related to mining, metal extraction and recycling, secondary recovery, nuclear waste, and water treatment.

Guest Editors: Takanaro Ouchi and Sheikh Abdul Rezan

Sponsor: Hydrometallurgy and Electrometallurgy Committee

Topic: Multiphase Flows in Materials Processing

Scope: Materials processing involves complex transport phenomena involving transient, turbulent, non-isothermal and multiphase flows, and the ability to model these flows has greatly enhanced our understanding of different processing operations. Today with increasing computational power and decreasing computational costs, researchers have pushed the boundaries and attempted to model various coupled multiphysics.

Guest Editor: Kinnor Chattopadhyay

Sponsor: Process Technology and Modeling Committee

Topic: Nanoporous and Nanoarchitected Materials

Scope: Nanoporous and nanoarchitected materials are attractive nanomaterials, offering large surface areas and extremely light weights. This topic will cover advancement in synthesis, characterization, and modeling of nanoporous and nanoarchitected materials.

Guest Editors: Niaz Abdolrahim and Thomas Balk

Sponsor: Chemistry and Physics of Materials Committee

November:

Manuscript Deadline: June 1, 2018

Topic: Refractory Materials for Metallurgical Uses

Scope: The scope of this topic includes design, synthesis, processing, and characterization of traditional or advanced refractory materials for different extractive metallurgical uses. Contributions to industrial applications of these materials with a focus on their working conditions, damage mechanism, and corrosion prevention will be particularly welcome.

Guest Editor: Jesse White

Sponsors: Pyrometallurgy Committee

Topic: Advances in Superalloys and Other High-Temperature Alloys

Scope: This topic seeks new technical information and critical reviews on the technology of high-temperature alloys. Areas of interest may include (but are not limited to): alloy development, advanced processing, long-term durability and stability, environmental damage, advancement in testing capabilities, and joining technologies.

Guest Editor: Kevin Bockenstedt

Sponsor: High Temperature Alloys Committee

Topic: Advancement in Solid Oxide Fuel Cell Research

Scope: Papers are invited on advancements in SOFCs from research to product development. Areas that are relevant include but are not limited to low/ IT metal support; metals under dual atmosphere; HX alloys; coatings and degradation; metals/ alloys for hydrocarbon processing – carbon/ metal dusting; failure prediction / sensing; durability and reliability of fuel cell stack; cermet (anode) stability; and electrolyte – electrode interface stability.

Guest Editor: Amit Pandey

Sponsor: Energy Conversion and Storage Committee

Topic: Recent Advances in Design and Development of Refractory Metals and Alloys

Scope: Papers are invited on the latest developments in design and manufacturing of refractory metals and alloys.

Guest Editor: Ravi K. Enneti

Sponsor: Refractory Metals and Materials Committee and Steels Committee

Topic: Surface Engineering for Improved Corrosion or Wear Resistance

Scope: Corrosion and wear are surface phenomena where surface engineering has been used to improve both properties. This special topic focuses on capturing recent advancements in: 1) surface engineering technologies to improve corrosion and/or wear resistance and 2) theoretical understanding of corrosion and/or wear behavior of the surfaces.

Guest Editors: Rajeev K. Gupta, Sandip Harimkar, and Kristen Williams

Sponsor: Surface Engineering Committee