



jmr

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Submission Deadline—February 1, 2018



CALL FOR PAPERS

Interconnect and Interface Materials for High-Temperature Energy Conversion Technologies

One major roadblock to the wide-scale commercialization of state-of-the-art energy materials (e.g., SOFC, high-temperature PV, and high-temperature thermoelectrics) is the great difficulty involved with interfacing these materials with electrical interconnects in a way that results in low parasitic electrical losses and low degradation rates. Many of these materials consist of reactive and sometimes volatile elements from the chalcogen (including oxygen), pnictogen, and halogen groups, which tend to react strongly with metallic interconnect and interface materials that are usually desired for low Ohmic losses at the device level.

This *JMR* Focus Issue will cover advances in the synthesis, processing, and performance of both conventional alloys and unconventional compounds designed for use as electrical interconnects and interfacing materials for these high-temperature energy conversion technologies. Special attention may be given to work relating to experimental and theoretical assessment of the reaction and diffusion kinetics of these interface materials and the volatile, reactive species of energy materials.

Manuscripts are solicited in the following areas:

- ◆ Development and performance of *in-situ*-formed diffusion barriers
- ◆ Modeling of high-temperature interface evolution (kinetics and properties evolution)
- ◆ Reaction kinetics of volatile “p-block” elements with transition metals and alloys
- ◆ Mechanical properties of interconnect-energy material interfaces
- ◆ Interface degradation mechanisms and mitigation
- ◆ Characterization and improvement of electrical and thermal contact/interface resistance

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To be considered for this issue, new and previously unpublished results significant to the development of this field should be presented. The manuscripts must be submitted via the *JMR* electronic submission system by **February 1, 2018**. Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. Please select “Focus issue: *Interconnect and Interface Materials for High-Temperature Energy Conversion Technologies*” as the manuscript type. **Note our manuscript submission minimum length of 6000 words, with a maximum of 6-8 figures. Review articles must be pre-approved by proposal to the Editor-in-Chief. The proposal form and author instructions may be found at www.mrs.org/jmr-instructions.** All manuscripts will be reviewed in a normal but expedited fashion. Papers submitted by the deadline and subsequently accepted will be published in the Focus Issue. Other manuscripts that are acceptable but cannot be included in the issue will be scheduled for publication in a subsequent issue of *JMR*.

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The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-discipline professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing many topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts tutorials, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

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