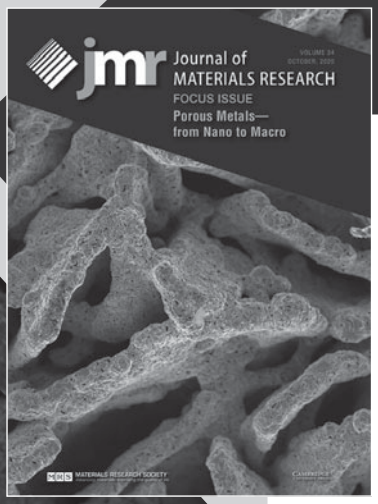
Journal of MATERIALS RESEARCH
FOCUS ISSUE · OCTOBER 2020

Submission Deadline—March 1, 2020



CALL FOR PAPERS

Porous Metals—from Nano to Macro

Porous metals have applications in nearly every field of technology, from energy to the environment and from health and safety to transportation and electronics. Manufacturing processes allow tailoring of the micro-, meso- and macrostructure (architecture) of porous metals, in addition to characteristics such as surface finish, flaw population, residual stresses, and compositional fluctuations. Development and innovation in manufacturing are key factors in enabling porous metallic components that possess the desired porosity features (e.g., pore size, fraction, shape, orientation, and connectivity, as well as their distribution and gradients) tailored to achieve a particular set of properties (e.g., mechanical, physical, processability) and price.

Research on porous, foamed, or hollow metals and alloys has grown significantly in the last decade, especially on three new fronts: (i) *nanoporous metals*, usually created via dealloying methods; (ii) *macroporous metallic scaffolds*, fabricated via additive manufacturing and (iii) ultralight cellular metals (<0.01 g/cm^3) created by electrolytic or electroless deposition on removable templates. Existing areas of research in *microporous metals* (e.g., fabricated by gas entrapment or space-holder replication) also continue to evolve rapidly. This Focus Issue will highlight processing, microstructure, properties, and performance of porous metals and alloys, and welcomes innovative research using modeling and/or experimental approaches.

Contributing papers are solicited in all areas of porous metallic materials and structures, with emphasis on the following areas:

- Development of new production methods, microstructures and architectures
- New alloys for porous structure
- Expanded use of existing alloys

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To be considered for this issue, new and previously unpublished results or review articles significant to the development of this field should be presented. The manuscripts must be submitted via the *JMR* electronic submission system by March 1, 2020. Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. Please select *"Porous Metals-- from Nano to Macro"* as the Focus Issue designation. **Note our manuscript submission minimum length of 3250 words, excluding figures, captions, and references, with at least 6 and no more than 10 figures and tables combined. Review articles may be longer but must be pre-approved by proposal to the Guest Editors via jmr@mrs.org. 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.

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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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Journal of MATERIALS RESEARCH

A publication of the
MRS MATERIALS RESEARCH SOCIETY
Advancing materials. Improving the quality of life.

Periodical Rate Postage Paid at New York, NY
and Additional Mailing Offices

Postmaster—Send change of address notice to:

Cambridge University Press
One Liberty Plaza, 20th Floor,
New York, NY 10006

ISSN: 0884-2914