



ASME Journal of Mechanical Design
Special Issue: Design of Engineered Materials and Structures

The design of engineered materials and structures is a growing and increasingly impactful field of research that intersects materials science, engineering design, engineering mechanics, manufacturing, and data science. The overarching goal is to accelerate the discovery of new materials for engineering applications. The approach complements a traditionally empirical, trial-and-error approach to discovery with an inverse, requirements-driven approach that strategically leverages material databases, simulations and engineering design algorithms and methods to synthesize new materials and structures. Papers are sought that integrate materials modeling, data collection, simulation, and prediction capabilities with engineering design methods, principles, algorithms, and tools to enable the design of new materials and structures. To be appropriate for this special issue in the *Journal of Mechanical Design* (JMD), papers must demonstrate an intellectual emphasis on engineering design.

Representative topics include:

- Simulation-based design methods for enabling accelerated design, development, and insertion of engineering materials
- Integration of theory, simulations, and experiments in the design of materials and structures
- Novel design representation in design of materials and structures
- Multiscale and multiphysics modeling and simulation to support the design of advanced materials and structures
- Data-driven design of materials and structures; data mining and informatics for material and structural design
- Integrated design of products, fabrication processes, and materials
- Topology optimization theory and applications with an emphasis on design of materials and/or integrated design of materials and structures
- Stochastic topology optimization and uncertainty quantification and management for materials and structures
- Manufacturing considerations in design, including in topology, size, and shape optimization
- Rigorous multiscale design, including multiscale topology optimization of materials and structures
- Geometric modeling for design of materials and structures
- Novel materials and structures by design, and their applications

Submission Instructions

Please submit your paper to ASME at <http://journaltool.asme.org/Content/index.cfm> and note on the cover page that your paper is intended for the special issue on “Design of Engineered Materials and Structures”. Please also alert the JMD Editor by email (editor@asmejmd.org) that your paper is intended for the special issue. Information about the *Journal of Mechanical Design* can be found at <http://www.asmejmd.org/>. Early submission before the deadline is strongly encouraged.

Publication Target Dates

Authors submit papers by: March 1, 2018
Initial review completed by: April 15, 2018
Publication of special issue by: November 2018

Early submissions are strongly encouraged. Papers submitted by March 1, 2018 will be reviewed in time for inclusion in the special issue. Papers received after that date may still be considered for the special issue, if time and space permit. Papers that are not ready for production in time for inclusion in the special issue may be considered for a regular issue of the journal.

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