Special Issue

Extreme Mechanics in Multiscale Analyses of Materials

Message from the Guest Editors

Metals, composites, ceramics, and biological materials are functional materials found in nature or are synthesized to be used in the design of structural components in order to bear static, dynamic, and thermal loads. In extreme conditions, e.g., because of ballistic impacts, thermal shocks, or excessive loading, materials respond differently to the service loading state. Phenomena such as fracture, dislocation dynamics, and viscoplasticity emerge as a result of these extreme conditions and affect strain and stress fields substantially. A thorough understanding of these phenomena requires multiscale simulation, testing, and analyses. This Special Issue is concerned with investigations of material behavior in extreme loading conditions using multiscale analyses. Scientifically sound and well-organized analytical, computational, and experimental studies are being solicited. Areas such as micromechanics, mesoscale simulation, and bottom-up modeling across many scales, from atomistic simulations to a continuum level, are of interest. We kindly invite you to submit a manuscript for this Special Issue.

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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