Special Issue

Computational Fracture and Damage Modeling of Engineered Materials

Message from the Guest Editors

The current understanding of damage initiation and growth in materials, especially engineered materials, is incomplete due to the complexity of the damage processes caused by the underlying material inhomogeneity. Moreover, the technical capabilities of current numerical techniques to model such damage initiation and growth are not sufficiently robust to model the complete evolution of damage processes. This has fueled research on novel discretization techniques. This Special Issue aims to attract contributions from practicing engineers, mathematicians, and computational mechanics, among others, on computational approaches to model fracture and damage in engineered materials, such as composites and functionally graded materials subjected to quasi-static and dynamic loading conditions, as well as both mechanical and multi-physics damage modeling. The topics of interest include but are not limited to enrichment methods, mesh-free methods, phase field models, computational homogenization and reduced order models, spatiotemporal techniques to model multiphysics processes, regularized models, and stability analyses.

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Deadline for manuscript submissions

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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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