Special Issue

Finite Element Modeling of Microstructures in Composite Materials

Message from the Guest Editor

Composite microstructures, including both composition and geometry, play a crucial role in the regulation of composite macroscopic properties. Fully understanding the relationship between composite microstructure and macroscopic properties is the fundamental base for the effective design of novel composites. Although finite element modeling is believed to be a more efficient approach than analytical and experimental methods for further the understanding of this relationship, it also faces a number of challenges. For this Special Issue, we invite high-quality papers showing recent progress in addressing these challenges. Topics of interest include, but are not limited to:

- Finite element models of composite microstructure validated by experiments;
- Analytical formulas established from finite element modeling;
- Design and analysis of functionally graded materials;
- Multiscale modeling of composite microstructure;
- Relation between composite nonlinear behavior and microstructural local damage;
- Finite element modeling of 3D-printed composites.

All submissions will undergo a rigorous peer-reviewing process.

Guest Editor

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Deadline for manuscript submissions

closed (10 March 2024)

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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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