Special Issue

Mechanical Metamaterials: Optimization and New Design Ideas

Message from the Guest Editors

Mechanical metamaterials are artificial structures that have properties contrary to conventional mechanical properties, realized mainly by carefully constructing the geometric structure of the microstructure units rather than their material composition. Although mechanical metamaterials have been extensively studied in recent years, the potential of their performances has not been fully reached, mostly due to the limitation of design techniques. To give full play to their excellent and diverse mechanical properties, novel optimization methods and new design ideas are desired. This Special Issue explores the latest research in structural optimization methods for enhancing the functionalities of mechanical metamaterials, including size, shape, and topology optimization strategies, and new ideas for designing novel mechanical metamaterials with prominent and diverse mechanical properties, e.g., origami/kirigami techniques and artificial intelligence.

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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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