Special Issue

Advances in Mechanical/Acoustic Metamaterials and Vibration/Noise Reduction Properties

Message from the Guest Editors

Mechanical/acoustic metamaterials are created by meticulously building the geometric structure of the microstructure units rather than their material composition. These structures feature unique physical properties compared to traditional structures. Due to their exceptional mechanical qualities and acoustic wave characteristics, they have a lot of promise for use in load bearing, vibration, and noise-reduction applications.

Despite the tremendous progress made in this field, there are some challenges that need to be addressed urgently, including (a) addressing the trade-off between lightweight/excellent mechanical properties and low-frequency vibration/noise reduction; (b) developing novel design/reverse design methods for multifunctional metamaterials; (c) analyzing the low-frequency vibration and noise reduction characteristics from the dynamic mechanism; and (d) proposing new mechanisms for vibration and noise reduction.

This Special Issue explores the latest research in mechanical/acoustic metamaterials and their ability to attenuate vibration and noise, including (but not limited to) the design approach, manufacturing method, and experimental testing.

Guest Editors

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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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