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

Dr. Jie Liu

Dr. Zhenpei Wang

Prof. Dr. Xi Liang

Deadline for manuscript submissions

20 October 2025

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/229183

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

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.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)