Special Issue

Mechanics of Sustainable Engineering Materials: Performance, Degradation and Applications

Message from the Guest Editors

Amid growing concerns over material scarcity, energy usage, and environmental impact, there is an increasing demand for materials. This has prompted intensive research into next-generation engineering materials—often based on alternative raw materials or byproduct streams—whose mechanical behavior and durability are enhanced through microstructural design and architectural optimization. Rather than compromising serviceability, such innovations aim to ensure structural integrity and mechanical reliability under complex working conditions involving wear, cyclic loading, thermal gradients, and chemical exposure. These approaches are being actively explored and implemented in various sectors such as aerospace, semiconductor, civil infrastructure, transportation, mining, and energy systems. This Special Issue focuses on the mechanical behavior, degradation mechanisms, and failure analysis of sustainable engineering materials and structures. We welcome contributions involving experimental research, theoretical modeling, numerical simulation, multiscale characterization, and service life prediction.

Guest Editors

Prof. Dr. Xu Long

Dr. Xindang He

Dr. Tang Gu

Deadline for manuscript submissions

20 June 2026

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/248367

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

mdpi.com/journal/materials

MDPI

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

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)