Special Issue

Alloy Strengthening Mechanisms, Microstructure Control and Performance Optimization (Second Edition)

Message from the Guest Editors

Metals and alloys are pivotal to technological advancements in various engineering sectors. Material properties such as density, strength, electrical and thermal conductivity, tensile performance, ductility, high-temperature properties, and corrosion resistance primarily depend on the regulation of alloy composition and precise control of microstructures, as well as material fabrication and processing methods, among other factors.

This second edition focuses on, but is not limited to, exploring the intrinsic mechanisms of alloy strengthening, the underlying mechanisms involved in material fabrication and processing, and the control of microstructures and properties. We aim to compile cutting-edge research and comprehensive reviews on the latest developments in the design, fabrication, forming, processing, characterization, and application of alloys and metal matrix composites. We warmly invite submissions that extend the boundaries of traditional material fabrication and processing techniques and provide novel insights into alloy strengthening mechanisms, microstructure control, and performance optimization.

Guest Editors

Dr. Hongling Zhou

College of Materials Science and Engineering, Chongqing University, Chongqing, China

Prof. Dr. Keqin Feng

School of Mechanical Engineering, Sichuan University, Chengdu 610065, China

Deadline for manuscript submissions

closed (20 April 2026)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/255837

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

About the Journal

Message from the Editorial Board

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.

Editors-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

Prof. Dr. Yuguang Ma
State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

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)

MDPI