Special Issue

Programmable Metallic Metamaterials: Innovations in Sustainable Design and Smart Architectures

Message from the Guest Editor

The emergence of programmable metallic metamaterials is redefining the landscape of advanced materials, structural mechanics, and sustainable design. Unlike conventional materials, these engineered architectures derive their extraordinary properties from precisely controlled geometries and compositions, enabling unprecedented tunability in stiffness, energy dissipation, negative Poisson's ratio, and self-regulating behavior. Recent advancements in additive manufacturing, computational design, and machine learning-driven optimization have expanded the scope of mechanical metamaterials, incorporating metallic structures and alloys that offer enhanced strength, durability, and multifunctionality. We invite contributions on, but not limited to, the following topics:

- Architected and responsive metallic metamaterials;
- Multi-stability, snap-through instabilities, and self-regulating structures;
- Bio-inspired, soft, and shape-memory metallic metamaterials;
- Sustainable, recyclable, and energy-efficient metamaterials;
- Computational design, topology optimization, and AI-driven metamaterial discovery.

Guest Editor

Dr. Behnam Sobhaniaragh
School of Computing, Engineering and Digital Technologies, Teesside University, Tees Valley, Middlesbrough TS1 3BX, UK

Deadline for manuscript submissions

closed (31 October 2025)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.7

mdpi.com/si/231399

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

mdpi.com/journal/metals

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.7

mdpi.com/journal/metals

About the Journal

Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Metals and Alloys)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.7 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the second half of 2025).

MDPI