Special Issue

Design and Mechanical Behavior of Martensitic Alloys

Message from the Guest Editor

Martensitic phases give rise to unique behaviors including but not limited to shape memory, superelasticity, transformation-induced plasticity, and tailorable thermal expansion. Application-directed engineering of martensitic alloys can be achieved via alloying, microstructure design, thermomechanical processing, cycling in external fields, etc. This Special Issue is devoted to the status and recent advancements in the science and technology of alloys for whose function a martensitic phase or a martensitic transformation is of central importance. Of specific interest are the development and use of i) novel synthesis methods including additive manufacturing; ii) advanced characterization techniques revealing the material response on different length and possibly time scales; iii) advanced computational tools including machine learning and artificial intelligence; iv) novel approaches in continuum mechanics, micro mechanics, and thermodynamics. Original research contributions and reviews discussing recent advances and emerging trends in the science, engineering, and technology of martensite-forming alloys are equally welcome for submission to this Special Issue.

Guest Editor

Dr. Matthias Bönisch
Department of Materials Engineering, KU Leuven, Kasteelpark Arenberg 44 - box 2450, 3001 Leuven, Belgium

Deadline for manuscript submissions

closed (31 July 2023)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/90473

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 5.3

mdpi.com/journal/metals

About the Journal

Message from the Editorial Board

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.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez
Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

MDPI