Special Issue

Thermomechanical Treatment of Metals and Alloys—Second Edition

Message from the Guest Editor

Thermomechanical treatments are among the most effective methods for modifying the grain structure, structural phase states, and defect substructure determining the mechanical properties of metals and alloys. The development of new alloys and the use of new processing types open up prospects for achieving a unique combination of strength, plasticity, and functional properties in metallic materials. Despite the numerous studies along this line, the role of thermomechanical treatments in ensuring the required level of mechanical properties, the issues of the strengthening mechanisms, and the possibility of increasing strength via new grain-boundary and structural-phase designs are still relevant.

This Special Issue addresses the effect of various thermomechanical treatments on the structural phase states, deformed microstructure, and mechanical properties of metallic materials, including pure metals, steels, and alloys. Articles considering the role of strengthening mechanisms (solid solution, grain boundary, substructural, dispersion, etc.) in ensuring the mechanical properties of metals and alloys under any thermomechanical treatments are highly welcome.

Guest Editor

Dr. Igor Yu. Litovchenko

Institute of Strength Physics and Materials Science of the Siberian Branch of the Russian Academy of Sciences, 634055 Tomsk, Russia

Deadline for manuscript submissions

closed (30 April 2024)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/179084

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 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 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