

## Special Issue

# Phase Transformations and Grain Boundaries of Metals and Alloys

### Message from the Guest Editor

The direct microstructure–properties relationship in metallic materials is now well established—in other words, a “good” microstructure consisting of “good” phases results in “good” properties. Together with chemical composition, grain size, size, morphology, and distribution of second phase precipitates, grain boundaries (GBs) represent a unique and intrinsic parameter which can be used to control the properties of metallic polycrystalline materials. Due to the global tendency toward miniaturization (in nanoelectronics, for example) and intensive research on nanograined metals, GBs have manifested a multitude of features to act on properties, as they are preferential nucleation sites, part of matter with different composition and significantly increased rate of diffusion and, more recently, with specific phase transitions, as compared to the bulk. The objective of the present Special Issue is to present recent achievements in the investigation of interaction between phase transformations and grain boundaries in metallic alloys. Experimental and theoretical (and/or modeling) aspects are both covered.

---

### Guest Editor

Dr. Vladimir A. Esin

Centre des Matériaux, MINES ParisTech, PSL University, Paris, France

---

### Deadline for manuscript submissions

closed (30 June 2022)



## Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/92625](https://mdpi.com/si/92625)

*Metals*

Editorial Office

MDPI, Grosspeteranlage 5

4052 Basel, Switzerland

Tel: +41 61 683 77 34

[metals@mdpi.com](mailto:metals@mdpi.com)

[mdpi.com/journal/](https://mdpi.com/journal/)

[metals](https://mdpi.com/journal/metals)





# Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/journal/  
metals](https://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).