

Special Issue

Advances in Nanocrystalline Soft Magnetic Materials for Smart Applications

Message from the Guest Editor

Nanocrystalline Soft Magnetic Materials (NSMMs) are a class of materials characterized by their small grain sizes and excellent magnetic properties, making them ideal for various applications in electronics and power systems. NSMMs often consist of alloys like Fe-Si-B, Fe-Ni, Fe-Co, and other transition metals combined with elements like Nb or Cu to stabilize the nanocrystalline structure. Typically, the grain size in nanocrystalline materials is below 100 nm. This fine grain structure significantly affects their magnetic properties. These materials are usually produced by rapidly cooling a molten alloy to form an amorphous structure, which is then partially crystallized through controlled annealing to form the nanocrystalline phase. The ongoing advancements in nanocrystalline soft magnetic materials continue to push the boundaries of their applications, offering new opportunities for innovation in various industries.

Guest Editor

Dr. Gabriel Ababei

Department of Magnetic Devices and Materials, National Institute of Research and Development for Technical Physics, 700050 Iași, Romania

Deadline for manuscript submissions

closed (20 July 2025)



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/210731

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

[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 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, CAPus / 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).