Special Issue

Magnetic Properties Analysis of Amorphous and Partially Crystallized Alloys

Message from the Guest Editor

Amorphous magnetic materials have long-range, disordered atomic structures, being described as either ferromagnetic, loose ferromagnetic, ferromagnetic or loose ferromagnetic. As an energy-efficient and environment friendly technique, the magnetic refrigeration technique, based on the magneto-caloric effect (MCE) of the materials, is regarded as a promising alternative to conventional vapor-circle refrigeration technology. Materials which undergo a first-order magnetic transition, including most of the crystalline variety, exhibit a sharp but narrow magnetic entropy change peak (-ΔSmpeak). In contrast, materials which undergo a second-order magnetic transition, including amorphous alloys and a small amount of crystalline alloys, show a broadened but low magnetic entropy change peak and this results in high RC. Amongst the the key challenges in the field of magnetic refrigerants is in obtaining a combination of the high table-like magnetic entropy change and movements across the ice point of water within different temperature ranges. Research areas may include, but should not be limited to, the issue of magnetic refrigeration materials.

Guest Editor

Dr. Ding Ding
Institute of Materials, Shanghai University, Shanghai 200072, China

Deadline for manuscript submissions

31 August 2025

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/159430

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