

Special Issue

Hydrogen Storage Alloys: State of the Art

Message from the Guest Editors

The global impact of climate change has driven the pursuit of clean energy sources to enable an affordable and equitable energy transition. Hydrogen is a promising candidate; however, a major challenge remains: developing safe, practical, and cost-effective methods for storing hydrogen gas. Solid-state storage is considered a highly viable solution, and many materials are under investigation to meet international energy agency standards. Among them, metallic alloys have shown significant potential for hydrogen storage. Nonetheless, issues related to thermodynamics, kinetics, capacity, activation, and reversibility of the absorption/desorption process remain and demand further research. As a result, global interest and scientific efforts in this field have surged in recent decades.

This Special Issue focuses on recent advances in hydrogen storage alloys. Topics of interest include, but are not limited to, simulation, synthesis, fabrication, structure, properties, performance, and technological applications. Both original research and review articles are welcome.

Guest Editors

Prof. Dr. Félix Echeverría

Centro de Investigación, Innovación y Desarrollo de Materiales
CIDEMAT, Facultad de Ingeniería, Universidad de Antioquia UdeA, Calle
70 No. 52-21, Medellín 050010, Colombia

Prof. Dr. Esteban Correa Bedoya

Grupo de Investigación Materiales con Impacto—MAT&MPAC, Facultad
de Ingenierías, Universidad de Medellín, Carrera 87 No 30-65, Medellín
050026, Colombia

Deadline for manuscript submissions

31 March 2026



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/249605

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 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).