Special Issue

Corrosion and Sustainability: Challenges, Innovations and Future Perspectives in Green Energy

Message from the Guest Editor

Metals and alloys play a crucial role in renewable energy systems, hydrogen infrastructure, carbon capture technologies, and material recycling, but their long-term durability is often compromised by complex corrosion mechanisms. Understanding and mitigating corrosion in these environments is essential to improve efficiency, reduce environmental impact, and ensure the longevity of critical infrastructure.

This Special Issue aims to collate the latest research on corrosion-related challenges and solutions in sustainable technologies. Topics of interest include, but are not limited to, the following:

Hydrogen embrittlement and corrosion in hydrogen production, storage, and transport;

- Eco-friendly corrosion inhibitors and sustainable protective coatings;
- Corrosion of materials in carbon capture, utilization, and storage technologies;
- Corrosion challenges in emerging energy technologies from lithium batteries to hydrogen infrastructure;
- The impact of corrosion on recycled metals and circular economy strategies.

We invite researchers from academia and industry to contribute.

Guest Editor

Dr. Davood Nakhaie

Department of Materials Engineering, The University of British Columbia, Vancouver, BC V6T 1Z4, Canada

Deadline for manuscript submissions

30 September 2025

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/230310

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