

Special Issue

Research on the Performance of Metal Composite Electrodes

Message from the Guest Editors

This Special Issue aims to collect original research and review papers addressing the design, processing, characterization, modelling, and application of **metal** composite electrodes for demanding plasma, arc, and high-power electrical environments. Relevant material systems include Cu-, W-, Mo-, Ag-, refractory-**metal**-, oxide-, carbide-, and dispersion-strengthened composites, as well as functionally graded, infiltrated, coated, and self-protective electrode concepts. Topics of interest include, but are not limited to, composite electrode fabrication, microstructure–property relationships, arc erosion and degradation mechanisms, oxide-layer formation, cathode and anode behaviour, thermal fatigue, oxidation and evaporation resistance, lifetime testing, numerical modelling of electrode–plasma interaction, and performance evaluation under realistic operating conditions. The Special Issue particularly encourages studies (but not limited) to

- material design,
- processing route,
- microstructural stability,
- functional electrode performance in advanced plasma, arc, aerospace,
- other non-electrochemical high-power systems.

Guest Editors

Dr. Marek Gebura

Institute of Materials and Machine Mechanics, Slovak Academy of Sciences, 845 13 Bratislava, Slovakia

Dr. Tomáš Dvůrák

Institute of Materials and Machine Mechanics, Slovak Academy of Sciences, 845 13 Bratislava, Slovakia

Deadline for manuscript submissions

31 January 2027



Metals

an Open Access Journal
by MDPI

Impact Factor 3.1
CiteScore 5.7



mdpi.com/si/283513

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 3.1
CiteScore 5.7



[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 15.3 days after
submission; acceptance to publication is undertaken in 2.9
days (median values for papers published in this journal in
the first half of 2026).