Special Issue

Mechanical and Functional Properties of Refractory Metal-Ceramic Composites Used in Advanced High-Temperature Applications

Message from the Guest Editors

Advanced refractory materials based on functionalised metal–ceramic composites can help to fulfil the demand for smart refractory installations with increased lifetimes. In addition, the material design must satisfy circular economy needs.

In all cases, composites must withstand harsh environments in their application such as corrosion, thermal shock, thermal stresses and mechanical loads. This Special Issue encourages authors to contribute works on topics:

- Design and production of metal–ceramic composites used at temperatures above 1000 °C;
- Functional properties, e.g., electrical and thermal conductivity, porosity, etc.;
- Mechanical properties, e.g., characterisation of thermal shock behaviour, strength at RT and high temperature, etc.;
- Oxidation or corrosion resistance of functional materials and/or composites.

Studies on any high-temperature material class, including classical ceramic refractories, refractory metal composites, and carbides are welcome for submission.

Guest Editors

Dr. Tilo Zienert

Institute of Ceramics, Refractories and Composite Materials,Technische Universität Bergakademie Freiberg, 09599 Freiberg, Germany

Prof. Dr. Christos G. Aneziris

Institute of Ceramics, Refractories and Composite Materials,Technische Universität Bergakademie Freiberg, 09599 Freiberg, Germany

Deadline for manuscript submissions

closed (10 February 2025)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/188827

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