

Special Issue

Zirconium Alloys

Message from the Guest Editor

Zirconium alloys are used as the primary structural components in the nuclear power industry, because of their low thermal neutron absorption cross section, high corrosion resistance, good ductility, and satisfactory strength. In general, several interconnected problems are given special attention: (1) Corrosion. Corrosion of zirconium alloys is one of the main factors in the degradation of zirconium alloys during service. (2) Coating. The coating can provide a protective layer for the zirconium alloy that can reduce oxidation and hydrogen pick-up. (3) Irradiation-induced damage. Neutron irradiation can affect microstructural evolution, and the mechanical and corrosion properties of zirconium alloys. A new generation of reactors will offer higher fuel burn-up, higher efficiency and excellent safety of operation. The performance and high efficiency of these advanced reactors are linked to more severe service environments. New zirconium alloys with improved resistance to the environment of high temperature, high pressure, high corrosion and high radiation field are necessary.

Guest Editor

Dr. Wen Qin

Department of Mechanical Engineering, University of Saskatchewan,
Saskatoon, Canada

Deadline for manuscript submissions

closed (30 April 2018)



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/8355

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 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, 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 18.7 days after
submission; acceptance to publication is undertaken in 2.7
days (median values for papers published in this journal in
the second half of 2025).