# **Special Issue**

# Performance and Behaviour of Metallic Nuclear Fuels and Cladding Materials

## Message from the Guest Editor

Metals, alloys and intermetallics are of high interest to the nuclear industry due to their extensive use in nuclear fuel assemblies. The development of novel metallic nuclear fuels, fuel claddings and coating materials is driving the deployment of accident tolerant fuel (ATF) technology into the current generation of nuclear power plants. In addition, new high-density metallic fuels (HDFs) offer the possibility of replacing highly enriched uranium fuel (HEU), which is currently used in test reactors, with lower-enriched fuels with the aim of reducing proliferation risks. However, through their deployment, these novel metallic fuels, cladding and coating materials may be exposed to high levels of radiation damage and burnup, high temperature environments and oxidative or corrosive atmospheres. This can occur during normal operation or in off-normal accident scenarios, particularly in water-cooled nuclear reactors.

## **Guest Editor**

Dr. Robert W. Harrison

Nuclear Fuels Centre of Excellence, Department of Mechanical, Aerospace and Civil Engineering, University of Manchester, Oxford Road, Manchester M13 9PL, UK

#### Deadline for manuscript submissions

closed (31 August 2022)



## Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/103695

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



## **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 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).

