Special Issue

Characterization, Analysis, and Defects in Metallic Materials and Their Welds

Message from the Guest Editor

There are a wide range of engineering alloys specifically designed for demanding service conditions such as elevated temperatures or corrosive environments depending on applications (e.g., automotive, power generation, aerospace, and oil and gas). It is critical to fundamentally understand the metallurgical stability, mechanical performance, and degradation and failure mechanisms in both base metals and their welds under manufacturing and service conditions for proper materials/fillers selection, life assessment and optimization. This Special Issue invites contributions from both academia and industry to disseminate the recent development trends in characterization, modeling and analysis of microstructures, thermomechanical properties (e.g., thermal fatigue and creep), defect evolution (e.g., stress corrosion cracking and stress relaxation cracking) as well as lifetime prediction methods for engineering alloys (both ferrous and non-ferrous) and their weldments under demanding service conditions.

Guest Editor

Dr. Zhenzhen Yu

Department of Metallurgical and Mateirals Engineering, Colorado School fo Mines, Golden, CO 80227, USA

Deadline for manuscript submissions

closed (30 November 2024)



Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/179872

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).

