Special Issue

Advances in Corrosion and Fatigue Behavior of High-Performance Steel

Message from the Guest Editors

High-performance steel is widely used in engineering structures. Under the coupling effect of corrosive environment and load, some key structural members or connections are prone to fatigue failure. The damage mechanism of materials under the coupling action of corrosion and fatigue is complex. Several challenges still exist in corrosion fatigue evolution of materials. Moreover, it is still not clarified for the initiation and propagation of fatigue crack in the steel under corrosive condition and complex stress. Multi-scale simulation of structural degradation caused by material damage accumulation needs to be further investigated. This special issue aims to collate research and review articles reported on the advances in the performance evolution of high-performance steel under the influence of corrosive environment and complex load, involving experimental study, numerical simulation of corrosion, corrosion protection, and fatigue modeling.

Guest Editors

Prof. Dr. Yafei Ma

School of Civil Engineering, Changsha University of Science and Technology, Changsha 410114, China

Dr. Wenjun Zhu

School of Transportation, Tongji University, Shanghai 201804, China

Deadline for manuscript submissions

closed (30 June 2022)



Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/102195

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).

