

Special Issue

Advances in Microbiological Corrosion of Metals, Alloys, and Metallic Compounds

Message from the Guest Editors

Microbiological corrosion (MIC) induces severe degradation of steel and alloys in marine, industrial, and infrastructure contexts, leading to substantial economic losses and latent safety hazards. This Special Issue aims to provide theoretical guidance for anti-MIC engineering practices and resolve pivotal challenges in enhancing material durability. In this Special Issue, original research articles and reviews are welcome. Research areas may include, but are not limited to:

- Spatiotemporal dynamics of microbial communities and their functional mechanisms in steel/alloy corrosion systems;
- High-resolution in situ detection and real-time monitoring technologies for MIC processes;
- Design, preparation, and anti-MIC performance evaluation of functional materials and surface engineering technologies;
- Eco-friendly microbial inhibition strategies and environmental factor regulation for MIC mitigation, toxicity of different inhibition strategies, and guiding the development of sustainable MIC control technologies;
- Multi-scale modeling and numerical simulation of MIC behavior in steel/alloy systems.

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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

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