Special Issue

Advances in Corrosion and Protection of Materials (Third Edition)

Message from the Guest Editor

Corrosion significantly impacts various industries, influencing costs and material performance. As technological advancements progress, understanding corrosion mechanisms and protection methods becomes essential. The design of new materials and manufacturing methods must account for corrosion resistance, especially the correlation between chemical composition, processing parameters, metallurgical aspects, and surface characteristics. Recent research has focused on areas such as multiprinciple metallic alloys, additively manufactured alloys, friction stir-welded materials, localized corrosion studied by scanning probe techniques, biomedical alloys, and new protective coatings. This Special Issue aims to present the latest research on material corrosion and protection, focusing on novel alloys, corrosion mechanisms, surface chemistry-corrosion correlations, advanced manufacturing methods (additive manufacturing, friction stir welding), metallurgical influences (heat treatments, microstructure, grain size, phases), scanning probe techniques for localized corrosion, and protective coatings and surface treatments. We invite both research articles and reviews.

Guest Editor

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Deadline for manuscript submissions

31 December 2025

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/222041

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About the Journal

Message from the Editorial Board

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.

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