Special Issue

Marine Environmental Corrosion and Protection of Metals

Message from the Guest Editor

Metals and alloys used in marine environments face significant challenges due to corrosion caused by the seawater, humidity, temperature variations, and biological activity found in these harsh environments. The presence of chloride ions in seawater accelerates corrosion, leading to material degradation, structural failures, and substantial maintenance costs. This Special Issue aims to explore recent advancements in our understanding of corrosion in order to prevent and mitigate marine corrosion in metals. It will cover the fundamental mechanisms of marine corrosion, including uniform corrosion, pitting corrosion, crevice corrosion, galvanic corrosion, and microbiologically influenced corrosion (MIC). Additionally, this Special Issue will highlight innovative corrosion protection techniques such as advanced coatings, cathodic protection, corrosion inhibitors, and the design of corrosion-resistant alloys. The development of eco-friendly and sustainable corrosion inhibitors is of particular interest, given the growing need for environmentally responsible solutions. We look forward to your valuable contributions to this Special Issue.

Guest Editor

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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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