Special Issue

Recent Advances in Corrosion Inhibition of Metals and Alloys

Message from the Guest Editor

Corrosion can be defined as the chemical degradation of a material and the alteration in its physical properties, especially mechanical properties, under the influence of its surrounding environment. Corrosion protection strategies include material selection, surface treatments (e.g., coatings, painting) and the use of corrosion inhibitors to modify environmental conditions. Research in the inhibition of the corrosion of metals and alloys has seen significant advancements in recent years, driven by the need for more effective and environmentally friendly methods to protect infrastructure, machinery and other metallic components.

In this Special Issue, we invite articles focused on corrosion protection methods for metals and alloys, including steel, iron, zinc and copper, in acidic or alkaline environments. Articles discussing the aforementioned protective methods, such as employing green inhibitors, utilizing nanotechnology, developing smart coatings, implementing surface modification techniques, employing environmentally controlled inhibition and exploring inhibitor synergies, are highly encouraged as they offer promising avenues for research in this field.

Guest Editor

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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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