Special Issue

Research on Electrochemical Corrosion of Metals and Alloys

Message from the Guest Editors

Corrosion is an electrochemical process involving the exchange of electrons. Hence, understanding the underlying electrochemical phenomena is fundamental to elucidating the mechanism of corrosion. Complex processes that occur in pitting and crevice corrosion as well as in different forms of mechanically assisted corrosion (e.g., stress corrosion cracking, hydrogen embrittlement, and wear-induced corrosion) can be discussed by electrochemical principles and methods. This Special Issue provides a forum for discussing (a) the advancements in understanding the localized electrochemical corrosion of corrosion-resistant alloys, (b) the mechanically assisted corrosion of corrosion-resistant alloys, and (c) hydrogen and sulfide stress cracking of high-strength low-alloy steels. Manuscript submissions that include critical discussions, novel experimental findings, localized corrosion mechanisms of exotic corrosion-resistant alloys, and environmentally assisted cracking in H2S-containing conditions are welcome.

Guest Editors

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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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