Special Issue

Corrosion and Surface Treatment of Metallic Aviation Materials in Marine and Low-Altitude Environments

Message from the Guest Editor

Corrosion in marine and low-altitude environments poses a significant challenge in enhancing the reliability and service life of aerospace materials. To address this issue, the high-quality surface modification of aerospace equipment and the meticulous design of its internal microstructure are imperative. This involves employing corrosion-resistant materials, adding inhibitors, metal surface modifications, protective coatings, electrochemical protection, alloy design, and microstructural control, among other methods. In this Special Issue, we focus on introducing corrosion prevention mechanisms to aerospace materials, as well as on the prospects and development trends of their surface treatment technologies, supported by advanced surface modification techniques, service life assessment, corrosion simulation, electrochemistry, and high-resolution microstructural characterization methods.

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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