Special Issue

Corrosion Behavior of Lightweight Metals

Message from the Guest Editor

Lightweight metals—such as aluminum, magnesium, and titanium alloys—are indispensable in modern industries due to their high strength-to-weight ratios and sustainability potential. However, their corrosion susceptibility in aggressive environments (e.g., marine, high-temperature, or biocorrosive conditions) remains a critical challenge, directly impacting structural integrity, service life, and economic viability. Understanding and mitigating corrosion in these materials are essential for advancing aerospace, automotive, energy, and biomedical technologies. This Special Issue seeks to highlight innovative research and reviews on the corrosion behavior of lightweight metals. We invite contributions that address the unique corrosion challenges of light alloys and explore strategies to enhance their performance in demanding environments. We welcome original research articles, comprehensive reviews, and communications.

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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