Special Issue

Surface Modification and Characterization of Metals and Alloys

Message from the Guest Editor

Metals and alloys often fail due to wear, fracture, and corrosion, which typically start at the surface. To enhance properties like strength, hardness, rigidity, wear and corrosion resistance, surface modification and strengthening technologies are commonly used. These methods improve material properties and enable surface functionalization. By applying coatings or creating structures with special properties like superhydrophobicity or superhydrophilicity, surface modification can solve practical engineering challenges, expanding material applications and improving performance in specific environments. This Special Issue, "Surface Modification and Characterization of Metals and Alloys," aims to compile research and reviews on recent advancements in the field. Topics include advanced surface modification technologies (coatings, laser treatments, shot peening, spraying, nanocrystallization, alloying, functionalization, heat treatment) and the effects of modified surfaces on properties like hardness, wear resistance, corrosion, and multifunctionality for environmental, energy, and medical applications. We welcome original research and review papers.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

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