Special Issue

Titanium Alloys: Processing, Properties and Applications

Message from the Guest Editors

Titanium and its alloys are vital in high-performance industries due to their excellent specific strength, biocompatibility, and corrosion resistance. These properties make them ideal for aerospace, biomedical, defence, and chemical applications where performance in extreme conditions is critical. With evolving technological needs, the development of advanced titanium alloys is increasingly important. Realizing their full potential requires precise control of composition, microstructure, and mechanical properties. However, processing is challenging due to titanium's high reactivity, especially with oxygen. Current research focuses on improving production efficiency and expanding applications in emerging technologies. This Special Issue highlights recent advances in titanium alloys, including new processing techniques, enhanced properties, and broader applications. Topics of interest include innovative manufacturing, alloy design, mechanical performance, and environmental response. The contributions will emphasize titanium's continued significance in engineering and future technologies.

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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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