

Special Issue

Microstructure and Mechanical Properties of Ti-Based Alloys

Message from the Guest Editor

Titanium and titanium alloys play a crucial role in modern industry. The multifunctionality of Ti-based alloys stems from a combination of their physical, chemical, and mechanical properties and the possibility to control them. Alloy design and heat treatment are responsible for producing a wide variety of Ti-based alloys: from low modulus materials to lightweight high-temperature and corrosion-resistant alloys for essential components. Searching for new approaches in alloy design and treatment methods to improve the properties of titanium alloys are issues of critical importance for the development of new superior apparatuses and parts. Although Ti-based alloys have been known and used for a long time, there are still many questions concerning structural and phase transformations in titanium alloys. Answering these questions is extremely important to control the properties of titanium alloys and choose the appropriate methods for their production. We welcome reviews and articles in the areas of alloy design, heat treatment, manufacturing, and welding methods of Ti-based alloys and parts, which provide their characterization with regard to the structure-properties relation.

Guest Editor

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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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