Special Issue

Design, Phase Transformation and Mechanical Properties of Titanium Alloy

Message from the Guest Editor

Titanium alloys are promising structural and functional materials in aerospace and civil applications. As Ti alloys act as both low-weight metallic material and smart material with shape memory properties and low elastic modulus, the research and development of both available and new Ti alloys are vital for the Ti society. This Special Issue explores the design, phase transformation, microstructure evolution, deformation behavior, and mechanical properties of Ti alloys in order to shed light on the titanium research. Articles concerning the design, processing, and mechanical properties of Ti alloys, as well as their deformation mechanisms, are welcome. This Special Issue will cover —but is not limited to—the following fundamental and applied research topics:alloy design;thermal-mechanical processing;post-heat treatment;precipitation;microstructure evolution and mechanical properties;deformation behavior and mechanism;shape memory;superelasticity;simulation;additive manufacturing;martensitic transformation;biomedical applications.

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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