Special Issue

Recent Advances in Additive Manufacturing and Fatigue Properties of Titanium Alloys

Message from the Guest Editor

Titanium alloys have been extensively used in a wide range of applications in aerospace, biomedical, chemical, marine, and automotive because of their high strength, low density, and excellent corrosion resistance. The traditional methods used to manufacture titanium alloys are difficult and expensive. Additive manufacturing (AM) offers several advantages. Thus, the AM of titanium alloys has garnered significant attention over the past decade. Moreover, in-depth studies of their deformation and fracture behavior under different external actions are still necessary because of the increasing demand for the optimization of their properties for different applications by varying process parameters and resulting microstructures. For this open access Special Issue, we invite original research articles and review papers focused on (i) the development of titanium alloys for AM; (ii) the relationship between AM process parameters, fatigue and fracture, and its functional properties; (iii) modeling and design for performance optimization.

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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