Special Issue

Multiscale Computational and Experimental Research of Mechanical Properties and Microstructural Characterization of Metallic Materials

Message from the Guest Editors

This Special Issue aims to integrate the latest research results of multiscale computational modeling and experimental methods in the mechanical properties and microstructure characterization of metal materials and provide a multiscale communication platform for researchers to promote academic discussion and scientific progress. In addition, the Special Issue also encourages contributions to research in the fields of advanced manufacturing processes, material defect evolution, interface behavior and high-performance alloy design, with a view to provide new ideas and directions for the development of metal materials science and engineering. This Special Issue pays special attention to the application of multiscale modeling in material design and performance prediction and emphasizes the systematic research from atomic scale to macro engineering application. At the same time, the Special Issue is also committed to promoting the innovation of experimental methods, such as high-resolution electron microscopy and in situ testing technology, in order to achieve a more accurate characterization of the relationship between the microstructure and properties of materials.

Guest Editors

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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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