



Hierarchy Microstructures and Phase Transformations in Metallic Alloys

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Message from the Guest Editors

Dear Colleagues,

This Special Issue is dedicated to presenting the current status and progression of knowledge on multi-scale characterization from the atomic to nanoscale dimensions as well as multiscale modelling of processing-microstructure-property/performance relation of metallic alloys such as steels, high entropy alloys, Ni-base alloys, light alloys. To obtain a further understanding of microstructural evaluation and phase transformation during deformation and thermal cyclic, including 3D printing, fast heating, cooling, solidification etc., a great number of scientific researches have been performed on microstructure characterization and modelling to an efficient materials and heat treatments design and optimization. Significant progress has been achieved in both experiments and modellings to describe the evolution of size, distribution, volume fraction, partitioning of alloying elements in the nucleation, growth, coarsening of phase transformation, especially with the help of Large-Scale Facilities (LSF) and high end of computational tools used for pioneering research in materials science.





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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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