



Microstructural Tailoring of Metals and Alloys

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Message from the Guest Editors

The development of high-performance structural metallic materials is essential in many different industrial areas where materials are submitted to harsh environments. The aim of this Special Issue focuses on the optimization of the microstructure of metals and alloys to achieve the required performance under service conditions, modifying different parameters during fabrication routes, such as the control of the alloy chemistry and processing techniques. This Special Issue will be dedicated to a wide range of contributions, starting with those works based on computational metallurgy to improve and design alloys, followed by those focused on the fabrication routes (casting, powder metallurgy, additive manufacturing, etc.) and post-fabrication processing techniques (thermomechanical processes, heat treatments, combinations thereof, etc.). Finally, papers regarding the characterization of microstructural and mechanical properties will also be part of this issue. Studies of light alloys, high-entropy alloys (HEAs), alumina-forming alloys (AFAs), oxide dispersion strengthened alloys (ODSs), advanced steels, and other innovative metallic materials will be welcomed.





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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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