

Special Issue

Alloy and Process Design of Metallic Materials

Message from the Guest Editor

Metallic materials have undergone major developments over the past two decades. The accelerated design of modern grades of metallic materials with the desired combination of properties is principally based on continuous improvement in understanding of the physical mechanisms that control their behavior. Thanks to recent developments in computational modeling and physical simulation tools, together with the progress in characterization techniques, this improved understanding has been made possible. Of equal importance are advances in industrial thermomechanical processing (TMP), by which a material with an improved combination of properties can be produced. Controlling the microstructure is what enables the achievement of a target combination of properties for an application. In particular, the evolution of the microstructure during forming is critical for understanding and relating the process/structure/properties combinations.

This Special Issue has the objective of describing the science and technology behind alloy and process design of metallic materials, and it also includes some detailed descriptions of examples on how new metallic materials can be designed.

Guest Editor

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About the Journal

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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