

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

Dr. Mohamed Soliman

Clausthal University of Technology, Clausthal-Zellerfeld, Germany

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Metals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
metals@mdpi.com

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering,
State Key Laboratory for Advanced Metals and Materials, University of
Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083,
China

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