Special Issue

Phase Transformation and Softening Mechanisms of Metals and Alloys during Thermomechanical Processing

Message from the Guest Editors

Dynamic and/or static softening is known to occur during the thermomechanical processing of metals and alloys. Some of these phenomena include recovery, recrystallization and phase transformation, which have been of great interest to academia and industry for decades. It is well known that understanding and controlling the softening behavior during the manufacturing of metals and alloys will lead to optimization of the final product mechanical properties. Additionally, these softening mechanisms can be modelled to guarantee improved properties for specific applications and the development of new materials. Regardless of significant research and progress in this field, the limit of our ability to improve material properties and the variety of different applications is far from being reached. This Special Issue of *Metals* invites experts to submit papers related to experimental research, simulation and modelling of the various softening mechanisms. All steel families, alloys of titanium, magnesium, aluminum, nickel-based, high-entropy and additive-manufactured alloys are the primary target materials, although other alloy systems will also be considered.

Guest Editors

Prof. Dr. Samuel F. Rodrigues

Department of Mechanical and Materials Engineering, Federal Institute of Education, Science and Technology of Maranhão - IFMA, Sao Luis 65030-005, MA, Brazil

Dr. Clodualdo Aranas

Department of Mechanical Engineering, University of New Brunswick, Fredericton, NB E3B 5A3, Canada

Dr. Fulvio Siciliano

Dynamic Systems Inc., Poestenkill, NY 12140, USA

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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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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.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez
Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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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