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Non-conventional Technologies for Thermal/Thermo-Mechanical Treatment

Guest Editors:

Prof. Dr. Roumen Petrov
Department of Electromechanical, Systems and Metal Engineering, Ghent University, B-9052 Ghent, Belgium

Dr. Ilchat Sabirov
IMDEA Materials Institute, 28906 Getafe, Madrid, Spain

Deadline for manuscript submissions:
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Message from the Guest Editors

Conventional metal processing significantly impacts resource exploitation and CO_2 emissions. In recent years, there has been a growing interest in nonconventional heat treatment processes in which heating is carried out at very high speed via different heating sources, via passing the current directly through the sample.

This Special Issue is focused on the results of experiments and modeling studies conducted on such nonconventional technologies for thermal or thermo-chemical treatments where high and very high heating rates and very short soaking times are used. Alternatively, approaches with multiple thermal treatment steps, such as thermal cycling, thermo-chemical treatment, (nano) composite production, and magnetic materials, are a subject of interest. We encourage you to share your experience in this field by publishing your research on the applications of such innovative technologies for ultrafast heating, ultrashort annealing, ultrafast tempering, microwave synthesis, thermal cycling, and thermo-mechanical or thermo-chemical treatment on steels and nonferrous alloys, demonstrating the link between the processing parameters, microstructure, texture, and properties.

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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

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.

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Contact Us

Metals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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