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Effect of External Electromagnetic Fields on the Behaviour of Metals and Alloys

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Deadline for manuscript submissions:
closed (30 June 2023)

Message from the Guest Editors

In recent years, there has been increasing interest in developing processes based on high external electric or magnetic fields to deliver improved properties to metals and alloys. Much of this research has focused on the application of electromagnetic fields to materials in the solid state. Preference has been given to the use of pulsed fields, as they can minimize energy consumption as well as treatment time. This Special Issue aims to present the latest research concerning the use of external electric and magnetic fields in materials processing. Papers should aim to introduce new knowledge which can allow for progression in this important research topic for both the scientific and technical communities.

This Special Issue is dedicated to the memory of Dr Anatolii Babutskyi, whose contribution to this research topic is widely recognized. His work at the G.S. Pisarenko Institute of Problems of Strength, National Academy of Sciences of Ukraine and at the University of Hertfordshire has motivated young researchers to continue the line of enquiry that he initiated.

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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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