



Magnetocaloric Effect and Magnetocaloric Materials—Fundamentals and Applications

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Message from the Guest Editors

Although the magnetocaloric effect was observed more than 140 years ago, it is still a very attractive phenomenon. In particular, in recent decades, due to the possibility to substitute classical cooling with freon and similar gases, it has also developed ecological dimensions. The aim is to find new compounds that are effective in this field, e.g., some Heusler alloys are characterized by a higher magnetocaloric effect. Another possibility is a decrease in dimensions, which could be done by microwire preparation. The field of very-low-temperature cooling by adiabatic demagnetisation is also important. All the above-mentioned properties result in a wide variety of technical applications. Therefore, it is very important to know and prepare these compounds.

In this Special Issue, we welcome articles that focus on fundamentals and applications in order to prepare them and study their properties, as well as the final products' performance.





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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.

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