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Structure, Magnetic Properties, and Magnetization Reversal Processes of Alloys

Guest Editor:

Prof. Dr. Jerzy J. Wysłocki
Częstochowa University Of Technology, Czestochowa, Poland

Deadline for manuscript submissions:
closed (31 October 2021)

Message from the Guest Editor

The most well-known magnetic material is pure Fe; however, through many years of research, a lot of other groups have also been discovered. Today, commercially used permanent magnets are based on the RE2Fe14B phase, which is cheaper compared to SmCo5 magnets, even though the latter are of much better quality. However, some difficulties in the market of rare earth elements have forced researchers to search for magnetic material based on mixes of transition metals or transition metals–metalloids, and promising results have been achieved for MnBi and MnAl alloys. These different kinds of alloys are produced using mainly arc-melting, induction melting, melt-spinning, suction-casting or high-energy ball milling methods. Through these methods, it is possible to produce crystalline, nanocrystalline or amorphous material, which has a strong influence on the structure, microstructure, magnetic properties, and magnetization reversal processes.

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Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Message from the Editor-in-Chief

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Journal Rank: JCR - Q1 (Metallurgy and Metallurgical Engineering) / CiteScore - Q2 (*Condensed Matter Physics*)

Contact Us

Materials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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𝕏@Materials_Mdpi