



Electromagnetic Properties of Metallic Materials

Guest Editor:

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Message from the Guest Editor

High-efficiency motors are a very important subject. It is estimated that 40–50% of all the world's electricity is spent on rotating electrical machines. This highlights the relevance of both soft and hard magnetic materials used in electrical motors. As a consequence of the significant demand for high-efficiency electrical steels, new types of electrical steels have been developed.

The main commercial types of hard magnets remain Nd-Fe-B of the 2:14:1 type, SmCo, alnico and barium and strontium ferrites. However, the demand for rare-earth elements is increasing considerably due to applications in electrical vehicles and wind turbines, especially off-shore wind turbines, which consume large amount of rare-earth magnets. Thus, alternatives for rare-earth magnets are also an interesting subject of discussion.

This Special Issue welcomes improvements on old materials, and also welcomes research developments for new alternative materials.





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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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