



Advanced Nanocomposite Magnets with the L10 Phase

Guest Editor:

Dr. Ovidiu Crisan

National Institute for Materials
Physics, 077125 Magurele,
Romania

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Message from the Guest Editor

Rare-earth-free permanent magnets with the L10 phase are actively researched for their potential as a future class of magnetic materials capable of operating at higher temperatures and in challenging corrosion environments, such as for renewable energy applications. Indeed, RE-free magnets can operate under extreme conditions such as high temperatures and corrosive media, for instance in wind turbine motors subjected to strong variations in temperature and humidity. Various possible RE-free magnets have been proposed and largely investigated, including compounds derived from the binary systems FePt, MnAl, MnBi, MnGa, and others. Common to all these different systems is the fact that they all may exhibit, under certain conditions, the formation of the tetragonal L10 phase, which has been shown to present large magneto-crystalline anisotropy and high coercivity.

The motivation of this Special Issue is that the research community has already begun searching for magnetic materials based on abundant elements that are less costly and easier to process without a significant degradation in the magnetic performances of current classes of rare earth magnets.





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Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

School of Geography, Earth and Environmental Science,
University of Birmingham,
Birmingham B15 2TT, UK

Message from the Editor-in-Chief

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MDPI, Grosspeteranlage 5
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