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Metal and Intermetallic Hydrides for Hydrogen Storage

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

In view of the depletion of fossil fuels and increasing prices and also because of ecological reasons, various renewable energy sources are of great interest. Hydrogen is considered as a promising energy carrier, Magnesium is a very promising material of its storage because of its high absorption capacity (7.6 wt. %), good reversibility, low cost, and relatively high abundance. The main drawbacks of the Mg-based materials for hydrogen storage are the necessity of activation for a long time to achieve high absorption capacity, elevated temperatures of hydrogenation, and, especially, for dehydrogenation and slow kinetics. To overcome these drawbacks of magnesium materials several approaches, such as size restriction, most often by ball milling combined with certain additives (catalysts) and also researching and synthesis of some new magnesium-based intermetallics, can be applied.

In this Special Issue, some novel optimized synthesis methods, additives, and intermetallics based on Mg in view of hydrogen storage applications of these materials will be discussed and highlighted.

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Message from the Editor-in-Chief

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