Special Issue

Metal and Intermetallic Hydrides for Hydrogen Storage

Message from the Guest Editor

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.

Guest Editor

Prof. Dr. Eli Grigorova

Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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

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