Special Issue

Research on Metallic Hydrogen Storage Materials

Message from the Guest Editors

Our fossil fuel consumption is harming Earth's biodiversity and habitats, and the development of technologies to transform renewable energies into useful energy is essential. In current trends, hydrogen-based fuels are gaining much attention among the scientific community due to their unique properties, such as nontoxicity and carbon-free emissions. However, the storage and transportation of hydrogen is a problem. Metal hydride technology presents a simple and cheap way to store and release hydrogen compared with other technologies such as high-pressure storage tanks and liquid hydrogen (stored at -253°C). This Special Issue will focus on hydrogen-storage-related areas, as mentioned below.

- Synthesis and characterization of transition-metals-substituted magnesium-based alloys for hydrogen storage application.
- Examination of hydrogen storage materials as anode materials for rechargeable batteries.
- Experimental and theoretical investigation of hydrogen absorption and desorption mechanisms into metal alloys.
- Advanced material design for hydrogen energy storage.
- Carbon and metal-carbon-based composites for hydrogen storage and conversion.

Guest Editors

Prof. Dr. Nagaraj Banapurmath

Centre for Material Science, School of Mechanical Engineering, KLE Technological University, Hubballi 580031, India

Dr. Ashok M. Sajjan

Centre for Material Science, KLE Technological University, Hubli, India

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

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Message from the Editor-in-Chief

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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