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Research on Metallic Hydrogen Storage Materials

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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.

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Message from the Editor-in-Chief

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