Special Issue

Hydrogen Storage: Materials, Methods and Perspectives

Message from the Guest Editor

The hydrogen economy is an ecological alternative to the conventional energy industry based on fossil fuels. One of its key elements is an efficient and economical hydrogen storage system. Hydrogen storage in the form of compressed gas and hydrogen storage materials in solid state are two dynamically developing research areas aimed at creating an effective hydrogen storage system. Scientists around the world are intensively working on the development of new and cheap high-strength materials for the production of high-pressure (30–70MPa) hydrogen storage tanks. A similar effort is being made to develop solid-state hydrogen storage materials, in the form of both hydrides and non-hydride hydrogen storage materials. In the last decade, there have also been a number of scientific works dedicated to prototype hydrogen storage systems, modeling their efficiency and experimental verification of the expected goals. Equally important problems are the validation of existing technological and material solutions and the indication of further prospective development directions in the area of ⌧⌧hydrogen storage methods.

Guest Editor

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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.

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