Special Issue

Hydrides for Energy Storage: Materials, Technologies and Applications

Message from the Guest Editor

As the world pivots towards sustainable energy systems, the need for efficient, safe, and scalable energy storage has never been greater. Hydrides—encompassing metal hydrides, complex hydrides, and organic hydrides (i.e., liquid organic hydrogen carriers, LOHCs)—offer various solutions for hydrogen storage, batteries, fuel cells, and thermal energy storage. We welcome submissions on a variety of topics, including but not limited to:

Development of Hydride Materials: Advances in metal, complex, and organic hydrides, including novel materials and hybrid systems.

Thermodynamics and Kinetics: Mechanistic studies of hydrogen absorption, desorption, diffusion, and chemical transformations.

Energy Storage Technologies: Hydrides for hydrogen storage, thermal energy storage, batteries, and fuel cells.

Processing and Manufacturing: Innovations in ball milling, additive manufacturing, and thin films for hydride-based systems.

Sustainability and Life Cycle Assessment: Environmental and economic evaluations of hydride technologies, including LOHCs.

Hydrogen Delivery and Refuelling: The application of hydrides and LOHCs for hydrogen logistics and refuelling infrastructures.

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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