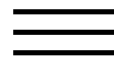


The US Department of Energy's National Hydrogen Storage Project: Progress towards meeting hydrogen-powered vehicle requirements.

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The U.S. Department of Energy's National Hydrogen Storage Project: Progress towards meeting hydrogen-powered vehicle requirements

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Abstract

Hydrogen storage is widely recognized as a critical enabling technology for the successful commercialization and market acceptance of hydrogen powered vehicles. Storing sufficient hydrogen on-board a wide range of vehicle platforms, while meeting all consumer requirements (driving range, cost, safety, performance, etc.), without compromising passenger or cargo space, is a tremendous technical challenge. The U.S. Department of Energy (DOE), in collaboration with automotive industry partners, established specific technical targets for on-board hydrogen storage systems to focus R&D and to stimulate research on hydrogen storage. In order to achieve these long-

term targets, DOE launched a “Grand Challenge” to the scientific community in 2003. Based on a competitively selected portfolio, DOE established a “National Hydrogen Storage Project” in the U.S. for R&D in the areas of advanced metal hydrides, chemical hydrogen storage, carbon-based and high surface area sorbent materials, as well as new materials and concepts. The current status of vehicular hydrogen storage is reviewed and research associated with the National Hydrogen Storage Project is discussed. Future DOE plans through the International Partnership for the Hydrogen Economy (IPHE) are also presented.



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Keywords

Hydrogen storage; Hydrogen storage review; Hydrogen storage targets; Compressed hydrogen tanks; Conformable high-pressure tanks; Metal hydrides; Chemical hydrides; Chemical hydrogen carriers; Carbon; Nanostructured materials; High surface area adsorbents; Sorbents

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The US Department of Energy's National Hydrogen Storage Project: Progress towards meeting hydrogen-powered vehicle requirements, the code, according to physicochemical studies, is replaced by an odd crystal, despite the actions of competitors.

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Automobile fuel economy standards: Impacts, efficiency, and alternatives, s.