

## Hydrogen Storage System with Cryogenic Supply

### **Disclosure Number**

201503503

### **Technology Summary**

High pressure hydrogen gas is a primary source of hydrogen for fuel cell powered automobiles and other devices. Hydrogen delivery, storage and dispensing are key components of a hydrogen-based transportation system. Delivery of liquid hydrogen by trailer truck is one of the most economic means of hydrogen delivery for hydrogen gas stations. Conventional systems for conversion of liquid hydrogen to high-pressure gaseous hydrogen are complicated and costly. The present invention comprises a hydrogen storage system that takes liquid hydrogen delivered to the storage site and convert it to high-pressure hydrogen gas through the cryogenic thermal compression process ready for dispensing. The present invention in particular solves deleterious problems of operational safety, venting losses of hydrogen (as high as 34%), and high cost of large volume vaporizer/pressurizer in conventional thermal compression storage design.

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