

ABSTRACT

**METHOD OF REVERSIBLY STORING H_2 AND H_2 -STORAGE SYSTEM BASED
ON METAL-DOPED CARBON-BASED MATERIALS**

This invention is directed to a method of reversibly storing hydrogen comprising exposing
5 a solid sorbent of metal-doped carbon-based material to a hydrogen atmosphere at a
temperature of from about 250 K to about 973 K under ambient or higher pressure. The
metal-doped carbon-based material is generally an alkali metal-doped carbon-based material
prepared by mixing a carbon material with an alkali metal salt and calcining the mixture
under an atmosphere of inert or reductive gas.

10 Fig 1 & 2 are to be published.