

Title (en)

CONTINUOUSLY-OPERATED METAL HYDRIDE HYDROGEN COMPRESSOR, AND METHOD OF OPERATING THE SAME

Title (de)

KONTINUIERLICH BETREIBBARER METALLHYDRIDWASSERSTOFFKOMPRESSOR SOWIE BETRIEBSVERFAHREN DAFÜR

Title (fr)

COMPRESSEUR D'HYDROGÈNE À HYDRURE MÉTALLIQUE À FONCTIONNEMENT CONTINU, ET SON PROCÉDÉ D'EXPLOITATION

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Application

EP 10736089 A 20100129

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Abstract (en)

[origin: WO2010087723A1] A continuously operated metal hydride hydrogen compressor, is disclosed, in which heating / cooling of a metal hydride is provided for by a heat pumping system. The compressor comprises two or more compression modules, each of which comprising a metal hydride container with metal hydride bed thermally coupled to a heating or cooling side of a heat pumping system comprising a heating side, cooling side and heat sink side. The metal hydride containers are also connected to a gas-distributing system comprising pipelines for input of low-pressure hydrogen and output of high-pressure hydrogen, gas collectors, check valves and connecting pipelines. In use the compressor acts as a reversible heat pumping system where the heating and cooling sides periodically operate alternatively as a heater and as a cooler. Thereby, the metal hydride bed can be heated to a higher temperature promoting high pressure hydrogen desorption therefrom, or cooled to a lower-temperature promoting low pressure hydrogen absorption therein, by the same heating / cooling side of the heat-pumping system, while excessive heat is permanently removed from the heat sink side at a medium temperature level.

IPC 8 full level

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