Title (en)

SYSTEM FOR HIGH-TEMPERATURE REVERSIBLE ELECTROLYSIS OF WATER COMPRISING A HYDRIDE TANK COUPLED WITH THE ELECTROLYSER

Title (de)

SYSTEM ZUR UMKEHRBAREN HOCHTEMPERATURELEKTROLYSE VON WASSER MIT EINEM AN DEN ELEKTROLYSATOR GEKOPPELTEN HYDRIDTANK

Title (fr)

SYSTÈME D'ÉLECTROLYSE RÉVERSIBLE DE L'EAU À HAUTE TEMPÉRATURE COMPORTANT UN RÉSERVOIR D'HYDRURES COUPLÉ À L'ÉLECTROLYSEUR

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Application

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Priority

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Abstract (en)

[origin: WO2018051041A1] The invention relates mainly to a system (10) for high-temperature reversible electrolysis of water, characterised in that it includes: a high-temperature reversible electrolyser (11), configured to operate in SOEC (solid oxide electrolyser cell) mode to produce hydrogen and store electricity, and/or in SOFC (solid oxide fuel cell) mode to withdraw hydrogen and produce electricity; a hydride tank (12), thermally coupled with said reversible electrolyser, the system being configured to allow the recovery of heat released by the hydride tank during hydrogen absorption in order to produce pressurised steam intended for entering the reversible electrolyser in SOEC mode, and to allow the recovery of heat released by the one or more outgoing streams from the reversible electrolyser in SOFC mode so as to allow the desorption of hydrogen from the hydride tank.

IPC 8 full level

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