Title (en)

HYDROGEN- FUEL CELL STACK WITH INTEGRATED COOLING AND AIR SUPPLY FOR USE WITH A FIXED PRESSURE DEAD-ENDED SUPPLY CONFIGURATION

Title (de)

WASSERSTOFF-BRENNSTOFFZELLENSTAPEL MIT INTEGRIERTER KÜHLUNG UND LUFTVERSORGUNG ZUR VERWENDUNG MIT EINER FESTDRUCK-SACKGASSEN-VERSORGUNGSKONFIGURATION

Title (fr)

ASSEMBLAGE DE PILES A COMBUSTIBLE A L'HYDROGENE AVEC ALIMENTATION D'AIR ET REFROIDISSEMENT INTEGRES DESTINE A ETRE UTILISE AVEC UNE CONFIGURATION D'ALIMENTATION A PRESSION FIXE ET A EXTREMITE BOUT PERDU

Publication

**EP 2097942 A2 20090909 (EN)**

Application

**EP 05819211 A 20051221**

Priority

- PT 2005000022 W 20051221
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Abstract (en)

[origin: WO2006068527A2] The following invention includes a fuel cell stack where the fuel is hydrogen, the electrolyte is in the solid state and is a polymeric membrane which allows for the cationic exchange but not the electronic exchange, designed for the feeding only of hydrogen and air, designed for electricity production, where: at the anodes, the hydrogen' s dissociation in protons and electrons takes place; at the membranes, the protons are driven from the anodes to the cathodes; at an outer circuit, the electrons are driven from the anodes to the cathodes; and, at the cathodes, the recombination of protons, electrons and oxygen atoms takes place into water molecules. It is characterized by comprehending a bipolar diffusion plate 1, where on one side channels 3 and 4 are drawn for the hydrogen feeding, channels 3 and 4 enclosing, together with the polymeric membrane, a tight chamber who allows the dead-ended operation of the device under a fixed pressure, without any fuel recirculation; and on the other side are drawn the axial channels 5 for an easy air circulation, channels 5 eventually forming a perpendicularly intertwined grid helping a natural air feeding.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2006068527A2

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