

Title (en)

HYDROGEN CATALYSIS POWER CELL FOR ENERGY CONVERSION SYSTEMS

Title (de)

WASSERSTOFFKATALYSEENERGIEZELLE FÜR ENERGIEUMWANDLUNGSSYSTEME

Title (fr)

CELLULE D'ENERGIE SERVANT A CATALYSER L'HYDROGENE POUR DES SYSTEMES DE CONVERSION D'ENERGIE

Publication

EP 1029380 A4 20071017 (EN)

Application

EP 98967045 A 19981028

Priority

- US 9822822 W 19981028
- US 6345197 P 19971029

Abstract (en)

[origin: WO9935698A2] An energy conversion system is provided for generating heat based on hydrogen catalysis and for transferring the generated heat to a working fluid and utilizing the heat or converting it to mechanical or electrical energy. The energy conversion system comprises a hydrogen catalysis power cell, the power cell comprising a heat transfer assembly having at least one reaction chamber containing the means to dissociate molecular hydrogen gas to atomic hydrogen and a delivery assembly connected in fluid communication to the reaction chamber for delivering hydrogen gas and vaporous catalyst for hydrogen catalysis. The delivery assembly comprises a catalyst vessel for generating the vaporous catalyst, a source of hydrogen gas, and a semi-permeable membrane assembly connected in fluid communication with the hydrogen gas source and the heat transfer assembly. The power cell further comprises means for regulating the temperature of the catalyst vessel and means for regulating the temperature surrounding the semi-permeable membrane. An energy conversion system is also provided having a hydrogen catalysis power cell as described herein, a working fluid for receiving the heat released from hydrogen catalysis, means for converting the heat in the working fluid to mechanical or electrical energy, and preferably means to balance the heat removed by the working fluid with the energy produced by hydrogen catalysis.

IPC 8 full level

B01J 8/00 (2006.01); **B01J 8/06** (2006.01); **B01J 19/24** (2006.01); **C01B 3/00** (2006.01); **F02C 1/04** (2006.01); **F02C 1/05** (2006.01); **F24J 1/00** (2006.01); **F24J 3/00** (2006.01); **F24V 30/00** (2018.01); **F28F 27/00** (2006.01); **G21K 1/00** (2006.01); **H01M 4/36** (2006.01); **H01M 8/04** (2006.01); **H01M 10/50** (2006.01)

CPC (source: EP)

B01J 8/009 (2013.01); **B01J 8/067** (2013.01); **B01J 19/2475** (2013.01); **C01B 3/00** (2013.01); **C01B 3/0094** (2013.01); **F02C 1/04** (2013.01); **F02C 1/05** (2013.01); **F28F 27/00** (2013.01); **B01J 2208/00061** (2013.01); **B01J 2208/00221** (2013.01); **B01J 2208/00256** (2013.01); **B01J 2208/00415** (2013.01); **B01J 2208/00495** (2013.01); **B01J 2208/00504** (2013.01); **B01J 2219/00063** (2013.01); **B01J 2219/00096** (2013.01); **B01J 2219/00103** (2013.01); **B01J 2219/00135** (2013.01); **B01J 2219/00155** (2013.01); **B01J 2219/00157** (2013.01); **B01J 2219/00162** (2013.01); **B01J 2219/00164** (2013.01)

Citation (search report)

- [DA] WO 9642085 A2 19961227 - HYDROCATALYSIS POWER CORP [US]
- [DA] WO 9210838 A1 19920625 - MILLS RANDELL LEE [US]
- [A] US 5632870 A 19970527 - KUCHEROV YAN R [US]
- [A] MILLS R L ET AL: "DIHYDRINO MOLECULE IDENTIFICATION", FUSION TECHNOLOGY, AMERICAN NUCLEAR SOCIETY. LAGRANGE PARK, ILLINOIS, US, vol. 25, no. 1, 1994, pages 103 - 119, XP000579986, ISSN: 0748-1896
- See references of WO 9935698A2

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 9935698 A2 19990715; **WO 9935698 A3 19990916**; **WO 9935698 A9 20000120**; AU 3634999 A 19990726; AU 734961 B2 20010628; CA 2304752 A1 19990715; CA 2304752 C 20090714; EP 1029380 A2 20000823; EP 1029380 A4 20071017

DOCDB simple family (application)

US 9822822 W 19981028; AU 3634999 A 19981028; CA 2304752 A 19981028; EP 98967045 A 19981028