

Title (en)

NON-CIRCULATING COOLANT PEM FUEL CELL POWER PLANT WITH ANTIFREEZE BACK PRESSURE AIR VENTING SYSTEM

Title (de)

PEM-BRENNSTOFFZELLEN-KRAFTWERK MIT NICHTZIRKULIERENDEM KÜHLMITTEL MIT EINEM FROSTSICHEREN RÜCKDRUCK-LUFTAUSLASSSYSTEM

Title (fr)

CENTRALE A PILES A COMBUSTIBLE PEM A REFRIGERANT NON CIRCULANT COMPRENANT UN SYSTEME D'EVACUATION D'AIR ANTIGEL A CONTRE-PRESSION

Publication

EP 1977468 A2 20081008 (EN)

Application

EP 05858680 A 20051223

Priority

US 2005046913 W 20051223

Abstract (en)

[origin: WO2007078276A2] A PEM fuel cell (4) power plant includes a passive air vent (24) through which air separated from a cathode effluent stream can be expelled from the power plant. The air vent operates satisfactorily during ambient freezing conditions thus it is eminently suitable for use in mobile applications such as in PEM fuel cell-powered automobiles, buses, or the like. The vent is formed from a liquid antifreeze layer (40) that is disposed in a sparging tank (36) which communicates with ambient surroundings. Any water vapor in the stream can condense out of the gas stream in the antifreeze. In order to facilitate this result, the antifreeze can be a liquid that is immiscible with water so that the condensed water will form a separate layer (38) in the sparging tank.

IPC 8 full level

H01M 8/04 (2006.01)

CPC (source: EP KR)

H01M 8/04 (2013.01 - KR); **H01M 8/04029** (2013.01 - EP); **H01M 8/04253** (2013.01 - EP); **H01M 8/06** (2013.01 - KR); **H01M 8/04164** (2013.01 - EP); **H01M 8/04291** (2013.01 - EP); **H01M 2008/1095** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2007078276 A2 20070712; WO 2007078276 A3 20071115; CN 101366140 A 20090211; CN 101366140 B 20101208; EP 1977468 A2 20081008; EP 1977468 A4 20110119; JP 2009521780 A 20090604; KR 101200144 B1 20121112; KR 20080079251 A 20080829

DOCDB simple family (application)

US 2005046913 W 20051223; CN 200580052389 A 20051223; EP 05858680 A 20051223; JP 2008547201 A 20051223; KR 20087013813 A 20051223