Title (en)

MEMBRANES FOR FUEL CELLS, METHOD FOR PRODUCING SAID MEMBRANES AND PRODUCTION OF FUEL CELLS USING MEMBRANES OF THIS TYPE

Title (de)

MEMBRANEN FÜR BRENNSTOFFZELLEN, VERFAHREN ZUR HERSTELLUNG DER MEMBRANEN UND BRENNSTOFFZELLEN UNTER VERWENDUNG DERARTIGER MEMBRANEN

Title (fr)

MEMBRANES POUR PILES A COMBUSTIBLE, PROCEDE POUR PRODUIRE DE TELLES MEMBRANES ET POUR PRODUIRE DES PILES A COMBUSTIBLES EN UTILISANT DE TELLES MEMBRANES

Publication

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Application

EP 05715219 A 20050128

Priority

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Abstract (en)

[origin: WO2005076401A1] The invention relates to membranes for fuel cells, which are characterised by a homogeneous absorption and good retention of doping agents and which guarantee a high mechanical stability at high temperatures when doped. Said membranes consist of at least one polymer, whose nitrogen atoms are chemically bonded to a central atom of a derivative of a polybasic inorganic oxo acid. The membranes are produced from polymer solutions that are devoid of water and oxo acid derivatives, by heating the solution that has been introduced into a membrane mould until a self-supporting membrane has been formed and then by tempering the latter. Inventive fuel cells consisting of a membrane electrode assembly (MEA) that comprises an inventive membrane and phosphoric acid as the doping agent have, for example, an impedance of 0.5-1 ohmcm<2> at a measuring frequency of 1000 Hz and at an operating temperature of 160° C and a gas flow for hydrogen of 170 ml/min and for air of 570 ml/min. They can be used as high-temperature polyelectrolyte membrane fuel cells for a working temperature of up to at least 250° C.

IPC 8 full level

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CPC (source: EP US)

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