Title (en)

IMPROVED MEMBRANE ELECTRODE UNITS

Title (de)

VERBESSERTE MEMBRAN-ELEKTRODENEINHEITEN

Title (fr)

UNITÉS À MEMBRANE-ÉLECTRODE AMÉLIORÉES

Publication

EP 2404342 A1 20120111 (DE)

Application

EP 10708498 A 20100303

Priority

- EP 2010001315 W 20100303
- EP 09003257 A 20090306
- EP 10708498 A 20100303

Abstract (en)

[origin: EP2228857A1] Membrane electrode unit comprises: at least one phosphoric acid containing polymer electrolyte membrane; and at least one gas diffusion electrode comprising (i) at least one catalyst layer and (ii) at least one gas diffusion medium comprising at least two gas diffusion layers, where the first and the second gas diffusion layers comprise an electrically conductive macroporous layer in which the pores exhibit an average pore diameter of 10-30 mu m and the gas diffusion medium contains polytetrafluoroethylene. Membrane electrode unit comprises: at least one phosphoric acid containing polymer electrolyte membrane; and at least one gas diffusion electrode comprising (i) at least one catalyst layer and (ii) at least one gas diffusion medium comprising at least two gas diffusion layers, where the first and the second gas diffusion layers comprise an electrically conductive macroporous layer in which the pores exhibit an average pore diameter of 10-30 mu m and the gas diffusion medium contains polytetrafluoroethylene. The first gas diffusion layer exhibits a high polytetrafluoroethylene concentration than the second gas diffusion layer. An independent claim is also included for preparing the membrane electrode unit, comprising: (a) adding polytetrafluoroethylene to a gas diffusion medium which comprises an electrically conductive macroporous layer in which the pores exhibit an average pore diameter of 10-30 mu m, (b) annealing the gas diffusion medium of (a) at a temperature of greater than 100[deg] C, and (c) adding a catalyst material to the gas diffusion medium of step (b).

IPC 8 full level

H01M 4/88 (2006.01)

CPC (source: EP KR US)

H01M 4/86 (2013.01 - KR); **H01M 4/8636** (2013.01 - EP US); **H01M 4/8828** (2013.01 - EP US); **H01M 8/02** (2013.01 - KR); **H01M 8/0239** (2013.01 - EP US); **H01M 8/0245** (2013.01 - EP US); **H01M 8/10** (2013.01 - KR); H01M 8/023 (2013.01 - EP US); H01M 2008/1095 (2013.01 - EP US); H01M 2300/0085 (2013.01 - EP US); Y02E 60/50 (2013.01 - EP)

Citation (search report)

See references of WO 2010099948A1

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