

(51) International Patent Classification:
H01M 4/88 (2006.01) *H01M 4/96* (2006.01)(21) International Application Number:
PCT/CN2010/002227(22) International Filing Date:
31 December 2010 (31.12.2010)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: VACUUM CHAMBER METHOD TO FORM POLYMER COATINGS ON POROUS SUPPORT

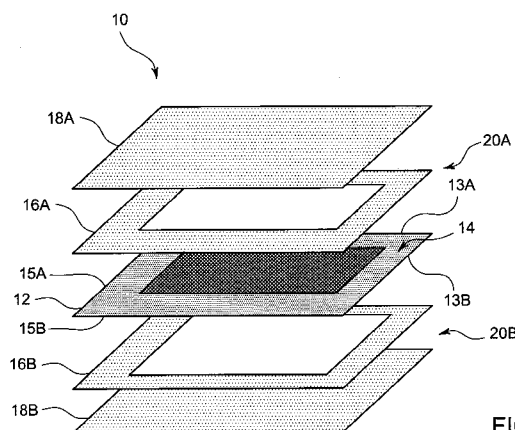


FIG. 1

(57) Abstract: A bi-polar electrode having ion exchange polymers on opposite faces (13A, 13B) of a porous substrate is formed using a method that includes providing an electrode substrate (12) with activated carbon layers on opposite faces (13A, 13B) of the electrode substrate (12), wherein said faces have an outer perimeter band (14) void of the activated carbon layers. Gaskets (16A, 16B) are placed against the outer perimeter band (14) of the electrode substrate (12) void of activated carbon and the electrode substrate (12) is clamped between two rigid plates (18A, 18B) to form a first airtight chamber (20A) on one side (15A) of the electrode substrate (12) and a second airtight chamber (20B) on the opposite side (15B) of the electrode substrate (12). A first polymerizable monomer mixture having an anion exchange group is added into the first chamber (20A) and a second polymerizable monomer mixture having a cation exchange group is added into the second chamber (20B). The first and second polymerizable monomer mixtures are then polymerized in an oven.