



(43) International Publication Date
21 November 2013 (21.11.2013)

(51) International Patent Classification:

B01D 61/02 (2006.01) **B01D 69/00** (2006.01)
B01D 71/12 (2006.01) **B82Y 99/00** (2011.01)

(21) International Application Number:

PCT/SG2013/000205

(22) International Filing Date:

20 May 2013 (20.05.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/648,870 18 May 2012 (18.05.2012) US

(71) Applicants: SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN [SG/SG]; 20 Dover Drive, Singapore 138682 (SG). MASSACHUSETTS INSTITUTE OF TECHNOLOGY [US/US]; 77 Massachusetts Avenue, Cambridge, Massachusetts 02139 (US).

(72) Inventors; and

(71) Applicants : YANG, Hui Ying [SG/SG]; c/o 20 DOVER DRIVE, Singapore 138682 (SG). KARNIK, Rohit [US/US]; c/o 77 MASSACHUSETTS AVENUE, Cambridge, Massachusetts 02139 (US).

(74) Agent: ATMD BIRD & BIRD LLP; 2 Shenton Way #18-01 SGX Centre 1, Singapore 068804 (SG).

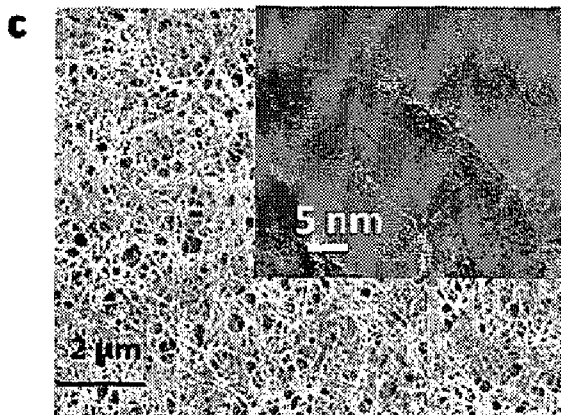
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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: MEMBRANE FOR FILTRATING WATER



(57) Abstract: The present invention relates to a material. In particular, it relates to a membrane for filtering water. More particularly, it relates to a membrane comprising carbon nanotubes and mixed cellulose ester porous membranes for water desalination and purification. Still more particular, the membrane comprising a fibrous substrate and carbon nanotubes formed on a fibrous substrate, wherein the surface of the carbon nanotubes is functionally modified. A microfluidic device comprising such a membrane and a method for filtering water are also disclosed.