



(51) International Patent Classification:
B01D 61/04 (2006.01)

(21) International Application Number:
PCT/US2009/068590

(22) International Filing Date:
17 December 2009 (17.12.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/338,990 18 December 2008 (18.12.2008) US

(72) Inventor; and

(71) Applicant (for all designated States except US): **IYER, Subramanian** [US/US]; 17120 Fremont Lane, Yorba Linda, CA 92886 (US).

(74) Agent: **DELANEY, Karoline, A.**; Knobbe, Martens, Olson & Bear, LLP, 2040 Main Street, 14th Floor, Irvine, CA 92614 (US).

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, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, 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))

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

(54) Title: SYSTEMS AND METHODS FOR FORWARD OSMOSIS FLUID PURIFICATION

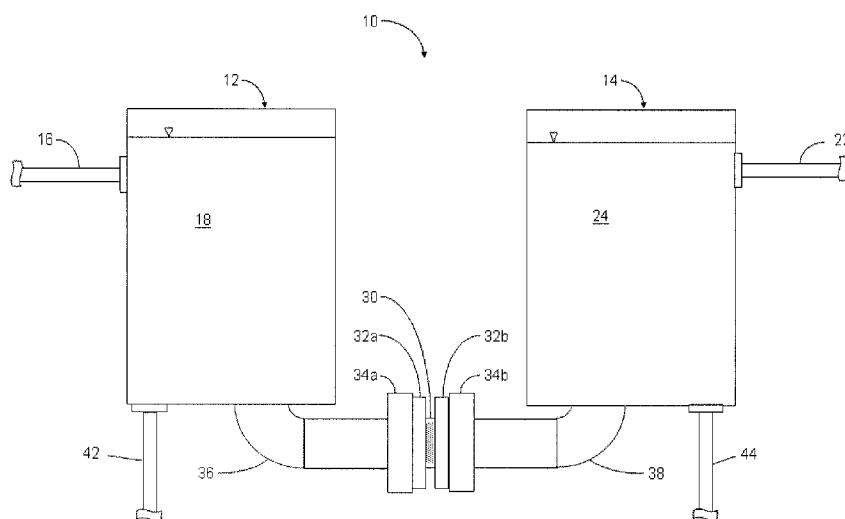


Fig. 1

(57) Abstract: A process for purification of fluids, for example, desalination of seawater or brackish water, using organic solutes in a concentrated water solution for use in a forward osmosis process, to extract fresh water out of salt water through the forward osmosis membrane, and subsequently separating the organic solutes out of the diluted forward osmosis permeate by cloud point extraction, thereby regenerating a concentrated organic solution for recycling to the forward osmosis process, and fresh water for potable water use.