

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

G00002

(43) International Publication Date
11 July 2002 (11.07.2002)

PCT

(10) International Publication Number
WO 02/053682 A1

- (51) International Patent Classification⁷: **C10G 17/02**, C02F 1/44
- (21) International Application Number: PCT/US01/49766
- (22) International Filing Date:
21 December 2001 (21.12.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/258,503 28 December 2000 (28.12.2000) US
10/021,801 12 December 2001 (12.12.2001) US
- (71) Applicant: **EXXONMOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; P.O. Box 900, 1545 Route 22 East, Annandale, NJ 08801-0900 (US).
- (72) Inventors: **SAXTON, Robert, J.**; 5168 Independence Drive, Pleasanton, CA 94566 (US). **MINHAS, Bhupender, S.**; 1007 Goose Creek Court, Bel Air, MD 21014 (US).
- (74) Agents: **HUGHES, Gerard, J.** et al.; ExxonMobil Research and Engineering Company, P.O. Box 900, 1545 Route 22 East, Annandale, NJ 08801-0900 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 02/053682 A1



162162

(54) Title: IONIC MEMBRANES FOR ORGANIC SULFUR SEPARATION FROM LIQUID HYDROCARBON SOLUTIONS

(57) Abstract: Methods for the separation of sulfur compounds from a hydrocarbon mixture using an ionic membrane are provided. Preferred ionic membranes are Nafion[®]-type (polymers of perfluorosulfonic acid) membranes and derivatives thereof. Preferred applications include the removal of sulfur contaminants from light cracked naphthas.