



(51) International Patent Classification:

B01J 29/04 (2006.01) *B01J 37/02* (2006.01)
B01J 29/03 (2006.01) *B01J 37/00* (2006.01)
C01B 37/00 (2006.01) *C10G 45/64* (2006.01)
C01B 37/02 (2006.01) *C10G 45/62* (2006.01)

(21) International Application Number:

PCT/US2012/028819

(22) International Filing Date:

12 March 2012 (12.03.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/475,687 15 April 2011 (15.04.2011) US
 11171341.8 24 June 2011 (24.06.2011) EP

(71) Applicant (for all designated States except US): **EXXON-MOBIL CHEMICAL PATENTS INC.** [US/US]; A Corporation of The State of Delaware, 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LAI, Wenyih, F.** [US/US]; 656 Bellerive Court, Bridgewater, NJ 08807 (US). **MCCARTHY, Stephen, J.** [US/US]; 4440 Devonshire Drive, Center Valley, PA 18034 (US). **KAY, Robert, E.** [US/US]; 4016 Sutton Road, Easton, PA 18045 (US).

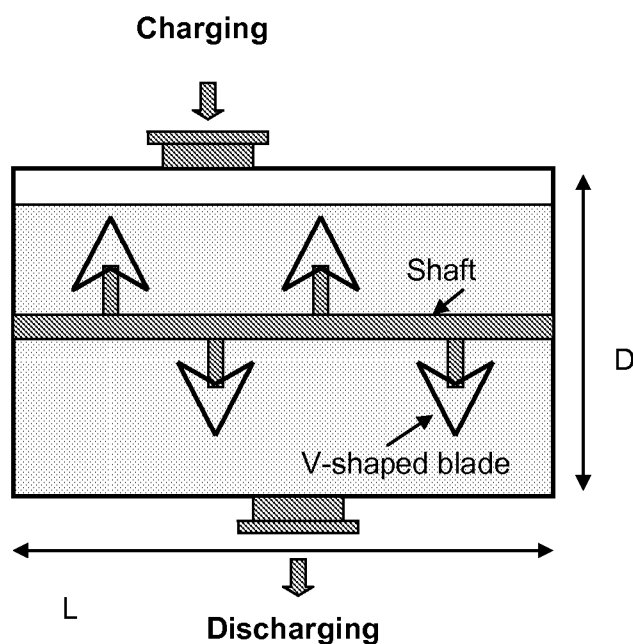
(74) Agents: **TYUS, Darryl, M.** et al.; Exxonmobil Chemical Company, Law Technology, P.O. Box 2149, Baytown, TX 77522-2149 (US).

(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, 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.

[Continued on next page]

(54) Title: SYNTHESIS AND USE OF M41S FAMILY MOLECULAR SIEVES

FIG. 2



(57) Abstract: A process is described for producing an M41 S family molecular sieve. The process comprises preparing a synthesis mixture capable of forming said molecular sieve in a reactor, which is equipped with a mixer having a Froude number of at least 1, said synthesis mixture having a solids content of at least 20 wt%. The synthesis mixture is heated in the reactor while agitating the mixture with said mixer to form a product mixture comprising water and crystals of said molecular sieve material. Thereafter at least part of the water is removed from the product mixture in the reactor so as to decrease the water content of the product mixture inside the reactor by at least 5 wt%.



(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, 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).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*