

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 March 2006 (23.03.2006)

PCT

(10) International Publication Number
WO 2006/031432 A3

(51) International Patent Classification:
C10G 19/00 (2006.01) **C10G 17/00** (2006.01)

(21) International Application Number:
PCT/US2005/030800

(22) International Filing Date: 30 August 2005 (30.08.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/609,624 14 September 2004 (14.09.2004) US
11/202,593 12 August 2005 (12.08.2005) US

(71) Applicant (for all designated States except US): **EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HSU, Edward Ching-Shen** [US/US]; 316 Eileen Way, Bridgewater, NJ 08807 (US). **PATEL, Rutton Dinshaw** [US/US]; 2229 North Quebec Street, Arlington, VA 22207 (US). **BROWN, Leo Dale** [US/US]; 5931 Wildflower Road, Baton Rouge, LA 70817 (US).

(74) Agents: **PURWIN, Paul, E.** et al.; ExxonMobil Research and Engineering Company, 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
9 November 2006

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.

(54) Title: EMULSION NEUTRALIZATION OF HIGH TOTAL ACID NUMBER (TAN) CRUDE OIL

(57) Abstract: This invention is a method for reducing the total acid number of organic acid containing petroleum oil comprising forming a water-in-oil emulsion comprising an aqueous Group IIA metal hydroxide solution or slurry in a hydrocarbon oil, said water-in-oil emulsion having an aqueous droplet particle size diameter of from 1 to 25µ, adding the water-in-oil emulsion to the organic acid containing petroleum oil and permitting the mixture to stand for a time sufficient to permit the neutralization of the organic acids in the petroleum oil.



WO 2006/031432 A3