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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 January 2007 (18.01.2007)

PCT

(10) International Publication Number
WO 2007/008397 A1

(51) International Patent Classification:
C10G 9/00 (2006.01)

(21) International Application Number:
PCT/US2006/024892

(22) International Filing Date: 27 June 2006 (27.06.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/178,158 8 July 2005 (08.07.2005) US

(71) Applicant *(for all designated States except US)*: **EXXONMOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **STRACK, Robert, D.** [US/US]; 1906 Park Lodge Court, Houston, TX 77062 (US). **MESSINGER, John, R.** [US/US]; 2810 Cedarville Drive, Kingwood, TX 77345 (US).

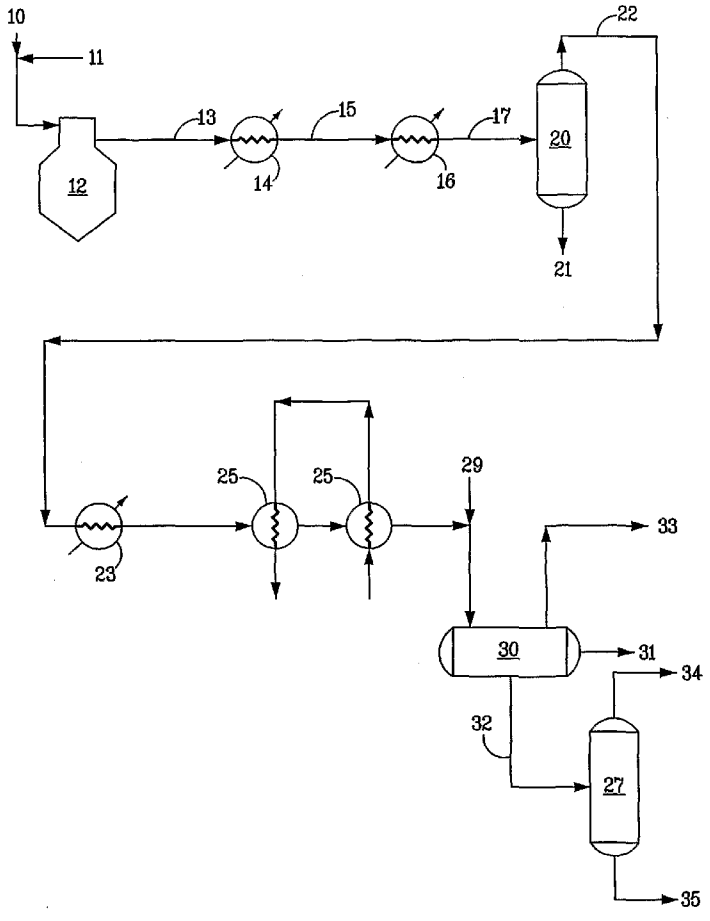
(74) Agent: **NOWAK, Kelly, A.**; EXXONMOBIL CHEMICAL COMPANY, P O Box 2149, Baytown, TX 77522-2149, (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, 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, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, 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),

[Continued on next page]

(54) Title: METHOD FOR PROCESSING HYDROCARBON PYROLYSIS EFFLUENT



(57) Abstract: A method is disclosed for treating the effluent from a hydrocarbon pyrolysis process unit to recover heat and remove tar therefrom. The method comprises passing the gaseous effluent to at least one primary heat exchanger, thereby cooling the gaseous effluent and generating high pressure steam. Thereafter, the gaseous effluent is passed through at least one secondary heat exchanger having a heat exchange surface maintained at a temperature such that part of the gaseous effluent condenses to form in situ a liquid coating on said surface, thereby further cooling the remainder of the gaseous effluent to a temperature at which tar, formed by the pyrolysis process, condenses. The condensed tar is then removed from the gaseous effluent in at least one knock-out drum.

WO 2007/008397 A1

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*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.