

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 December 2008 (11.12.2008)

PCT

(10) International Publication Number
WO 2008/150661 A1

(51) International Patent Classification:

C10G 9/26 (2006.01)

(21) International Application Number:

PCT/US2008/063716

(22) International Filing Date: 15 May 2008 (15.05.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/933,011 4 June 2007 (04.06.2007) US

60/933,044 4 June 2007 (04.06.2007) US

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

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KEUSENKOTHEN, Paul, F.** [US/US]; 408 Hawthorne, Houston, TX 77006 (US). **HERSHKOWITZ, Frank** [US/US]; 509 Lyons Road, Liberty Corner, NJ 07938 (US).

(74) Agents: **JAMES, Rick, F.** 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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, 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, MT, NL, NO, PL, PT, RO, SE, SI, SK, 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))

[Continued on next page]

(54) Title: CONVERSION OF CO-FED METHANE AND HYDROCARBON FEEDSTOCKS INTO HIGHER VALUE HYDROCARBONS

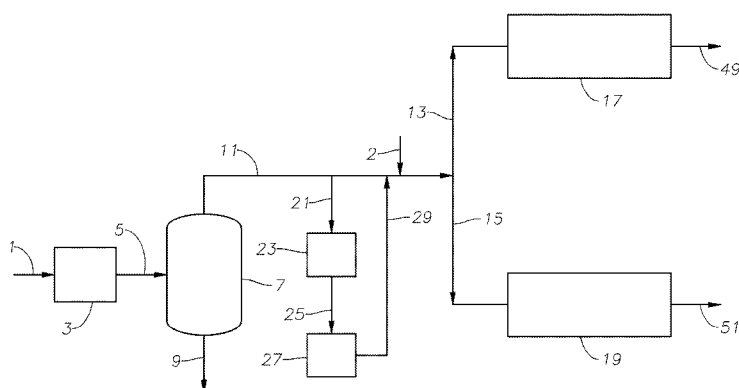


Fig. 5

(57) Abstract: In one aspect, the inventive process comprises a process for pyrolyzing a hydrocarbon feedstock containing nonvolatiles in a regenerative pyrolysis reactor system. The process comprises: (a) heating the nonvolatile-containing hydrocarbon feedstock upstream of a regenerative pyrolysis reactor system to a temperature sufficient to form a vapor phase that is essentially free of nonvolatiles and a liquid phase containing the nonvolatiles; (b) separating said vapor phase from said liquid phase; (c) feeding the separated vapor phase and methane to the pyrolysis reactor system; and (d) converting the methane and separated vapor phase in said pyrolysis reactor system to form a pyrolysis product. In another aspect, the invention includes a separation process that feeds multiple pyrolysis reactors.

WO 2008/150661 A1



Published:

— *with international search report*