

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
28 October 2021 (28.10.2021)



(10) International Publication Number
WO 2021/216216 A1

(51) International Patent Classification:

C10G 9/36 (2006.01) *C10G 69/06* (2006.01)
B01D 53/14 (2006.01) *C10G 55/04* (2006.01)
C10G 45/32 (2006.01) *C07C 4/04* (2006.01)

(21) International Application Number:

PCT/US2021/022231

(22) International Filing Date:

12 March 2021 (12.03.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/012,891 20 April 2020 (20.04.2020) US
20184289.5 06 July 2020 (06.07.2020) EP

(71) Applicant: **EXXONMOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520 (US).

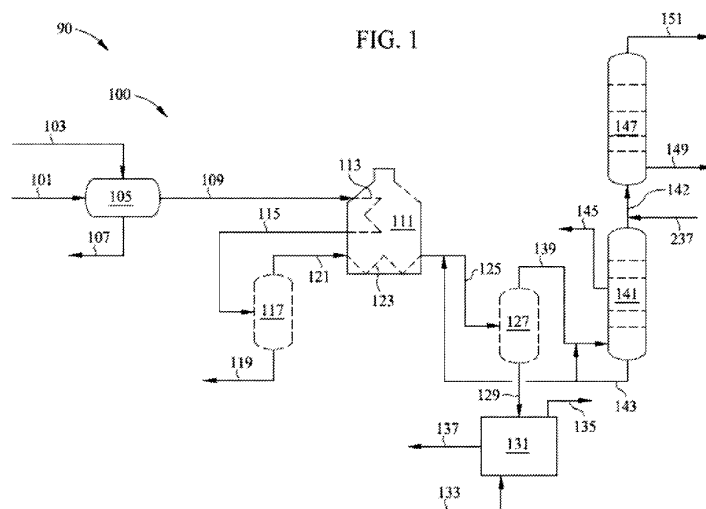
(72) Inventors: **NIERODE, Mark, A.**; 3202 Sunny Vale Dr., Kingwood, TX 77345 (US). **SMITH, Rodney, S.**; 23 Queensferry Road, Edinburgh, EH43HB (GB). **NORRIS,**

Donald, J.; 22 Repton Ave., London, ON N5X 3G4 (CA). **MONDAL, Asit, K.**; Arabian Homes, Nevada Village, Villa No 141 Prince, Muqrinbin Abdulaziz Street, Ai-wahah District, Yanbu Al Bahar, 46436 (SA). **JINDAL, Roshni**; #16-28, Block 2c, The Lakeshore, 31 Jurong West Street 41, Singapore 649412 (SG).

(74) Agent: **CHEN, Siwen** et al.; Exxonmobil Chemical Company, Law Department, 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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: HYDROCARBON PYROLYSIS OF FEEDS CONTAINING NITROGEN



(57) Abstract: The invention relates to hydrocarbon pyrolysis, e.g., the steam cracking of feeds comprising hydrocarbon and nitrogen-containing compositions. The invention also relates to equipment, systems, and apparatus useful for such pyrolysis, to the products and by-products of such pyrolysis, and to the further processing of such products and co-products, e.g., by polymerization.

[Continued on next page]

(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, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, 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))*