

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
25 July 2024 (25.07.2024)



(10) International Publication Number
WO 2024/155452 A1

(51) International Patent Classification:

C10G 1/00 (2006.01) C10B 53/07 (2006.01)
C10G 1/10 (2006.01) C10G 45/02 (2006.01)
C10G 9/36 (2006.01)

(21) International Application Number:

PCT/US2024/010395

(22) International Filing Date:

05 January 2024 (05.01.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/480,608 19 January 2023 (19.01.2023) US

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(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ,

(54) Title: PROCESSES AND SYSTEMS FOR CO-PROCESSING A HYDROCARBON FEED AND A HEAVY FEED CONTAINING A PLASTIC MATERIAL

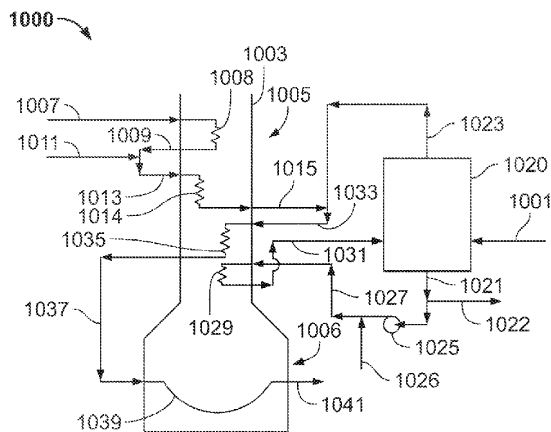


FIG. 1

(57) Abstract: Processes and systems for hydrocarbon pyrolysis. In some embodiments, a hydrocarbon can be heated within a convection section of a steam cracking furnace and combined with an aqueous fluid to produce a heated mixture. A heavy feed that includes a plastic material can be introduced into a vessel and a portion of the plastic material can be cracked therein. Liquid and vapor effluents exiting the vessel can be obtained. At least a portion of the liquid effluent can be heated to produce a heated fluid stream that can be recycled to the vessel. The vapor effluent can be combined with the heated mixture to produce a combined mixture that can be heated within the convection section to produce a heated combined mixture. At least a portion of the heated combined mixture can be cracked within a radiant section of the steam cracking furnace to produce a steam cracker effluent.

[Continued on next page]

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, ME, 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))*