

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
11 April 2024 (11.04.2024)



(10) International Publication Number
WO 2024/076902 A1

(51) International Patent Classification:

C10L 1/08 (2006.01) C10G 69/12 (2006.01)
C07C 1/24 (2006.01) C12P 7/06 (2006.01)
C10G 45/58 (2006.01) C10G 50/00 (2006.01)
C10G 3/00 (2006.01)

(21) International Application Number:

PCT/US2023/075699

(22) International Filing Date:

02 October 2023 (02.10.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/378,193 03 October 2022 (03.10.2022) US

(71) Applicant: RENEWABLE ENERGY GROUP, INC.

[US/US]; 416 S. Bell Avenue, Ames, Iowa 50010 (US).

(72) Inventors: ABHARI, Ramin; 11229 South 67th East Court, Bixby, Oklahoma 74008 (US). HAVERLY, Martin; 2304 Lakeview Drive, Ames, Iowa 50010 (US).

(74) Agent: CARTER, Ryan; 625 First Street SE, Cedar Rapids, Iowa 52401 (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, 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.

(54) Title: METHOD FOR MANUFACTURE OF A BIOMASS-BASED DIESEL FROM FEEDSTOCK FROM OLEFIN OLIGOMERS

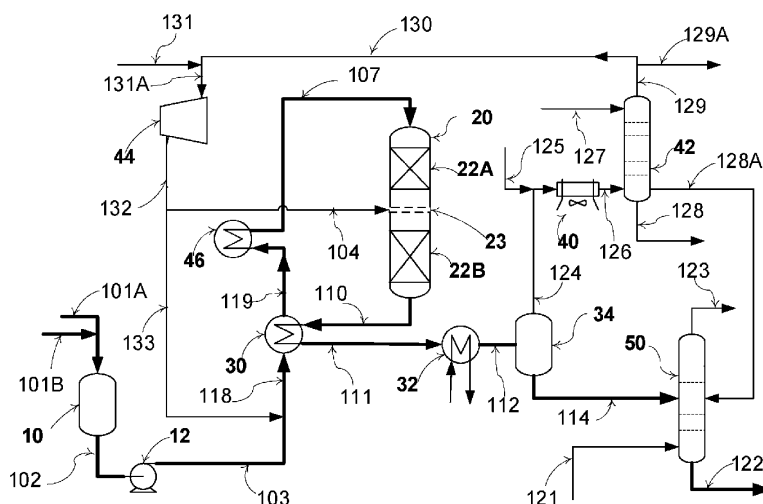


Fig. 1

(57) Abstract: The present technology relates to biofuels, and more particularly, to biomass-based diesel from olefin oligomers. Diesel fuels with cetane number of 49 or greater are prepared by blending hydrocarbons produced by olefin oligomerization with renewable diesel, resulting in a blended fuel that has a lower cloud point than the cloud point of the renewable diesel. A different aspect relates to an integrated process for lipid HDO and olefin oligomerization wherein the propane coproduct of lipid HDO is subjected to dehydrogenation to produce a vapor stream having propylene and hydrogen. The propylene is subsequently oligomerized to iso-olefins and the iso-olefins are combined with the lipid feed for hydrogenation in the HDO reactor.

[Continued on next page]

(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, 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).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*