



(51) International Patent Classification:

C10G 69/12 (2006.01) C10G 2/00 (2006.01)
C10G 67/02 (2006.01) C01B 3/32 (2006.01)
C10G 3/00 (2006.01)

(21) International Application Number:

PCT/US2024/029068

(22) International Filing Date:

13 May 2024 (13.05.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/466,626 15 May 2023 (15.05.2023) US

(71) Applicant: UOP LLC [US/US]; 25 East Algonquin Road,
P.O. Box 5017, Des Plaines, Illinois 60017-5017 (US).

(72) Inventors: PAUSTIAN, Joel S.; HONEYWELL INTER-
NATIONAL INC., Intellectual Property Services Group,
855 S. Mint Street, Charlotte, North Carolina 28202 (US).
HORN, Ian J.; HONEYWELL INTERNATIONAL INC.,
Intellectual Property Services Group, 855 S. Mint Street,
Charlotte, North Carolina 28202 (US).

(74) Agent: BENINATI, John F. et al.; HONEYWELL
INTERNATIONAL INC., Intellectual Property Services

Group, 300 S. Tryon Street, Suite 600, Charlotte, North Car-
olina 28202 (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.

(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).

(54) Title: SYNGAS AND LIQUID FUEL PRODUCTION FROM OLIGOMERIZATION BYPRODUCTS

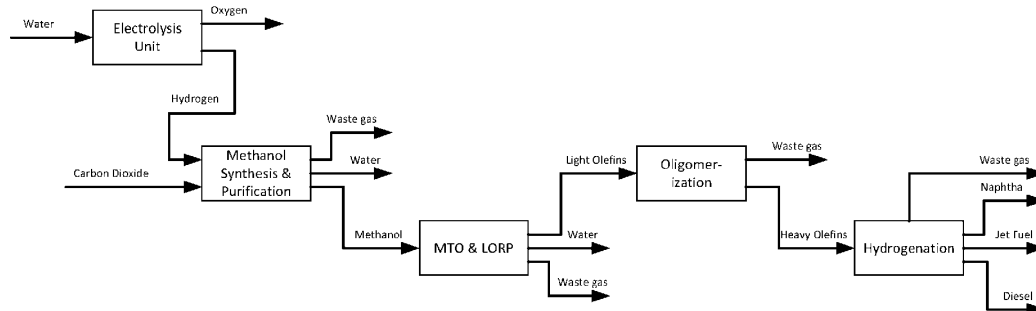


FIG. 1

(57) Abstract: A process for the production of a liquid fuel from carbon dioxide and hydrogen is disclosed. The process comprises reacting a mixture of carbon dioxide and hydrogen to produce methanol. The methanol is contacted with an MTO catalyst to produce an olefin stream. The olefin stream is oligomerized with an oligomerization catalyst to produce an oligomerized olefin stream which is then hydrogenated to produce the liquid fuel streams jet fuel, diesel, and naphtha. At each stage, waste gas streams are produced. A syngas stream is produced comprising carbon oxides and hydrogen by (1) steam reforming, autothermal reforming, or dry reforming; or (2) partial oxidization.

[Continued on next page]

Published:

— with international search report (Art. 21(3))