

(19) World Intellectual Property
Organization
International Bureau



WIPO | PCT



(10) International Publication Number
WO 2024/196450 A8

(43) International Publication Date
26 September 2024 (26.09.2024)

(51) International Patent Classification:
C10G 65/04 (2006.01)

(21) International Application Number:
PCT/US2024/000004

(22) International Filing Date:
07 March 2024 (07.03.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/445,055 22 March 2023 (22.03.2023) US

(71) Applicant: **INFINIUM TECHNOLOGY, LLC** [US/US];
2020 L Street, Suite 120, Sacramento, CA 95811-4260
(US).

(72) Inventor: **SCHUETZLE, Robert**; 1039 11th Avenue,
Sacramento, CA 95818 (US).

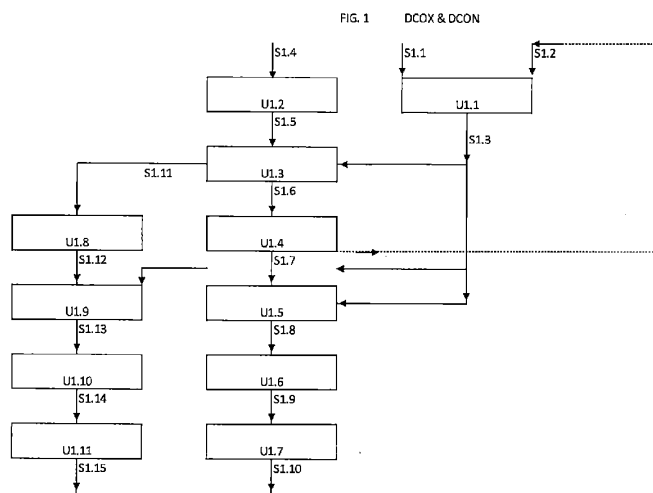
(72) Inventor: **WRIGHT, Harold** (*deceased*).

(72) Inventor: **WRIGHT, Benjamin**; 20800 Bartlett Court,
Brookfield, WI 53045 (US).

(74) Agent: **MCKINNEY, Jeffrey, A.**; McKinney Law Group
APC, 500 Stone Pine Road, #643, Half Moon Bay, CA
94019 (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,

(54) Title: PRODUCTION OF FUELS FROM HYDROPROCESSED ESTERS AND FATTY ACIDS, LOW CARBON HYDROGEN,
AND CARBON DIOXIDE IN AN INTEGRATED HEFA AND EFUELS PLANT



(57) Abstract: An integrated facility to produce either renewable diesel fuel or sustainable aviation fuel, or both renewable diesel and sustainable aviation fuel from carbon dioxide including carbon dioxide that is a byproduct of reacting Hydroprocessed Esters and Fatty Acids (HEFA) and hydrogen that produces renewable fuels. HEFA is hydroprocessed to produce a liquid fuel product and may produce water, CO and water, or CO₂. Integrated with an eFuels process that produces the hydrogen that is needed in various steps of the integrated process. Renewable or low carbon electricity is used to convert water to hydrogen and oxygen in an electrolyzer. Carbon dioxide is reacted with at least a portion of the hydrogen to produce a stream comprising carbon monoxide with a carbon dioxide conversion per pass of between 50% to 100%, preferably between 60% and 100%, and more preferably between 70% and 100%.

[Continued on next page]

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).

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))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*

(48) Date of publication of this corrected version:

07 November 2024 (07.11.2024)

(15) Information about Correction:

see Notice of 07 November 2024 (07.11.2024)