

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 May 2024 (23.05.2024)



(10) International Publication Number
WO 2024/108011 A3

(51) International Patent Classification:

C07C 15/20 (2006.01) C07D 213/02 (2006.01)
C07C 15/27 (2006.01) C07C 13/00 (2006.01)

(21) International Application Number:

PCT/US2023/080102

(22) International Filing Date:

16 November 2023 (16.11.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/425,964 16 November 2022 (16.11.2022) US

(71) Applicant: **EXXONMOBIL TECHNOLOGY AND ENGINEERING COMPANY** [US/US]; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US).

(72) Inventors: **ZABULA, Alexander V.**; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US). **CANICH, Jo Ann M.**; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US). **DUPPER, Torin J.**; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US). **ATALLA, Andrew E.**; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US). **YOUNKER, Jarod M.**; 5200 Bayway Drive, Baytown, Texas 77522-2149 (US).

(74) Agent: **BACA, Helen S.** et al.; c/o Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (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).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

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))

(88) Date of publication of the international search report:

27 June 2024 (27.06.2024)



WO 2024/108011 A3

(54) Title: SYNTHESIS AND HYDROGENATION OF METATHESIS DIMERS

(57) Abstract: Provided herein are methods of synthesizing cyclic alkanes, wherein cyclic alkene dimers are formed using a metathesis catalyst, followed by hydrogenation of said cyclic alkene dimers to yield cyclic alkanes.