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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
28 August 2025 (28.08.2025)

WIPO | PCT

(10) International Publication Number
WO 2025/176881 A1

(51) International Patent Classification:
B01J 31/22 (2006.01) *C08G 64/32* (2006.01)

(21) International Application Number:
PCT/EP2025/054795

(22) International Filing Date:
21 February 2025 (21.02.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2402519.9 22 February 2024 (22.02.2024) GB

(71) Applicant: **ECONIC TECHNOLOGIES LTD** [GB/GB]; Block 19s, Alderley Park, Nether Alderley, Macclesfield Cheshire SK10 4TG (GB).

(72) Inventors: **KEMBER, Michael**; c/o Econic Technologies Ltd, Block 19s, Alderley Park, Nether Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **BLACKBURN, Anthea**; c/o Econic Technologies Ltd, Block 19s, Alderley Park, Nether Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

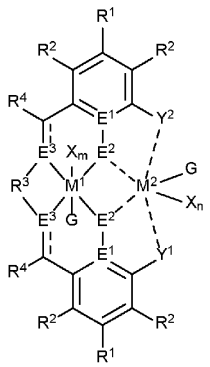
(74) Agent: **BRAND MURRAY FULLER LLP**; 50 Eastcastle Street, London Greater London W1W 8EA (GB).

(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, UY, 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).

Published:
— *with international search report (Art. 21(3))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

(54) Title: PROCESS



(I)

(57) Abstract: The present invention provides a bimetallic heterodinuclear catalyst of formula (I), and systems comprising these catalysts for polymerising carbon dioxide and an epoxide, and/or an epoxide and an anhydride. The catalyst is of formula (I) wherein M^1 and M^2 are independently selected from transition metals and/or alkali or alkaline earth metals, wherein when M^1 is a transition metal, M^2 is an alkali or alkaline earth metal, or wherein when M^1 is an alkali or an alkaline earth metal, M^2 is a transition metal. A process for the reaction of carbon dioxide with an epoxide; and/or an epoxide and an anhydride in the presence of the catalyst is also described.

WO 2025/176881 A1