

Title (en)
REDUCING CARBON DIOXIDE TO PRODUCTS

Title (de)
REDUZIERUNG DES KOHLENDIOXIDANTEILS IN PRODUKTEN

Title (fr)
RÉDUCTION DU DIOXYDE DE CARBONE EN PRODUITS

Publication
EP 2598671 A4 20140625 (EN)

Application
EP 11813101 A 20110727

Priority

- US 84622110 A 20100729
- US 2011045515 W 20110727

Abstract (en)
[origin: US2011114502A1] A method for reducing carbon dioxide to one or more products is disclosed. The method may include steps (A) to (C). Step (A) may bubble the carbon dioxide into a solution of an electrolyte and a catalyst in a divided electrochemical cell. The divided electrochemical cell may include an anode in a first cell compartment and a cathode in a second cell compartment. The cathode generally reduces the carbon dioxide into the products. Step (B) may vary at least one of (i) which of the products is produced and (ii) a faradaic yield of the products by adjusting one or more of (a) a cathode material and (b) a surface morphology of the cathode. Step (C) may separate the products from the solution.

IPC 8 full level
C25B 3/25 (2021.01)

CPC (source: EP KR US)
C25B 1/23 (2021.01 - KR); **C25B 1/55** (2021.01 - EP KR US); **C25B 3/25** (2021.01 - EP KR US); **C25B 9/19** (2021.01 - KR);
C25B 11/046 (2021.01 - KR)

Citation (search report)

- [Y] DE 2301032 A1 19740725 - DECHEMA
- [XP] WO 2010088524 A2 20100805 - UNIV PRINCETON [US], et al
- [XPL] US 2011114502 A1 20110519 - COLE EMILY BARTON [US], et al
- [XYI] SESHADRI G ET AL: "A new homogeneous electrocatalyst for the reduction of carbon dioxide to methanol at low overpotential", JOURNAL OF ELECTROANALYTICAL CHEMISTRY AND INTERFACIAL ELECTROCHEMISTRY, ELSEVIER, AMSTERDAM, NL, vol. 372, no. 1-2, 8 July 1994 (1994-07-08), pages 145 - 150, XP026577882, ISSN: 0022-0728, [retrieved on 19940708], DOI: 10.1016/0022-0728(94)03300-5
- [XYI] EMILY BARTON COLE ET AL: "Using a One-Electron Shuttle for the Multielectron Reduction of CO 2 to Methanol: Kinetic, Mechanistic, and Structural Insights", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 132, no. 33, 28 July 2010 (2010-07-28), pages 11539 - 11551, XP055101739, ISSN: 0002-7863, DOI: 10.1021/ja1023496
- [Y] MARIA JITARU: "ELECTROCHEMICAL CARBON DIOXIDE REDUCTION - FUNDAMENTAL AND APPLIED TOPICS (REVIEW)", JOURNAL OF THE UNIVERSITY OF CHEMICAL TECHNOLOGY AND METALLURGY, vol. 42, no. 4, 1 November 2007 (2007-11-01), pages 333 - 344, XP055116722, ISSN: 1311-7629
- See references of WO 2012015905A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 2011114502 A1 20110519; AU 2011282767 A1 20130214; AU 2011282767 B2 20150409; AU 2011282767 C1 20150903;
BR 112013002221 A2 20170926; CA 2805840 A1 20120202; CN 103140608 A 20130605; CN 103140608 B 20160810;
EP 2598671 A1 20130605; EP 2598671 A4 20140625; JP 2013536319 A 20130919; KR 20140012017 A 20140129;
WO 2012015905 A1 20120202

DOCDB simple family (application)

US 84622110 A 20100729; AU 2011282767 A 20110727; BR 112013002221 A 20110727; CA 2805840 A 20110727;
CN 201180036854 A 20110727; EP 11813101 A 20110727; JP 2013521930 A 20110727; KR 20137005179 A 20110727;
US 2011045515 W 20110727