

Title (en)
METHOD AND SYSTEM FOR TREATING CARBON GASES BY ELECTROCHEMICAL HYDROGENATION IN ORDER TO OBTAIN A CXHYOZ COMPOUND

Title (de)
VERFAHREN UND SYSTEM ZUR BEHANDLUNG VON KOHLENSTOFFGASEN DURCH ELEKTROCHEMISCHE HYDRIERUNG ZUR HERSTELLUNG EINER CXHYOZ-VERBINDUNG

Title (fr)
PROCÉDÉ ET SYSTÈME DE TRAITEMENT DE GAZ CARBONÉS PAR HYDROGÉNATION ÉLECTROCHIMIQUE POUR L'OBTENTION D'UN COMPOSÉ DE TYPE CXHYOZ

Publication
EP 2766514 A2 20140820 (FR)

Application
EP 12780242 A 20121011

Priority
• FR 1159223 A 20111012
• FR 2012052319 W 20121011

Abstract (en)
[origin: WO2013054053A2] The present invention relates to a method for treating CO₂ by electrochemical hydrogenation, said method comprising: a step of transferring heat from a heating means (160) towards a proton-conductive electrolyser (110) such that said electrolyser (110) reaches an operating temperature suitable for electrolysing steam; a step of feeding the CO₂ produced by said heating means (160) at the cathode of the electrolyser; a step of feeding the steam at the anode; a step of oxidising the steam at the anode; a step of generating protonated species in the membrane with proton conduction; a step of migrating said protonated species into said proton-conductive membrane; a step of reducing said protonated species on the surface of the cathode into reactive hydrogen atoms; and a step of hydrogenating the CO₂ on the surface of the cathode of the electrolyser (110) by means of said reactive hydrogen atoms, said hydrogenation step enabling the formation of C_xH_yO_z compounds, where $x \geq 1$; $0 < y \leq (2x+2)$ and $0 \leq z \leq 2x$.

IPC 8 full level
C25B 3/25 (2021.01); **B01D 53/32** (2006.01); **C25B 15/00** (2006.01); **C25B 15/08** (2006.01)

CPC (source: EP US)
C25B 1/04 (2013.01 - EP US); **C25B 3/25** (2021.01 - EP US); **C25B 15/00** (2013.01 - EP US); **C25B 15/08** (2013.01 - EP US); **B01D 53/326** (2013.01 - EP US); **B01D 2251/202** (2013.01 - EP US); **B01D 2257/502** (2013.01 - EP US); **B01D 2257/504** (2013.01 - EP US); **Y02E 60/36** (2013.01 - EP US); **Y02P 20/151** (2015.11 - EP US)

Citation (search report)
See references of WO 2013054053A2

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)
WO 2013054053 A2 20130418; **WO 2013054053 A3 20130613**; BR 112014008751 A2 20170425; CN 104024479 A 20140903; EP 2766514 A2 20140820; FR 2981369 A1 20130419; FR 2981369 B1 20131115; IN 3032DEN2014 A 20150508; JP 2014528519 A 20141027; RU 2014118837 A 20151120; US 2014291162 A1 20141002

DOCDB simple family (application)
FR 2012052319 W 20121011; BR 112014008751 A 20121011; CN 201280058046 A 20121011; EP 12780242 A 20121011; FR 1159223 A 20111012; IN 3032DEN2014 A 20140416; JP 2014535150 A 20121011; RU 2014118837 A 20121011; US 201214350837 A 20121011