

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  
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Application  
**EP 12780242 A 20121011**

Priority  
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Abstract (en)  
[origin: WO2013054053A2] The present invention relates to a method for treating CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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<sub>x</sub>H<sub>y</sub>O<sub>z</sub> compounds, where  $x \geq 1$ ;  $0 < y \leq (2x+2)$  and  $0 \leq z \leq 2x$ .

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