

Title (en)  
CARBON DIOXIDE ELECTROLYSIS DEVICE AND METHOD OF OPERATING CARBON DIOXIDE ELECTROLYSIS DEVICE

Title (de)  
KOHLENDIOXIDELEKTROLYSEVORRICHTUNG UND VERFAHREN ZUM BETRIEB EINER KOHLENDIOXIDELEKTROLYSEVORRICHTUNG

Title (fr)  
DISPOSITIF D'ÉLECTROLYSE DE DIOXYDE DE CARBONE ET PROCÉDÉ DE FONCTIONNEMENT D'UN DISPOSITIF D'ÉLECTROLYSE DE DIOXYDE DE CARBONE

Publication  
**EP 4060092 A1 20220921 (EN)**

Application  
**EP 21193516 A 20210827**

Priority  
JP 2021044811 A 20210318

Abstract (en)  
A carbon dioxide electrolysis device includes: a cathode configured to reduce carbon dioxide and thus form a carbon compound; an anode configured to oxidize water and thus generate oxygen; a cathode gas flow path facing on the cathode and configured to supply gas containing carbon dioxide; an anode solution flow path facing on the anode and configured to supply an electrolytic solution containing water; and a separator provided between the anode and the cathode. An aspect ratio of the cathode gas flow path is greater than 1 and 3 or less. In a cross-section along a direction perpendicular to a facing surface between the cathode and the cathode gas flow path in the cathode gas flow path, a fluid mean depth M of the cathode gas flow path and a depth h of the cathode gas flow path satisfy a formula:  $h/8 \leq M < h/4$ .

IPC 8 full level  
**C25B 1/50** (2021.01); **C25B 3/26** (2021.01); **C25B 9/19** (2021.01); **C25B 9/60** (2021.01); **C25B 15/08** (2006.01)

CPC (source: EP US)  
**C25B 1/23** (2021.01 - US); **C25B 1/50** (2021.01 - EP); **C25B 3/26** (2021.01 - EP); **C25B 9/19** (2021.01 - EP); **C25B 9/60** (2021.01 - EP); **C25B 9/65** (2021.01 - US); **C25B 11/061** (2021.01 - US); **C25B 15/02** (2013.01 - US); **C25B 15/08** (2013.01 - EP US)

Citation (applicant)  
• US 7659024 B2 20100209 - MATSUMOTO TOSHIHIRO [JP], et al  
• US 7087337 B2 20060808 - TRABOLD THOMAS A [US], et al

Citation (search report)  
• [I] EP 3378969 A1 20180926 - TOSHIBA KK [JP]  
• [A] EP 3623501 A1 20200318 - TOSHIBA KK [JP]  
• [A] WO 2020240218 A1 20201203 - UNIV SZEGEDI [HU], et al

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 4060092 A1 20220921**; JP 2022143987 A 20221003; US 2022298652 A1 20220922

DOCDB simple family (application)  
**EP 21193516 A 20210827**; JP 2021044811 A 20210318; US 202117406256 A 20210819