

Title (en)  
ELECTROCHEMICAL REDUCTION DEVICE, AND METHOD FOR PRODUCING HYDROGENATED PRODUCT OF AROMATIC HYDROCARBON COMPOUND OR NITROGEN-CONTAINING HETEROCYCLIC AROMATIC COMPOUND

Title (de)  
VORRICHTUNG FÜR ELEKTROCHEMISCHE REDUKTION UND VERFAHREN ZUR HERSTELLUNG EINES HYDRIERTEN PRODUKTES AUS EINER AROMATISCHEN KOHLENWASSERSTOFFVERBINDUNG ODER STICKSTOFFHALTIGEN HETEROCYCLISCHEN AROMATISCHEN VERBINDUNG

Title (fr)  
DISPOSITIF DE RÉDUCTION ÉLECTROCHIMIQUE, ET PROCÉDÉ DE PRODUCTION DE PRODUIT HYDROGÉNÉ DE COMPOSÉ HYDROCARBURE AROMATIQUE OU DE COMPOSÉ AROMATIQUE HÉTÉROCYCLIQUE CONTENANT DE L'AZOTE

Publication  
**EP 2837712 A4 20151202 (EN)**

Application  
**EP 13767471 A 20130329**

Priority  
• JP 2012075635 A 20120329  
• JP 2013002187 W 20130329

Abstract (en)  
[origin: US2015008138A1] An electrochemical reduction device is provided with an electrode unit, a power control unit, an organic material storage tank, a water storage tank, a gas-liquid separator, and a control unit. The electrode unit has an electrolyte membrane, a reduction electrode, and an oxygen evolving electrode. The electrolyte membrane is formed of an ionomer. A reduction catalyst used for the reduction electrode contains at least one of Pt and Pd. The oxygen evolving electrode contains catalysts of noble metal oxides such as RuO<sub>2</sub>, IrO<sub>2</sub>, and the like. The control unit controls the power control unit such that a relationship,  $V_{HER} - 20 \text{ mV} \leq V_{CA} \leq V_{VTRR}$ , can be satisfied when the potential at a reversible hydrogen electrode, the standard redox potential of an aromatic hydrocarbon compound or an N-containing heterocyclic aromatic compound, and the potential of the reduction electrode are expressed as V<sub>HER</sub>, V<sub>VTRR</sub>, and V<sub>CA</sub>, respectively.

IPC 8 full level  
**C25B 3/04** (2006.01); **C25B 3/25** (2021.01); **C25B 9/10** (2006.01); **C25B 9/17** (2021.01); **C25B 9/23** (2021.01); **C25B 15/02** (2006.01)

CPC (source: EP US)  
**C25B 3/25** (2021.01 - EP US); **C25B 9/17** (2021.01 - US); **C25B 9/23** (2021.01 - EP US); **C25B 15/02** (2013.01 - EP US)

Citation (search report)  
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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 2015008138 A1 20150108**; AR 090576 A1 20141119; AU 2013238682 A1 20140925; CA 2868594 A1 20131003; CN 104204304 A 20141210; EP 2837712 A1 20150218; EP 2837712 A4 20151202; JP 6113715 B2 20170412; JP WO2013145782 A1 20151210; WO 2013145782 A1 20131003

DOCDB simple family (application)  
**US 201414493396 A 20140923**; AR P130101071 A 20130403; AU 2013238682 A 20130329; CA 2868594 A 20130329; CN 201380017673 A 20130329; EP 13767471 A 20130329; JP 2013002187 W 20130329; JP 2014507451 A 20130329