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 RuO2, IrO2, and the like. The control unit controls the power control unit such that a relationship, VHER−20 mV≦VCA≦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 VHER, VTRR, and VCA, 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

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