

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

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Application
EP 13767471 A 20130329

Priority
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Abstract (en)
An electrochemical reduction device 10 is provided with an electrode unit 100, a power control unit 20, an organic material storage tank 30, a water storage tank 40, a gas-liquid separator 50, and a control unit 60. The electrode unit 100 has an electrolyte membrane 110, a reduction electrode 120, and an oxygen evolving electrode 130. The electrolyte membrane 110 is formed of an ionomer. A reduction catalyst used for the reduction electrode 120 contains at least one of Pt and Pd. The oxygen evolving electrode 130 contains catalysts of noble metal oxides such as RuO₂, IrO₂, and the like. The control unit 60 controls the power control unit 20 such that a relationship, $V_{HER} - 20 \text{ mV} \leq V_{CA} - V_{TRR}$, 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 120 are expressed as V_{HER} , V_{TRR} , and V_{CA} , respectively.

IPC 8 full level
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