

Title (en)

PROCESS AND USE OF COPPER BASED ELECTROCATALYST MATERIAL IN SUPERSATURATED ELECTROLYTE

Title (de)

VERFAHREN UND VERWENDUNG EINES ELEKTROKATALYTISCHEN MATERIALS AUF KUPFERBASIS IN EINEM ÜBERSÄTTIGTEN ELEKTROLYTEN

Title (fr)

PROCÉDÉ ET UTILISATION D'UN MATÉRIAU D'ÉLECTROCATALYSEUR À BASE DE CUIVRE DANS UN ÉLECTROLYTE SURSATURÉ

Publication

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Application

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Priority

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Abstract (en)

The present invention belongs to the field of catalytic chemistry, and more specifically to catalyzed reduction chemical reactions, preferably the reduction of CO₂ into small molecules. The present invention relates to a new copper based electrocatalyst material and its method of preparation comprising a step of in-situ electrodeposition or co-electrodeposition, in an electrolyte solution, of at least one catalytic metal in the presence of a gas comprising CO₂ under electroreduction conditions onto a conductive support, wherein the at least one catalytic metal comprises copper (Cu) and is electrodeposited onto the conductive support and wherein the gas is supersaturated (i.e. with CO₂ concentrations above the saturation limit) in the electrolyte solution and its use thereof in a reduction chemical reaction, preferably in the reduction of CO₂ into CO or other small molecules such as gaseous hydrocarbons (methane, ethylene) or liquid molecules (ethanol, formic acid). The invention also relates to the process of manufacture of said catalyst compound. The invention thus also relates to a process electrochemical conversion of CO₂ to small molecules.

IPC 8 full level

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