Title (en)

REDOX FLOW BATTERY FOR STORING ELECTRICAL ENERGY IN UNDERGROUND STORAGE MEANS, AND USE THEREOF

Title (de)

REDOX-FLOW-BATTERIE ZUR SPEICHERUNG VON ELEKTRISCHER ENERGIE IN ERDSPEICHERN UND DEREN VERWENDUNG

Title (fr)

BATTERIE REDOX POUR LE STOCKAGE D'ÉNERGIE ÉLECTRIQUE DANS DES RÉSERVOIRS SOUTERRAINS ET LEUR UTILISATION

Publication

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Application

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Abstract (en)

[origin: WO2020108788A2] The present invention relates to a redox flow battery for storing electrical energy containing a reaction cell having two electrode chambers for catholyte and anolyte, each of which is connected to at least one liquid storage means, which electrode chambers are separated by a membrane, are provided with electrodes, and are each filled with electrolyte solutions containing redox-active components dissolved or dispersed in an aqueous electrolyte solvent, as well as containing conducting salts dissolved therein, and potentially further additives. A second embodiment relates to a redox-flow battery for storing electrical energy, containing a reaction cell having an electrode chamber for an electrolyte solution which is connected to at least one liquid storage means, the electrode chamber being equipped with a cathode and an anode and being filled with electrolyte solution containing redox-active components dissolved or dispersed in an aqueous electrolyte solvent, as well as containing conducting salts dissolved therein, and potentially further additives. The redox-flow cells are characterised in that • the at least one liquid storage means is an underground storage means, in which temperatures of at least 30°C prevail, in that • the concentration of the salts dissolved in the electrolyte solutions is at least 10 wt.%, and in that • the catholyte and the electrolyte solution contain selected redox-active and temperature-stable components. In the first embodiment, the anolyte contains a water-soluble redox-active component and in the second embodiment the anolyte and the electrolyte solution contain a zinc salt.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2020108788A2

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