

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

**EP 3888163 A2 20211006 (DE)**

Application

**EP 19817134 A 20191127**

Priority

- DE 102018009363 A 20181129
- EP 2019000324 W 20191127

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

**H01M 4/38** (2006.01); **H01M 4/42** (2006.01); **H01M 4/60** (2006.01); **H01M 8/18** (2006.01)

CPC (source: EP US)

**H01M 4/368** (2013.01 - US); **H01M 4/60** (2013.01 - EP US); **H01M 8/188** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP)

Citation (search report)

See references of WO 2020108788A2

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**WO 2020108788 A2 20200604**; **WO 2020108788 A3 20200806**; CN 113228348 A 20210806; DE 102018009363 A1 20200604; EP 3888163 A2 20211006; MA 54285 A 20220309; US 2022020990 A1 20220120

DOCDB simple family (application)

**EP 2019000324 W 20191127**; CN 201980086755 A 20191127; DE 102018009363 A 20181129; EP 19817134 A 20191127; MA 54285 A 20191127; US 201917297777 A 20191127