

Title (en)

BATTERY AND METHOD FOR THERMALLY REGULATING A BATTERY ONBOARD AN ELECTRIC VEHICLE

Title (de)

BATTERIE UND VERFAHREN ZUR THERMISCHEN REGELUNG EINER BATTERIE AN BORD EINES ELEKTROFAHRZEUGS

Title (fr)

BATTERIE ET PROCÉDÉ DE RÉGULATION THERMIQUE D'UNE BATTERIE EMBARQUÉE SUR UN VÉHICULE ÉLECTRIQUE

Publication

EP 3939114 A1 20220119 (FR)

Application

EP 20710244 A 20200218

Priority

- FR 1902683 A 20190315
- FR 2020050301 W 20200218

Abstract (en)

[origin: WO2020188165A1] Disclosed is a battery (1) configured to electrically power at least one actuator or to receive electrical energy from at least one onboard actuator onboard an electrically autonomous vehicle, the battery comprising at least one battery element (10, 11, 12, ..., 20, 21, 22), the at least one battery element (10, 11, 12, ..., 20, 21, 22), being configured to store or restore electrical energy, the battery also comprising a thermoelectric device that is electrically connected to the at least one battery element, the thermoelectric device comprising: - a first heat-conducting portion (2) placed in contact with the at least one battery element (10, 11, 12, ..., 20, 21, 22), - at least one thermoelectric cell (31, 32), placed in contact with the heat-conducting portion (2), the at least one thermoelectric cell (31, 32), being configured to produce a first positive or negative thermal power as a function of a first electrical current (I) passing through the at least one thermoelectric cell (31, 32), the first electrical current (I) being provided by the at least one battery element (10, 11, 12, ..., 20, 21, 22) - a second heat-conducting portion (9) placed in contact with the at least one thermoelectric cell (31, 32) and configured to dissipate a second thermal power generated by the at least one battery element (10, 11, 12, ..., 20, 21, 22). - at least one first sensor (C1) configured to measure a temperature (T) of the at least one battery element (10, 11, 12, ..., 20, 21, 22), - a regulation module (6), the at least one first sensor (C1) being coupled to the regulation module (6), the regulation module (6) being configured to control the first electrical current (I) as a function of the target temperature (Tc) of the at least one battery element (10, 11, 12, ..., 20, 21, 22) such that a variation between the temperature (T) measured by the at least one first sensor (C1) and the target temperature (Tc) remains below a predetermined threshold. Figure

IPC 8 full level

H01M 10/625 (2014.01); **H01M 10/613** (2014.01); **H01M 10/615** (2014.01); **H01M 10/63** (2014.01); **H01M 10/635** (2014.01); **H01M 10/6554** (2014.01); **H01M 10/6572** (2014.01); **H01M 50/209** (2021.01)

CPC (source: EP US)

H01M 10/613 (2015.04 - EP); **H01M 10/615** (2015.04 - EP); **H01M 10/625** (2015.04 - EP US); **H01M 10/63** (2015.04 - EP US); **H01M 10/635** (2015.04 - EP); **H01M 10/6554** (2015.04 - EP); **H01M 10/6572** (2015.04 - EP US); **H01M 50/209** (2021.01 - EP US); **H01M 10/482** (2013.01 - EP US); **H01M 10/486** (2013.01 - EP US); **H01M 2220/20** (2013.01 - US); **Y02E 60/10** (2013.01 - EP)

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)

FR 3093863 A1 20200918; **FR 3093863 B1 20220114**; CN 113767508 A 20211207; CN 113767508 B 20240924; EP 3939114 A1 20220119; US 12015137 B2 20240618; US 2022158274 A1 20220519; WO 2020188165 A1 20200924

DOCDB simple family (application)

FR 1902683 A 20190315; CN 202080021606 A 20200218; EP 20710244 A 20200218; FR 2020050301 W 20200218; US 202017439614 A 20200218