

Title (en)

SOLID-STATE HYBRID ELECTROLYTES, METHODS OF MAKING SAME, AND USES THEREOF

Title (de)

FESTKÖRPERHYBRIDELEKTROLYTEN, VERFAHREN ZUR HERSTELLUNG DAVON UND VERWENDUNGEN DAVON

Title (fr)

ÉLECTROLYTES HYBRIDES À L'ÉTAT SOLIDE, PROCÉDÉS DE FABRICATION DE CES DERNIERS ET UTILISATIONS DE CES DERNIERS

Publication

**EP 3602657 A4 20201223 (EN)**

Application

**EP 18778216 A 20180329**

Priority

- US 201762478396 P 20170329
- US 2018025289 W 20180329

Abstract (en)

[origin: WO2018183771A1] Provided are solid-state hybrid electrolytes. The hybrid electrolytes have a polymeric material layer, which may be a polymer/copolymer layer or a gel polymer/copolymer layer, disposed on at least a portion of an exterior surface or all of the exterior surfaces of a solid-state electrolyte. A hybrid electrolyte can form an interface with an electrode of an ion-conducting battery that exhibits desirable properties. The solid-state electrolyte can comprise a monolithic SSE body, a mesoporous SSE body, or an inorganic SSE having fibers or strands, which may be aligned. In the case of solid-state electrolytes that have strands, the strands can be formed using a sacrificial template. The hybrid solid-state electrolytes can be used in ion-conducting batteries, which may be flexible, ion-conducting batteries.

IPC 8 full level

**H01M 4/36** (2006.01); **H01M 2/16** (2006.01); **H01M 4/46** (2006.01); **H01M 10/052** (2010.01); **H01M 10/054** (2010.01); **H01M 10/056** (2010.01); **H01M 10/0562** (2010.01); **H01M 10/42** (2006.01)

CPC (source: EP KR)

**H01M 10/052** (2013.01 - EP); **H01M 10/054** (2013.01 - EP); **H01M 10/056** (2013.01 - EP KR); **H01M 10/0562** (2013.01 - KR); **H01M 10/0565** (2013.01 - KR); **H01M 50/446** (2021.01 - EP); **H01M 2300/0068** (2013.01 - KR); **H01M 2300/0082** (2013.01 - KR); **H01M 2300/0091** (2013.01 - EP); **H01M 2300/0094** (2013.01 - EP KR); **Y02E 60/10** (2013.01 - EP)

Citation (search report)

- [X] WO 2016069749 A1 20160506 - UNIV MARYLAND [US]
- [XP] KUN (KELVIN) FU ET AL: "Three-dimensional bilayer garnet solid electrolyte based high energy density lithium metal-sulfur batteries", ENERGY & ENVIRONMENTAL SCIENCE, vol. 10, no. 7, 10 May 2017 (2017-05-10), Cambridge, pages 1568 - 1575, XP055749102, ISSN: 1754-5692, DOI: 10.1039/C7EE01004D
- See also references of WO 2018183771A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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**US 2018025289 W 20180329**; EP 18778216 A 20180329; JP 2019553946 A 20180329; JP 2023030805 A 20230301; KR 20197031941 A 20180329; KR 20247011551 A 20180329