

Title (en)

COMPOSITE MATERIALS, PRODUCTION THEREOF, AND USE THEREOF IN ELECTROCHEMICAL CELLS

Title (de)

KOMPOSITMATERIALIEN, IHRE HERSTELLUNG UND VERWENDUNG IN ELEKTROCHEMISCHEN ZELLEN

Title (fr)

MATÉRIAUX COMPOSITES, LEUR FABRICATION ET LEUR UTILISATION DANS DES CELLULES ÉLECTROCHIMIQUES

Publication

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Application

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Abstract (en)

[origin: WO2013136223A1] The present invention relates to new composite materials, in the production of which at least (A) at least one polymer containing fluorine, (B) carbon in a modification that comprises at least 60% sp²-hybridized C atoms, and (C) at least one component containing sulfur are used as starting components, comprising a mixture that is thermally treated in a method step, which mixture contains starting components (A) and (B) or starting components (A) and (C) or starting components (A), (B), and (C), wherein the fraction of the sum of the weight fractions of starting components (A) and (B), (A) and (C), or (A), (B), and (C) in the particular mixture before the thermal treatment with respect to the total weight of the mixture before the thermal treatment is 90 to 100%, and wherein the thermal treatment of the mixture containing starting components (A) and (B), (A) and (C), or (A), (B), and (C) is performed at a temperature of at least 115 °C. The present invention further relates to a method for producing composite materials according to the invention, cathode materials for electrochemical cells containing composite materials according to the invention, corresponding electrochemical cells, and special thermally treated mixtures containing at least starting components (A) and (C).

IPC 8 full level

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Citation (search report)

- [XP] WO 2013021299 A1 20130214 - BASF SE [DE], et al
- [XP] WO 2012137119 A2 20121011 - BASF SE [DE], et al
- [X] WO 9965101 A1 19991216 - MOLTECH CORP [US], et al
- [X] WO 2008070059 A2 20080612 - SION POWER CORP [US], et al
- [X] US 4261853 A 19810414 - KOONTZ RALPH F, et al
- [X] DE 102010030887 A1 20120105 - FRAUNHOFER GES FORSCHUNG [DE]
- [X] US 2002009639 A1 20020124 - MIYAKE MASAHIRO [JP], et al
- [X] EP 0936687 A2 19990818 - CANON KK [JP]
- [X] DATABASE CA [online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 7 February 1987 (1987-02-07), NAKAMURA, HIDENORI ET AL: "Manufacture of titanium sulfide cathode of low packing density", XP002742607, retrieved from STN Database accession no. 1987:36087 & JP S61190870 A 19860825 - SHOWA DENKO KK
- See references of WO 2013136223A1

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