

Title (en)

METHOD FOR MANUFACTURING A POROUS ELECTRODE, AND BATTERY CONTAINING SUCH AN ELECTRODE

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER PORÖSEN ELEKTRODE UND BATTERIE MIT EINER SOLCHEN ELEKTRODE

Title (fr)

PROCÉDÉ DE FABRICATION D'UNE ÉLECTRODE POREUSE, ET BATTERIE CONTENANT UNE TELLE ÉLECTRODE

Publication

**EP 4143901 A1 20230308 (FR)**

Application

**EP 21722302 A 20210428**

Priority

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Abstract (en)

[origin: CA3175605A1] A method for manufacturing an electrochemical device selected from the group formed by: lithium-ion batteries having a capacity higher than 1 mAh, capacitors, supercapacitors, resistors, inductors, transistors, photovoltaic cells, and fuel cells, using a method for manufacturing a porous electrode comprising a porous layer deposited on a substrate, said layer having a porosity of between 20% and 60% by volume and pores with an average diameter smaller than 50 nm, said method for manufacturing said porous electrode being characterized in that it comprises: (a) providing a substrate and a colloidal suspension comprising aggregates or agglomerates of monodisperse primary nanoparticles of an electrode active material, having an average primary diameter D<sub>so</sub> of between 2 and 60 nm, said aggregates or agglomerates having an average diameter D<sub>so</sub> of between 50 nm and 300 nm, (b) depositing, on said substrate, a layer originating from said colloidal suspension, using a technique selected from the group formed by: electrophoresis, printing processes, and a coating technique; (c) drying said layer and consolidating it, by pressing and/or heating, to obtain a mesoporous layer, (d) depositing, on and inside the pores of said layer, a coating of an electron-conducting material, or using a porous electrode capable of being obtained using said method for manufacturing a porous electrode.

IPC 8 full level

**H01M 4/04** (2006.01); **H01L 31/0224** (2006.01); **H01L 31/18** (2006.01); **H01M 4/131** (2010.01); **H01M 4/1315** (2010.01); **H01M 4/136** (2010.01); **H01M 4/1391** (2010.01); **H01M 4/13915** (2010.01); **H01M 4/1397** (2010.01); **H01M 4/485** (2010.01); **H01M 4/58** (2006.01); **H01M 4/62** (2006.01); **H01M 4/86** (2006.01); **H01M 10/052** (2010.01); **H01M 10/24** (2006.01); **H01M 10/39** (2006.01); **H01M 12/06** (2006.01)

CPC (source: EP IL KR US)

**H01G 9/2036** (2013.01 - IL KR); **H01M 4/0404** (2013.01 - EP IL KR US); **H01M 4/0409** (2013.01 - EP IL KR US); **H01M 4/0414** (2013.01 - EP IL KR); **H01M 4/0416** (2013.01 - EP IL KR); **H01M 4/0421** (2013.01 - EP IL KR); **H01M 4/043** (2013.01 - US); **H01M 4/0457** (2013.01 - EP IL KR); **H01M 4/131** (2013.01 - IL KR US); **H01M 4/1315** (2013.01 - IL KR); **H01M 4/136** (2013.01 - IL KR); **H01M 4/1391** (2013.01 - IL KR); **H01M 4/13915** (2013.01 - IL KR); **H01M 4/1397** (2013.01 - IL KR); **H01M 4/485** (2013.01 - IL KR US); **H01M 4/505** (2013.01 - US); **H01M 4/525** (2013.01 - US); **H01M 4/54** (2013.01 - US); **H01M 4/56** (2013.01 - US); **H01M 4/581** (2013.01 - IL KR); **H01M 4/5815** (2013.01 - US); **H01M 4/582** (2013.01 - IL KR); **H01M 4/5825** (2013.01 - IL KR); **H01M 4/624** (2013.01 - EP IL KR); **H01M 4/625** (2013.01 - IL US); **H01M 4/8605** (2013.01 - EP IL KR US); **H01M 4/8652** (2013.01 - EP IL KR); **H01M 10/052** (2013.01 - EP IL); **H01M 10/0525** (2013.01 - US); **H01M 10/054** (2013.01 - US); **H01M 10/24** (2013.01 - EP IL); **H01M 10/3909** (2013.01 - EP IL); **H01M 12/06** (2013.01 - EP IL); **H01M 12/08** (2013.01 - US); **H01G 9/2036** (2013.01 - EP); **H01M 4/131** (2013.01 - EP); **H01M 4/1315** (2013.01 - EP); **H01M 4/136** (2013.01 - EP); **H01M 4/1391** (2013.01 - EP); **H01M 4/13915** (2013.01 - EP); **H01M 4/1397** (2013.01 - EP); **H01M 4/485** (2013.01 - EP); **H01M 4/581** (2013.01 - EP); **H01M 4/582** (2013.01 - EP); **H01M 4/5825** (2013.01 - EP); **H01M 4/625** (2013.01 - EP); **H01M 2004/021** (2013.01 - US); **H01M 2004/028** (2013.01 - US); **H01M 2220/20** (2013.01 - US); **Y02E 60/10** (2013.01 - EP IL); **Y02E 60/13** (2013.01 - EP IL); **Y02P 70/50** (2015.11 - EP IL)

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