

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

A method for manufacturing an electrochemical device selected from the group consisting of: lithium ion batteries with a capacity greater than 1 mAh, capacitors, supercapacitors, resistors, inductors, transistors, photovoltaic cells, fuel cells, implementing a process for manufacturing a porous electrode comprising a porous layer deposited on a substrate, said layer having a porosity comprised between 20% and 60% by volume and pores with an average diameter of less than 50 nm, said method for manufacturing said porous electrode being characterized in that :

- (a) provision is made of a substrate and a colloidal suspension comprising aggregates or agglomerates of monodisperse primary nanoparticles of an active electrode material, having an average primary diameter D_{50} comprised between 2 and 60 nm, said aggregates or agglomerates having an average diameter D_{50} comprised between 50 nm and 300 nm,
- (b) a layer is deposited from said colloidal suspension on said substrate by a technique selected from the group formed of: electrophoresis, printing techniques and a coating technique;
- (c) said layer is dried and it is consolidated, by pressing and/or heating, to obtain a mesoporous layer,
- (d) depositing, on and inside the pores of said layer, a coating of an electronically conductive material.

or implementing a porous electrode that can be obtained by said method for manufacturing a porous electrode.

No suitable figure