

NEW PROCESS FOR THE MANUFACTURE OF ELECTRODES FROM SUPERPOROUS NANOSTRUCTURED CARBON MATERIALS

P PATENTED TECHNOLOGY



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ABSTRACT

Researchers from Alicante and Malaga University have developed a new process for the manufacture of electrodes from superporous nanostructured carbon materials.

The process here described uses electrospraying technique to deposit a suspension of a carbon material with a binder, over a current collector. This process greatly facilitates processing superporous nanostructured carbon materials due to its high efficiency and less complexities compared to conventional techniques.

The electrodes or microelectrodes obtained by this process are of great interest for their applications in energy storage or analytical sensors in commercial devices.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

COMPETITIVE ADVANTAGES

The method referred in this invention provides the following advantages:

- Solve the complexity and other problems existing in other procedures used to generate electrodes and microelectrodes.
- Carbon materials are selectively deposited, as homogeneous layers, with controllable thickness.
- The process has a high degree of reproducibility, particularly compared with the blade coating technique.
- Does not require subsequent pressing of the electrode to increase the degree of packing.
- Does not require a subsequent heat treatment at elevated temperatures.
- The use of the electrode as current collector increases the efficiency of the process, in terms of selectivity of the deposit on the electrode.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

The process here described is simpler than those available nowadays. It reduces the number of necessary stages and his complexity to obtain electrodes from superporous nanostructured carbon materials at room temperature and pressure. Only it needs a later step of drying at low temperature to remove the used solvent.

The invention enables the manufacture of electrodes and microelectrodes for electrochemical and analytical applications, such as energy storage, or as analytical sensors in commercial devices.

MARKET APPLICATIONS

The present invention belongs to the field of electrochemistry. Particularly, the invention enables the manufacture of electrodes and microelectrodes for electrochemical and analytical applications, such as energy storage, or as analytical sensors in commercial devices.

COLLABORATION SOUGHT

Companies are looked interested in acquiring this technology for his commercial exploitation by means of agreement of license of the patent.
