

Nanostructured conducting polymer arrays using colloid template for high power energy storage devices

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There have been numerous studies of conducting polymers as the electrode materials of supercapacitors, such as PANI, PPY, PTP, etc., because of its conductivity, charge capacity, electrochemical activity and light weight. In this study, the electrochemical properties such as cyclicvoltametry(CV), A.C. Impedance and charge-discharge behavior of polypyrrol arrays coated FTO glass were investigated for the first time. And nanostructured polypyrrol arrays using PS colloid template were investigated, too. The specific capacitances of the polypyrrole arrays were greatly influenced not only by whether nanostructure or non-nanostructure, but also by the thickness of polypyrrol coated FTO glass. The volumetric capacitance of the nanostructures polypyrrol arrays using PS colloid template were more higher than that of non-nanostructured polypyrrol arrays coated FTO glass in electrolyte.