

Excellent electrochemical behavior of Nickel doped carbon nanofibers by electrospinning technique

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Recently, carbon nanofibers (CNFs) have received great attentions due to its marvelous physicochemical characteristics and most widely studied as an electrocatalyst in supercapacitors. In work, nickel (Ni) doped carbon nanofibers were successfully prepared by a simple, low cost, high yield and effective technique; electrospinning. The morphological characterizations of prepared materials revealed that well-defined fiber like morphology with uniform diameters of 200–300 nm was obtained in which Ni particles were distributed over the surface of CNFs. From the surface analysis, the prepared Ni doped CNFs exhibited reasonable specific surface area along with desirable pore size and pore volume. In the utilization of Ni doped CNFs as electro-active electrode, the prepared electrode presented good electrocatalytic behavior in alkali aqueous (6M KOH) and neutral (1 M Na₂SO₄) electrolytes. By evaluating the electrochemical measurement, the prepared Ni doped CNFs electrode expresses a good capacitance and other capacitive parameters.