

## Electrochemical Performance of Carbon Nanotube Based Supercapacitor

**Authors :** Jafar Khan Kasi, Ajab Khan Kasi, Muzamil Bokhari

**Abstract :** Carbon nanotube is one of the most attractive materials for the potential applications of nanotechnology due to its excellent mechanical, thermal, electrical and optical properties. In this paper we report a supercapacitor made of nickel foil electrodes, coated with multiwall carbon nanotubes (MWCNTs) thin film using electrophoretic deposition (EPD) method. Chemical vapor deposition method was used for the growth of MWCNTs and ethanol was used as a hydrocarbon source. High graphitic multiwall carbon nanotube was found at 750 C analyzing by Raman spectroscopy. We observed the electrochemical performance of supercapacitor by cyclic voltammetry. The electrodes of supercapacitor fabricated from MWCNTs exhibit considerably small equivalent series resistance (ESR), and a high specific power density. Electrophoretic deposition is an easy method in fabricating MWCNT electrodes for high performance supercapacitor.

**Keywords :** carbon nanotube, chemical vapor deposition, catalyst, charge, cyclic voltammetry

**Conference Title :** ICASTE 2014 : International Conference on Agricultural Science, Technology and Engineering

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** December 22-23, 2014