

Fabrication and characterization of polyaniline coated aligned carbon nanofibers

김민재, K Zin Htut, 이은수, 심상은†

인하대학교

(seshim@inha.ac.kr†)

In this study, aligned carbon nanofibers (CNFs) were fabricated by electrospinning technique and carbonization process in order to feasibility study as a supercapacitor electrode. Preferentially the analysis about enhanced properties such as surface properties and electrical conductivity of aligned CNFs compared with randomly oriented CNFs was conducted. As the increase of speed of rotary collector, the generated strength between nanofibers and collector was grown strong. Consequently, due to changed surface properties and electrical conductivity affected on enhanced electrochemical properties of them. To improve specific capacitance of CNFs, polyaniline (PANI) was coated on the surfaces of CNFs through electrodeposition method. The structure and electrochemical properties of PANI coated CNFs was characterized by scanning electron microscope (SEM), Fourier transform infrared spectroscopy (FTIR), cyclic voltammetry (CV), and electrochemical impedance spectroscopy (EIS).

Acknowledgments: This study was supported by the National Research Foundation of Korea (grant no.: NRF-2013R1A2A2A04013913 and NRF-2015R1A4A1042434).