

Enhanced Double Layer Supercapacitors based on mesoporous carbon electrodes

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Highly efficient electro-active electrode was prepared using mesoporous carbon (MC) materials for the fabrication of electrochemical double-layer supercapacitor (EDLC). The prepared MC materials exhibited the high surface to volume ratio, large pore volume and high porous nature. The cyclic voltammetry, electrochemical impedance and galvanostatic charge-discharge measurements were carried out to investigate the capacitive and electrochemical behavior. A reasonably high specific capacitance of 201 F/g at current density of 0.6 A/g and voltage of 1.5V was achieved and an excellent stability by keeping about 88% of initial capacity after 1000 cycles by the fabricated EDLC based on MC electrode.