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Containing polyaniline composites based on porous fibrous carbon materials for supercapacitor electrode structures

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Abstract

Polyaniline (PANI) based composites have been prepared with various porous carbon materials – cloth and fabric - by chemical polymerization of aniline in an acidic medium. Carbon cloth /PANI composites demonstrate significant capacitance enhancement in compared to carbon materials up to 250 F/g^{-1} and 7.5 F/cm^{-2} for Busofit T-040 /PANI composite. The coulombic efficiency of composites has been measured to be about 97-99%. The potential for using these carbon materials/polyaniline composites as supercapacitor electrodes has been explored by cyclic voltammetry and galvanostatic charge/discharge tests.