

Preparation of Polyaniline/Titanium Oxide Composite with p-TSA by chemical oxidation polymerization

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Supercapacitors which have higher power density and longer cycle life than secondary batteries have attracted a great interest as important charge storage devices. Many researchers have studied about composites of conducting polymer, carbon material and metal oxide to synthesize a new material for the high capacity performance electrode. Among the conducting polymers, polyaniline is the promising candidate because of its energy storage and electrochemical properties and environmental stability. Titanium oxide has been one of the most extensively studied oxides because of its remarkable optical and electronic properties. The composite consisted with polyaniline and titanium oxide is expected to show the improved properties than the pristine form of them. Para-toluenesulfonic acid (p-TSA) could modify the electrochemical properties of polyaniline and the composites prepared with p-TSA could have better properties than the composites prepared in HCl solution.