NiO/PPy/Reduced Graphene Oxide Nanocomposite for Supercapacitor Application

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Among various energy storage systems, fuel cells, secondary batteries and supercapacitors are considered the most practical. Specifically, supercapacitors have been the focus of many studies because of their high power density and long life cycle. In this study, NiO/PPy/reduced graphene oxide nanocomposites were prepared using (1) a simple hydrothermal method and (2) a double solvent system for supercapacitor application. Nickel acetate was used as the precursor for the nickel oxide, while a reactive self-degrading template was used to synthesize polypyrrole. The products were characterized by XRD, FTIR, TEM, SEM and CV to determine their suitability as electrode material for supercapacitor application.