

Polymer directed synthesis of NiO/C for supercapacitor electrode

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Supercapacitors are growing in popularity due to their cycling stability, quick charge-discharge rates, and high power density. These devices rely heavily upon the types of materials used within them. The capacitance of metal oxides can be higher than carbon based electrodes; however, they suffer from drawbacks such as low power density and poor conductivity. The present study explored the excellent design strategy for the synthesis of nanocomposites in which the pseudocapacitive NiO is intimately associated with a porous nanostructured carbon substrate. NiO was chosen because it has been shown to produce a synergistic effect when combined with carbon, creating a more stable electrode with higher conductivity. The use of polymeric templates in synthesis allows tuning the structure in nanoscale. The finding is very encouraging given easy synthetic routes and our material would be a very promising electrode material for future pseudocapacitors.

