عنوان مقاله:

Effects of source separating education on municipal solid waste Synthesize of three dimensional hollow balls of (graphene oxide and polyaniline (3D-HBGP

محل انتشار:

اولین کنگره و نمایشگاه بین المللی علوم و تکنولوژی های نوین (سال: 1397)

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خلاصه مقاله:

The organic/inorganic nanocomposites with different combinations of the two components have attracted significant academic and technological attention because they have interesting physical properties and potential applications. Nanocomposite hollow spheres have variety applications in catalysts, delivery and controlled release, optoelectronics. There has been augment interest in the fabrication of composite hollow spheres with enhanced electrical properties, which remains scientifically challenging. In this work, Polyaniline (PANI)/graphene oxide (GO) nanocomposites hollow spheres were successfully synthesized with using polymerization method and particle templates polymethyl methacrylate (PMMA). PANI is one of the important and practical conducting polymers between among of conducting polymers and it has many properties such as high conductivity, stability. Moreover, PANI has many applications in different fields such as electronic devices and electrostatic discharge protection. To achievement hollow spheres of PANI and GO nanocomposites, specifically, chemically exfoliated graphene sheets were self-assembled on the surface of PMMA colloidal particles used as a template, followed by the synthesis of PANI and the removal of the core PMMA particles. The microstructure of the prepared 3D-HBGP consists of porous structures which an electrolyte can easily approach resulting in a significantly improved specific capacitance. First, the negatively charged GO particles were gradually mixed with the positively charged PMMA colloidal particles to form GO sheets encapsulating the PMMA colloidal particles by the electrostatic interactions. Secondly, we incorporated PANI on the PMMA/GO particles by polymerizing the aniline monomer with the assembly of PMMA/GO particles. Finally, in order to create the porous structures of 3D-HBGP, the core PMMA particles were etched away using benzene. The morphology, compositing properties of the resulting products were characterized by field-emission scanning electron microscopy (FE-SEM), and Fourier transform infrared spectroscopy (FT-IR). According above results, we can conduct that the nanocomposites hollow spheres successfully synthesized and the nanocomposites have broad applications in catalyst, delivery and controlled release, optoelectronics, and microcavity resonance. Nanostructured graphene and PANI have received considerable attention and have demonstrated potential as high performance supercapacitors

electrodes. In addition to the superior pseudo capacitance of PANI, 3D nanostructured graphene provides a high specific ...

کلمات کلیدی:
nanocomposites, Polyaniline, graphene oxide