

عنوان مقاله:

Synthesis and characterization of functionalized single - walled carbon nanotube/ chitosan/polyaniline nanocomposite

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خلاصه مقاله:

In this work the synthesis of polyaniline/chitosan/functionalized single- walled carbon nanotube nanocomposite is carried out. For this purpose single -walled carbon nanotubes were reacted with thionyl chloride to change the hydroxyl to acyl chloride groups for improving the react ability. In other step, aniline monomers and chitosan were polymerized in the presence of Iron (III) chloride to synthesize the chitaline copolymer. The synthesized chitaline then reacted with functionalized single- walled carbon nanotube to prepare chitaline-single walled carbon nanotube nanocomposite. The synthesized nanocomposite was also characterized to evaluate the structure and morphology by Fourier infrared spectroscopy (FT-IR), scanning electron microscopy (SEM) and thermo gravimetric analysis (TGA). The results showed that the formation of the composite in nano scale can be good carbon materials with high adsorption capacity in porous surfaces for improving the properties as a good candidate such as nano bio filter for removing the organic and inorganic wastes from water.

کلمات کلیدی:

Chitosan, Chitaline, Functionalized single- wall carbon nanotube, Nanocomposite, Polyaniline, SEM

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