

عنوان مقاله:

Recycling of Plastic Waste Made of Polystyrene and Its Transformation into Nanocomposites by Green Methods

محل انتشار:

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خلاصه مقاله:

The titanium dioxide nanoparticles were synthesized by the sol-gel method, while the copper oxide nanoparticles (CuO) were synthesized by the green method by using Sidr extract. The nanocomposites were prepared from the condensation reaction of polystyrene (PS), TiO₂, CuO, and (GO) by simple mixing method. These structure (PS/GO/CuO) and (PS/TiO₂/CuO) were characterized by FE-SEM, X-rays diffraction, and thermal analysis. The measurements showed that PS/TiO₂/CuO and PS/GO/CuO of the synthesized were present in nanoparticle size within the nano-scale. The nanocomposites were tested in the applications of biological activity as antibacterial, antifungal, and antioxidant. The results showed that the .nanocomposites (PS/GO/CuO) gave a higher inhibition value than (PS/TiO₂/CuO) nanocomposites with bacteria

کلمات کلیدی:

polystyrene, graphene oxide, CuO, TiO₂ metal oxide nanoparticles

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