

عنوان مقاله:

Synthesis of montmorillonite/copper oxide nanocomposites and study of their antibacterial activities

محل انتشار:

همایش ملی نانو فناوری و شیمی سبز (سال: 1391)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

The external and interlamellar spaces of MMT were used as solid support for synthesis of CuO NPs at room temperature by the chemical reduction method. In this project, Copper Nitrate ($\text{Cu}(\text{NO}_3)_2 \cdot x\text{H}_2\text{O}$) and Sodium Hydroxide (NaOH) were used as Copper precursor and reducing agent respectively. Then, MMT/ Cu^+ nanocomposites were stabilized with different range of the weight percent of Polyethylene glycol (PEG). The solids were characterized by X-Ray diffractometry (XRD), Scanning electron microscopy (SEM), Transmission electron microscopy (TEM), Fourier transform infrared (FT-IR) and UV-Visible spectroscopy. The antibacterial activities of different sizes of CuO NPs in MMT were investigated against Gram-positive, Staphylococcus aureus and Gram-negative bacteria, Escherichia coli, by the disk diffusion method using Muller-Hinton agar (MHA). These results were showed that CuO NPs were found to have high antibacterial activities. By this method we were able to obtain CuO NPs with different sizes and making them applicable to medical applications and can be used as effective growth inhibitors in different biological system.

کلمات کلیدی:

Nanoparticles , Montmorillonite , Copper Nanoparticles , Antibacterial activity

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