

عنوان مقاله:

Preparation and Reducing Surface Energy (Surface Modification) of Zinc Oxide Nanoparticles

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خلاصه مقاله:

Zinc oxide nanoparticles are well-known to be one of the multifunctional inorganic compounds which are widely used in medical applications. This study aims to prepare ZnO nanoparticles with particle size ranging from 23-29 nm. In the present study, surface modification of ZnO nanoparticles was performed, and influence of modification on the structure and morphological properties was investigated. The resulting nanoparticles were characterized by Fourier transform infrared spectroscopy (FT-IR), X-ray diffraction (XRD), scanning electron microscopy (SEM) and atomic force (AFM). Zinc oxide nanoparticles with the average diameter of about 29 nm were modified with oleic acid, as coupling agents, in order to modify their surface properties and make them more hydrophobic dispersible in the organic area. Results showed that the surface modified ZnO nano-particles were more dispersible in the examined organic media indicating better compatibility, ZnO modified with oleic acid exerted more compatibility. From the results obtained it is suggested that modified ZnO-nanoparticles could be used effectively in safety, environmental applications and also can be used in future medical applications

کلمات کلیدی:

ZnO preparation, surface modification; nanoparticles; Dispersion

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