

Abstract

Chitosan (CS) encapsulated ZnO nanoparticles (NPs) were prepared in an aqueous phase at pH 7. Chitosan was initially attached with glycine to make it water-dispersible. The product was precipitated as micro gels by stirring with methanol and poly ethylene glycol mixture at pH~7. FTIR spectra showed a characteristic peak for the amide functional group, which had confirmed the substitution reaction. The peaks corresponding to the presence of glycine and PEG were also observed. ZnO NPs were dispersed in water by a separate method after etching with acetic acid. The conjugate was obtained because of the electrostatic interaction between ZnO and chitosan in the solution. The photoluminescence spectrum exhibited the quenching of the characteristic excitonic peak of ZnO at 380 nm, but showed a new peak around 413 nm for the chitosan-ZnO conjugate.