KSUC-OI-013

Electrospinning of PVA/CS composites nanofibers containing hydroxyapatite nanoparticles

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Abstract

In this study, the composites nanofibers were prepared by electrospinning technique. The spinning solution consists of chitosan (CS), polyvinyl alcohol (PVA) and hydroxyapatite (HA) as inorganic ceramics at different weight ratio. The functional group, morphology and diameter of the fibers were characterized using Fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy (SEM). The FTIR showed a strong interaction between chitosan and polyvinyl alcohol. The morphology showed that the average diameter of composites nanofibers decreased with increasing the concentration of CS. After mixing with different concentration of HA nanoparticles, the aggregation of HA particles appeared in fibers with increasing HA concentration.

Keywords: Chitosan, Electrospinning, Hydroxyapatite