

**PREPARATION AND CHARACTERISATION OF CHITOSAN/NANO HYDROXYAPATITE COMPOSITES**

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**ABSTRACT**

Nano hydroxyapatite (Nano-HA) was synthesised and incorporated into water soluble chitosan (WSCH) to form WSCH/nano-HA composite using mixing technique. 30% glycerol was added to produce flexible composite. Film of WSCH/nano-HA composites was prepared using casting and drying method. The WSCH/nano-HA composite was characterized using scanning electron microscope (SEM), X-ray diffraction (XRD) and Fourier-Transformed Infrared spectroscopy (FTIR) to determine the morphology of the composites and to confirm the presence of hydroxyapatite in the composites. Results from XRD and FTIR confirmed the existence of HA in the composites while the SEM analysis indicated that hydroxyapatite was dispersed homogeneously in water soluble chitosan matrix. The mechanical properties of the composite were tested using Universal Testing Machine (UTM). It was found that increasing nano-HA content in the composite will decrease the tensile strength.

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