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Modified corn cob filled chitosan biocomposite films

Abstract

The present work was investigated the effect of filler content and chemical modification on mechanical, thermal properties and morphology study of CS/CC biocomposite films. The acrylic acid was used as chemical modification of corn cob. The increasing of CC content has decreased the tensile strength and elongation at break, but increased the modulus of elasticity of CS/CC biocomposite films. The modified corn cob with acrylic acid (AA) has enhanced the tensile properties and thermal properties of CS/CC biocomposite films by improving the interfacial interaction. The chemical reaction between acrylic acid and corn cob was confirmed by Fourier transmission infrared (FTIR) and the improvement of interfacial bonding was proven by scanning electron microscopy.

Keywords

Acrylic acid; Biocomposite; Chitosan; Corn cob; Films