

Characterization and optical properties of L-cysteine/chitosan biocomposite thin film

Abstract

This study is conducted to characterize and determine the optical properties of L-cysteine/chitosan biocomposite thin film. This biocomposite thin film was prepared using spin coating technique. The obtained thin film has been confirmed and characterized by FTIR and AFM while the optical properties were evaluated by UV-VIS NIR spectroscopy. AFM analysis shows a non-porous, relatively smooth and homogeneous surface. The absorption of the biocomposite thin film is the highest at 285 nm and its energy band gap is 3.972 eV. The L-cysteine/chitosan biocomposite thin film may be considered as a novel material for various application including drug delivery, tissue engineering, food packaging, metal absorption and dye removal.

Keyword: L-cysteine; Chitosan; Biocomposite; Thin film; Optical properties