

Study of morphology and optical properties of cellulose and carbon nanotube composites

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Cellulose has attracted much attention from researchers because of its unique properties. Whereas cellulose is a non-conductive, carbon nanotube (CNT) shows higher conductivity and thermal conductivity. CNT/cellulose composite fibers are prepared with 2 conditions: CNT concentration and mixing temperature. CNT/cellulose composite has been characterized by Ultraviolet-visible spectrophotometer (UV-Vis), Optical microscope (OM), Fourier-transform infrared spectroscopy (FTIR), Scanning Electron Microscope (SEM) and tensile. The results show that the high concentration of CNT, the less transmittance. Moreover, the CNT/cellulose composite at high temperature shows a higher transmittance than that at room temperature for high CNT concentration.

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