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Moisture-sensitive properties of multi-walled carbon nanotubes/polyvinyl alcohol nanofibers prepared by electrospinning electrostatically modified method

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Abstract

Polyvinyl alcohol (PVA) nanofibers reinforced with multi-walled carbon nanotubes (MWCNTs) were fabricated by electrospinning. MWCNTs were introduced into the PVA matrix through the application of an electric field. The morphology of the composite MWCNTs/PVA fibers was characterized by scanning electron microscopy. Results show that the nanofibers had a diameter between 48 and 103 nm and contained a variable amount of MWCNTs. The electrical properties of MWCNTs/PVA nanofibers were investigated by fabricating impedance-type sensors. The impedance and electrical conductivity of the samples were evaluated in the range 46% and 89% relative humidity.

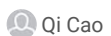
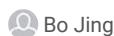
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