

Effect of Amine-Functionalized Carbon Nanotubes on the Properties of CNT-PAN Composite Nanofibers

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Abstract : PAN nanofibers reinforced with amine functionalized carbon nanotubes. The effect of amine functionalization and the effect of concentration of CNT on the conductivity and mechanical and morphological properties of composite nanofibers were examined. 1%CNT-NH₂ loaded PAN/CNT nanofiber showed the best mechanical properties. Conductivity increased with the incorporation of carbon nanotubes. While an increase of the concentration of CNT increases the diameter of nanofiber, the use of functionalized CNT results to a decrease of diameter of nanofiber.

Keywords : amine functionalized carbon nanotube, electrospinning, nanofiber, polyacrylonitrile

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