

Physical Properties of Poly(ethylene oxide)-based Nanofibers-reinforced Composites

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In this work, electrospinning was carried out using 12 wt.% poly(ethylene oxide) solution under fixed tip-to-collect distance (10 cm) and voltage (15 kV) in order to fabricate nanofibers-reinforced composites. The content of PEO nanofibers was varied from 0 to 10 wt.% in the epoxy(EP)/PEO compositions. Thermal and mechanical interfacial properties of EP/PEO nanofibers composites were characterized by thermogravimetric analysis (TGA) and fracture toughness test, respectively. As a result, the thermal and mechanical interfacial properties of the nanofibers-reinforced composites were increased with increasing the PEO content in this present system which could be attributed to the higher specific surface area and larger aspect ratio of PEO nanofibers.