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Enhanced alignment of Multi-Walled Carbon Nanotubes in Electrospun PS/PMMA Polymer Blends[1] JAEMIN KIM, KWANWOO SHIN, Department of Material Science and Engineering, Gwangju Institute Science and Technology, Gwangju , Korea — Electrospinning has been recognized as an efficient technique to obtain ultrafine polymeric nanofibers. A variety of polymers have been successfully electospun into continuous polymeric fibers having micron to submicron diameters. In this work, multiwalled carbon nanotubes are incorporated into electrospun nanofibers which consist of PS/PMMA polymer blends during the electrospinning process. It was observed that multiwalled carbon nanotubes(MWNT) are linearly oriented along the fiber axis in which internally co-continuous phase morphology of the PMMA is formed in the PS matrix This highly oriented MWNT structures in the fiber are characterized by transmission electron microscopy. The internal morphology of polymer blends are determined by selectively etching the PMMA with a good solvent using scanning electron microscopy, and staining the PS portion with osmium tetra teroxide.

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