

Crosslinked Multiwalled Carbon Nanotube Balls-reinforced Polystyrene Composites

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In this study, we fabricated crosslinked polystyrene-multiwalled carbon nanotubes (PS-MWCNT) balls, for use as reinforcing micro-fillers, using styrene dispersed MWCNTs and DVB as a crosslinking agent via the in-situ suspension polymerization method to simultaneously enhance the tensile and impact properties of the PS matrix. The crosslinked PS-MWCNT balls are miscible with the PS matrix and the micrometer-sized fillers inhibit the progression of cracks. In addition, we observed the morphology and structure of the prepared crosslinked PS-MWCNT balls and investigated the mechanical and electrical properties of their composites with commercial PS.