

Properties of Polycarbonate/Multi-walled Carbon Nanotube Composites

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Morphological, electrical and electromagnetic interference shielding efficiency (EMI SE) properties of the polycarbonate (PC) / multi-walled carbon nanotube (MWNT) composites were studied. The MWNT was functionalized by treating with the hydrogen peroxide (H_2O_2) under the sonication process. For the preparation of the PC/MWNT composites, the PC/MWNT mixture, ranged from 1.0 to 7.0 wt%, was dissolved in tetrahydrofuran (THF) under the sonication process. The effects of the MWNT functionalization by H_2O_2 was observed by SEM and TEM image. For measuring the electrical conductivity, the four-probe method was used to eliminate the contact resistance. For measuring EMI SE, it was used vector network analyzer (VNA) with the 2-ports flanged coaxial line holder. From the electrical and EMI SE properties of the PC/MWNT composites, the electrical conductivity and EMI SE of the PC/MWNT (H_2O_2 treated) composites showed higher compared that of the PC/MWNT (untreated) composites.

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