

The electromagnetic interference shielding using thin multiwalled carbon nanotube/poly(methyl-methacrylate) composites

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We fabricated the composite films of the thin-multiwalled carbon nanotubes(t-MWCNT) with poly methyl-methacrylate (PMMA) for the measurements of electromagnetic interference (EMI) shielding efficiency (SE) both in far-field and near-field regions. The t-MWCNT varied for the composites. The thickness of t-MWCNT composite films was about 100 μm . The EMI-SE of t-MWCNT composite films were measured by using 2 ports flanged coaxial line holder for far-field EMI shielding characteristics and by using the micro strip line (MSL) and modified MSL for near-field EMI shielding characteristics. The frequency range of the measured EMI-SE was 50 MHz–13.5 GHz. The dc conductivities were measured through four probe contact method. We compared the measured EMI-SE of the composite films with the theoretical EMI-SE obtained from the simulations.

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