

## Effect of Power Ultrasound on Properties of Polymer Blends with Modified Multiwalled Carbon Nanotube

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Power ultrasound is widely used in the area of chemical synthesis, reaction and many processing. High intensity ultrasound was employed during melt blending of polymer and multiwalled carbon nanotubes(MWNT). Major focus has been concentrated on effect of ultrasound on the changes in polymer structure and interfacial adhesion between polymer and MWNT. By combining high intensity ultrasound which causes chain scission of polymer molecules and a modified MWNT having double bonds at its ends, it was expected that radical species of polymers and nanotubes are generated. It would provide an important basis for the adhesion improvement mainly promoted by their mutual coupling. In this study, low density polycarbonate(PC)/modified MWNT composites revealed significant improvement in interfacial adhesion and thermal stability as manifested by morphology and thermal gravimetric analysis. After the ultrasonic irradiation of Polycarbonate/modified MWNT composites, increase in complex viscosities and shear-thinning behavior were observed. Also, mechanical and electronic properties were improved.