

A study on the thermal properties of multi-walled carbon nanotube reinforced polymer composites

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The development of nano-particle reinforced polymer composites is presently seen as one of the most promising approaches in the field of future engineering applications. Specially, carbon nanotubes(CNT) have shown a high potential to improve the material properties of polymers, such as the improvement of the thermal conductive and thermal stability and mechanical tensile strength and modulus properties.

In this study, we prepared multi walled carbon nanotube(MWCNT) reinforced polymer composites based on epoxy resin with different weight percentages of multi-walled carbon nanotubes (MWCNTs). To improve the dispersion of MWCNTs in epoxy matrix, the surface modified MWCNTs having acid groups (acid-MWCNT) are used. Effects of MWCNTs content on the thermal properties were examined. The results showed that as the content of the MWCNTs increased, improved thermal conductive and stability were observed.