

## **Enhanced mechanical and thermal properties of CNT/HDPE nanocomposite using MMT as secondary filler**

### **ABSTRACT**

This study explains the influence of secondary filler on the dispersion of carbon nanotube (CNT) reinforced high density polyethylene (HDPE) nanocomposites (CNT/HDPE). In order to understand the mixed-fillers system, Montmorillonite (MMT) was added to CNT/HDPE nanocomposites. It was followed by investigating their effect on the thermal, mechanical and XRD properties of the aforesaid nanocomposite. Incorporation of 3 wt% each of MMT into CNT/HDPE nanocomposite resulted to the increased values for the tensile and flexural strength, as compared to the pure HDPE matrix. The thermal analysis result showed improved thermal stability of the formulated nanocomposites.

**Keyword:** Carbon nanotube and nanocomposite; Montmorillonite; Secondary filler