

The effect of waste office white paper content and size on the mechanical and thermal properties of low-density polyethylene (LDPE) composites

Abstract

The effect of waste office white paper (WOWP) loading and size on mechanical properties, morphology and thermal properties of LDPE/WOWP composites were investigated. The results showed that increasing of WOWP loading has increased tensile strength and Young's modulus but decreased elongation at break of composites. LDPE/WOWP composites with smaller particle size (31 μm) have higher mechanical properties. Thermal analysis results of composites with particle size (31 μm) show higher thermal stability and crystallinity than composites with particle size (77 μm). Scanning electron microscope (SEM) micrograph indicates that the smaller particle size of filler has better interaction with LDPE matrix.