

Effect of polyethylene-grafted maleic anhydride (PE-g-MAH) on properties of low density polyethylene/eggshell powder (LDPE/ESP) composites

Abstract

The effect of polyethylene-grafted maleic anhydride (PE-g-MAH) on the tensile properties, morphology and thermal properties of low-density polyethylene (LDPE)/eggshell powder (ESP) composites was studied. LDPE/ESP composites with different eggshell powder content and the addition of PE-g-MAH were prepared with Z-blade mixer at 180°C and rotor speed of 50 rpm. The tensile strength, elongation at break and thermal stability of LDPE/ESP composites with PE-g-MAH were greater than LDPE/ESP composites, and their differences became more pronounced at higher filler content. The interfacial adhesion between ESP and LDPE was improved with the addition of PE-g-MAH as evidenced by the morphological study.