

Properties of recycled polyethylene/ chitosan composites: the effect of polyethylene-graft-maleic anhydride

Abstract

The surface of recycled polyethylene (RPE)/chitosan composites was modified with polyethylene-graft-maleic anhydride (MAPE). The mechanical properties, water absorption, morphology, and thermal properties were investigated. The composites with MAPE improved tensile strength and Young's modulus but reduced elongation at break and water absorption. Scanning electron microscopy study of the tensile fracture surface of composites indicated that the presence of MAPE increased the interfacial interaction between chitosan and RPE matrix. The incorporation of MAPE improved the thermal stability and crystallinity of RPE/chitosan composites