

The effect of isophorone diisocyanate-polyhydroxyl groups modified water hyacinth fibers (Eichhornia crassiper) on properties of low density polyethylene/acrylonitrile butadiene styrene (LDPE/ABS) composites

Abstract

The effect of isophorone diisocyanate-polyhydroxyl groups as a coupling agent on properties of low density polyethylene/acrylonitrile butadiene styrene/water hyacinth fibers (LDPE/ABS/WHF) composites was studied. LDPE/ABS (50/50) blends with different unmodified and modified water hyacinth fibers (WHF) loading were prepared with Z-blade mixer at 200° C and rotor speed of 50 rpm. The results indicated that LDPE/ABS/modified WHF composites show higher values of tensile strength, Young's modulus and water absorption resistance than LDPE/ABS/unmodified WHF composites. It was also found that the modified WHF offers better thermal stability than unmodified WHF in the LDPE/ABS/WHF composites.