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Influence of Halloysite Nanotubes Hybridized with Kenaf Core Fibers on the Physical and Mechanical Properties of Low Density Polyethylene/Thermoplastic Sago Starch Blends (Article)

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Abstract

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In this work, halloysite nanotubes (HNTs) were hybridized with kenaf core fibers (KCF) to reinforce low density polyethylene (LDPE)/thermoplastic sago starch (TPSS) blends. The effects of HNT loading (3-15 wt.%) on the mechanical and physical properties were examined. The results showed an enhancement in tensile strength and modulus with the inclusion of HNTs. Formation of FTIR bands that are assigned to Al-OH and Si-O vibrations indicated the presence of HNTs in the system. Moreover, the thermal stability of hybrid composites was improved with the addition of HNTs. Water uptake decreased as higher amount of HNTs imparted to the hybrid composites. © 2014 Copyright Taylor and Francis Group, LLC.

Author keywords

Bonding Halloysite nanotubes Kenaf core fibers Mechanical Thermoplastic sago starch

Indexed keywords

Halloysite nanotube
(HNTs)

Halloysite nanotubes

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Thermoplastic sago
starches

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