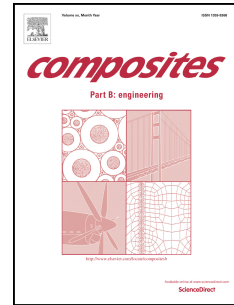


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Influence of a Novel Organo-Silylated Clay on the Morphology, Thermal and Burning Behavior of Low Density Polyethylene Composites

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Abstract

The functionalization of a natural sodium montmorillonite (MMT) with (3-glycidyloxypropyl)trimethoxysilane by a silylation procedure is presented, and its use as nanofiller in the melt compounding of low density polyethylene (LDPE) nanocomposites. In particular, the effects on the thermal stability and flame retardant properties of melt compounded LDPE nanocomposites are analyzed, with and without magnesium hydroxide (MH) as an additional conventional flame retardant. The purpose was to investigate possible synergistic effects between the two inorganic fillers on fire behavior. The obtained organosilylated clay showed higher interlayer spacing than the original MMT and good thermal stability, higher than that of many commercial organoclays modified with alkylammonium salts. Its addition to LDPE allowed the

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