

Easy estimation of the progress of artificial weathering of palm fiber-polypropylene composites by chemiluminescence.

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Abstract

Date palm leaves were compounded with polypropylene (PP) and UV stabilizers to form composite materials. Residual thermo-oxidn. stability of such composites undergone to accelerated weathering in Xenotest has been investigated by chemiluminescence method. It has been found that composites are much more stable than PP alone which was attributed to the direct interaction of cellulose fibers (reinforcing effect) and lignin (anti-oxidn. effect) with polypropylene peroxy radicals. Samples in which polypropylene is compatibilized with cellulose by Epolene E-43 wax are generally less stable than un-compatibilized ones probably because of the pro-initiation effect of cellulose on polypropylene oxidn.