

**Degradation study of date palm fibre/polypropylene composites in natural and artificial weathering: mechanical and thermal analysis.**

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**Abstract**

Date palm leaves were compounded with polypropylene (PP) and UV stabilizers to form composite materials. The stability of the composites in natural weathering conditions of Saudi Arabia and in accelerated weathering conditions was studied. The composites were much more stable than PP under the severe natural weathering conditions of Saudi Arabia and in accelerated weathering trials. Compatibilized samples are generally less stable than uncompatibilized ones as a result of the lower stability of the maleated polypropylene. Irgastab and Tinuvin are efficient stabilizers for PP/cellulose fiber composites. In addn. to enhanced stability imparted by the presence of the fibers in the composites, enhanced interfacial adhesion resulting from oxidn. of the polymer matrix can be the source of retention of mech. strength.