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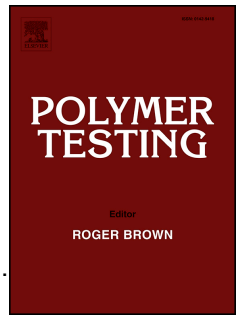

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Material Behaviour

Degradation during processing of vegetable fiber compounds based on PBAT/PHB blends

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ABSTRACT

The effect of the type of filler and concentration on the degradation rate of compounds based on a blend of poly (β-hydroxybutyrate) (PHB) and poly (butylene adipate-*co*-terephthalate) (PBAT) were studied using a fast and simple procedure of monitoring polymer degradation under processing conditions using torque rheometry. It was found that both the presence and level of two types of filler, taken from two different layers of the babassu palm fruit (mesocarp and epicarp), greatly increase incipient degradation of the blend when processed in an internal laboratory mixer. The qualitative trends and quantitative estimates may be explained by the chemical and morphological characteristics of the two fillers, as observed by optical microscopy. Fracture surface morphology was investigated by scanning electron microscopy (SEM) and indicated better filler-matrix adhesion in PHB-rich blends in epicarp compounds.

Keywords: PBAT, PHB, babassu, compounds, processing and degradation