Biodegradability analysis of KBF reinforced poly (lactic acid) biocomposites

Abstract

Poly (lactic acid) (PLA) and kenaf bast fiber (KBF) were melt-blended using brabender into films in the PLA/KBF ratios of 100/0, 90/10, 70/30 and 50/50 for natural soil burial test. This formulation was used to study the biodegradability of PLA and PLA/KBF biocomposites. It was found that the decompositions of the biocomposite were faster than pure PLA. The SEM morphology of the tensile fracture surface of the 30% and 50% of PLA/KBF biocomposites presented larger pores and degradation areas than smaller KBF loading (10 wt%). This result shows that the addition of larger fibre loading to the PLA matrix increased the micropore surface area of the PLA/KBF biocomposite hence accelerated the decompositions time of the biocomposites.