

Tensile and Morphology Properties of Polylactic Acid/Treated *Typha latifolia* Composites

Abstract

This paper is focused to investigate the effect of treated natural fiber (*typha latifolia*) content on tensile and morphology properties of polylactic acid (PLA)/treated *typha latifolia* (T-TyLa) composites. The composite was compounded using heated two roll mill and the composite samples were prepared through compression molding. Tensile test and scanning electron microscopy (SEM) analysis were carried out to study the properties of PLA/T-TyLa composites. The results showed that the tensile strength of PLA/T-TyLa composites was decreased for about 43% with initial addition of T-TyLa content. The tensile modulus of the composites was increased (23%-91%) with increasing of fiber content. However, increased in fiber content reduced the elongation at break for about 53%-67% of PLA/T-TyLa composites. The optimum increment was obtained at 30 wt% of fiber content. SEM results showed that fiber dispersion was better for PLA/T-TyLa composites at lower fiber content.

Keywords; Natural Fiber, Polylactic Acid (PLA), Polymer Composite, *Typha latifolia*