

Mechanical properties of poly(lactic acid) compounded with recycled tyre waste/graphene nanoplatelets nanocomposite

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ABSTRACT

This study reports the binary blend of poly(lactic acid) (PLA) with recycled tyre waste (RW) with different compositions. The effect of graphene nanoplatelets (GNP) on the RW/PLA in terms of mechanical and morphology of nanocomposites have been investigated. The sample was prepared by twin-screw extruder with a die of 25 mm width and 0.5 mm thickness. Results show that incorporation of GNP at 1, 2 and 3 phr improves the tensile properties of the RW/PLA blend. It was found that the surface morphologies by Scanning Electron Microscope (SEM) show that the loading of GNP in nanocomposites decreases the formation of void and pores in the blend system.

KEYWORDS

GNP; Mechanical Properties; Nanocomposites; PLA; Recycled tyre waste

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