Evaluating the Mechanical Properties of Snake Grass Fibre and Sisal Fibre Hybrid Composites by Injection Moulding Method

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Abstract

This study motivates the state of relying on the non-degradable plastic packaging to develop the alternative material namely reinforced poly lactic acid (PLA) with snake grass fibre (SG) and sisal fibre (SF) bio composite. Injection moulding fabrication method is used. For mechanical characterization, SG/SF is loaded with an effect from 10 to 30 wt.%. Similarly, the tensile and flexural properties are significant to improve the attained wt. % of SG/SF. Additionally, PLA-SG/SF bio composite produced is having high specific strength and specific modulus. The suggested one in SG/SF may be integrated into PLA to reduce the mass of the end product and substantially reduce the cost of raw materials. The impact strength tends to decrease with SG/SF content. Finite element analysis was carried out to correlate the experimental values.

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