Effects of Plasticizer on Mechanical Properties of Durian Skin Fiber Reinforced Polylactic Acid Biocomposite

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Abstract

This study focus on reinforcing of durian skin fiber (DSF) and polylactic acid (PLA) for food packaging. Epoxidized palm oil (EPO) was used as a plasticizer to enhance the properties of the biocomposite. The biocomposite was fabricated by extrusion and injection molding processes. The tensile properties of PLA/DSF with EPO improved by 9.3% and 70.0% for the tensile strength and elongation at break, respectively. The plasticized PLA/DSF biocomposite also showed improvement in impact properties by 37.0%. The SEM micrographs of plasticized PLA/DSF biocomposite revealed no gap between fiber and matrix suggesting good interfacial adhesion between DSF and PLA. In can be concluded that PLA/DSF biocomposite is suitable to be used for disposable food container material.

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