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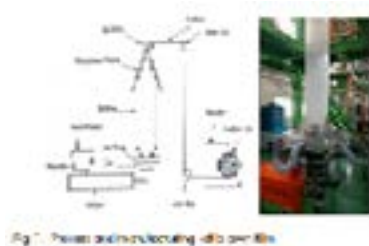
MATERIALS SCIENCE AND ENGINEERING

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Thermal, mechanical properties of modified poly (lactic-acid) / poly (butylene-adipate-co-terephthalate) blends

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Poly (lactic-acid) (PLA) and poly(butylene-adipate-co-terephthalate) (PBAT) are bio-based polymers which aid to replace petroleum-based polymers in future applications. In this study, Biodegradable PLA/PBAT blends were prepared with varying ratio of peroxide, isocyanate, and multi-epoxy groups by reactive blending. The effect of chain-extenders on the thermal behavior, mechanical properties and morphology of the modified PLA/PBAT blends were investigated. Peroxide and isocyanate chain extender were found to be more reactive to PBAT than PLA. But multi-epoxy chain extender was more reactive to PLA. The viscosity change of PLA/PBAT blends was significantly indicated when adding isocyanate or multi-epoxy chain extender whereas the tensile strength and elongation were improved with peroxide or isocyanate. As a result, the compatibility between the PLA and PBAT partially improved in the presence of the chain-extenders and thus it was confirmed that softening of PLA was possible.



Biography

Gi Hong Kim is a second year doctoral course student in polymer science and engineering at kyungpook national university in republic of korea under professor Kwan Ho Seo. He received his M. S. degree and B. S. degree in polymer science and engineering from the same university. The topic of his PhD research is "Modified PLA materials".

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