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Mechanical Properties of Gracilaria Lichenoides Reinforced Bioplastic Film

(Conference Paper) (Open Access)

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Abstract

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In this study, the mechanical properties of gracilaria lichenoides with additional of plasticizer and filler were evaluated. For samples with the addition of 5.5% of plasticizer, produced low tensile strength and this results is vice versa with elongation at break results. The tensile strength of the bioplastic continuously decreases from 14.8 to 2.7MPa as the plasticizer increases up from 1.5% to 5.5%. This phenomenon was analyses under scanning electron microscope (SEM), it shows that, the formation of pores and crystal agglomeration at sample with 5.5% glycerin. To alter these flaws, squid bone is introduce as filler to the bioplastic . Based on the analysis, additional of 6% filler content did alter the tensile strength up to 8 MPa with 3% of the elongation at break. © Published under licence by IOP Publishing Ltd.

Indexed keywords

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Mechanical properties

Plasticizers

Reinforced plastics

Scanning electron microscopy

Engineering uncontrolled terms

Bioplastics

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Elongation at break

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Gracilaria

Engineering main heading:

Tensile strength

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