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Properties of Polylactic Acid Biocomposite Foamed Treated via Supercritical Carbon Dioxide

Nordin N.M.[a]; Anuar H.[a] ; Ali F.[b]; Buys Y.F.[c]

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[a] Department of Manufacturing and Materials Engineering, Kulliyyah of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia

[b] Department of Chemical Engineering and Sustainability, Kulliyyah of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia

[c] Department of Mechanical Engineering, Faculty of Industrial Technology, Universitas Pertamina, Jalan Teuku Nyak Arief, Simprung, Kebayoran Lama, Jakarta, 12220, Indonesia

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Abstract

Author keywords

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Abstract

In this study, polylactic acid (PLA) was incorporated with durian skin nanofibre (DSNF) and cinnamon essential oil (CEO), where the DSNF was extracted through freeze drying process. Supercritical carbon dioxide (SCCO2) acts as physical foaming agent for PLA biocomposite. The tensile strength and chemical interaction between PLA, DSNF, and CEO were investigated. The tensile strength of PLA biocomposite foamed reduced in presence of DSNF, however when only CEO incorporated in PLA the tensile increase and through FTIR graph functional group of PLA biocomposite foamed were identified. The foam structure produced after PLA biocomposite treated via SCCO2 was not fully nucleated and unstable as shown through SEM. The addition of DSNF and CEO did affect the PLA biocomposite foam.

Author keywords
Cell structure; Foamed biocomposite polymer; Supercritical carbon dioxide

SciVal Topics

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International Islamic University Malaysia, Kuala Lumpur

Anuar, H.; Department of Manufacturing and Materials Engineering, Kulliyyah of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia; email:hazleen@iium.edu.my

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