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Environmental degradation of durian skin nanofibre biocomposite

(Article)

Mohd Apani, S.N.E., Anuar, H. ✉, Rashid, S.M.S.A. 👤

Department of Manufacturing and Materials Engineering, Faculty of Engineering, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, Malaysia

Abstract

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The effect of ultraviolet radiation on tensile properties, water absorption and optical properties of polypropylene (PP) reinforced with durian skin nanofibre (DSNF) composites was investigated. DSNF was obtained from fermentation of durian skin fibre using *Rhizopus oryzae*. X-ray diffraction (XRD) analysis and Sherrer equation were applied to measure the average particle size of DSNF which was determined as 51.2 nm. PP and DSNF were melt-blended in a Haake internal mixer before compression moulded into composite specimens. The composites were exposed under ultraviolet (UV) radiation to simulate the effect of sunlight. The significant effect of maleic anhydride polypropylene (MAPP) was observed by the improvement recorded in tensile properties and reduction of water absorption in PP/DSNF composite. The colour index of composites increased with UV radiation exposure. Transmission electron microscope (TEM) images showed DSNF was well-dispersed in PP matrix in the presence of MAPP. © 2018 International Islamic University Malaysia-IIUM.

Author keywords

[Color index](#)
[Durian skin nanofibre](#)
[MAPP](#)
[Rhizopus oryzae](#)
[Ultraviolet radiation](#)
[Water absorption](#)

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🔍 Anuar, H.; Department of Manufacturing and Materials Engineering, Faculty of Engineering, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, Malaysia; email:hazleen@iiium.edu.my

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