

Zuraida Ahmad

SAGO

(Metroxylon Rottb)

And Its Applications

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Sago **(*Metroxylan Rottb*)** **and Its Applications**

Editor
Zuraida Ahmad



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Chapter 3

Albumen-Thermoplastic Sago Starch Reinforced Cotton: Agro-green Composites

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Preview. This chapter reports the study on the effects of starch on cotton/albumen composites (CAC). The mass ratio of cotton and albumen was set up at 1:10 for all samples, and the starch contents were varied from 0 to 25 wt.%. The CAC were prepared via hands lay-up technique and cured at standard laboratory atmosphere of $23\pm 2^{\circ}\text{C}$ and $50\pm 5\%$ relative humidity (RH), before the samples were undertaken for mechanical testing. The fabricated CAC were characterized by using Differential Scanning Calorimeter (DSC), Thermogravimetry Analysis (TG), Fourier Transform Infra-Red (FTIR) and Scanning Electron Microscope (SEM). The mechanical properties were improved in flexural yield strength from 3.0 to 8.0 MPa, and the impact strength from 18.0 kJ/m^2 to maximum of 22.0 kJ/m^2 with increasing of starch. Good interfacial bonding and wettability of the albumen and the cotton was observed in the SEM micrograph with the addition of starch as filler.

Introduction

Development on composite materials recently is being directed in producing environmental friendly materials using natural fibers as the