

**PROPERTIES OF PARTICLEBOARD FROM COCONUT COIR AND EMPTY FRUIT
BUNCH (EFB)**

RUSILMA BINTI ARNIE

**This Project Report Submitted in Partial Fulfillment of The Requirements for the Degree
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Name of Candidate : Rusilma binti Arnie
Candidate's ID No. : 2013734701
Programme : Bachelor of Science (Hons.) in Furniture Technology
Faculty : Applied Sciences
Thesis Tittle : Properties of Particleboard from Coconut coir and
Empty Fruit Bunch (EFB)

Signature of Candidate : 
Date : 13 January 2016

ABSTRACT

Properties of Particleboard from Coconut Coir and Empty Fruit Bunch (EFB)

The main purpose of this study is to determine the properties of particleboard from coconut coir and empty fruit bunch (EFB) fiber. Coconut coir and EFB from agriculture waste were used as alternatives raw materials for particleboard manufacturing. The study parameter was ratio from Ratio 1 (100% coconut coir), Ratio 2 (100% EFB) and Ratio 3 (50:50 ratios of coconut coir and EFB) with 13% resin content. Other parameters such as type of adhesive used (Phenol Formaldehyde), board density (550 kg/m^3) and press temperature (140°C) were held constant. The particleboards were prepared following common manufacturing technique. It was observed that the mixture ratio, board density and fibres properties affect the properties of final particleboards considerably. The experimental panel were tested for their mechanical strength include modulus of elasticity (MOE), modulus of rupture (MOR), internal bond (IB) and physical stability properties (thickness swelling) according to the procedures define by Malaysian Standard. Boards produced from Ratio 3 have better strength properties as compared to composition with Ratio 1 and Ratio 2. Overall result showed that most panels made from above mentioned materials not exceed the Malaysian standard for general purpose particleboard for use in humid conditions of MOE, MOR and IB except for TS values. However, the product still have potential because low density and light weight.

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