

**PROPERTIES OF PARTICLEBOARD MADE FROM RICE HUSKS AND
COCONUT HUSKS IN RELATION OF VARYING RESIN CONTENT AND
BOARD DENSITY**

By

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**Thesis Submitted in Partial Fulfillment of the Requirement for the Degree
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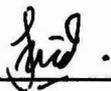
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Rice husk and coconut husk were discarded as agriculture residues that are available in large quantities and cheap. Moreover, the rice husks and coconut husks are estimated to be burned after harvest. Hereby, I propose the usage waste like rice husks and coconut husks as potential raw material for particleboard provide an alternative in reducing material from wood particles. This study determined the properties of particleboard made of a mixture of rice husks (50%) and coconut husks (50%). At the same time, the effects of board density (600kg/m^3 , 700 kg/m^3 , and 800 kg/m^3) and varying resin (Phenol formaldehyde) contents which are 8, 10, or 12 % were investigated. Based on the results modulus of rupture (MOR), modulus of elasticity (MOE), and internal bonding (IB) were increased by increasing resin content and board density except for thickness swelling (TS) and water absorption (WA) that were decreased for each increasing board density and resin contents. In this study the higher value of MOR (11.12 MPa) and MOE (1238.51MPa) is indicates from 800 kg/m^3 with 12% of resin content. The better value of IB is 0.125 MPa from 700 kg/m^3 at 10% resin content respectively. The particleboards were evaluated and the test conducted according to the European Standard (EN 312:2003).

Keywords: particleboard, Phenol formaldehyde, density, rice husks, coconut husks

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