



**A STUDY ON PHYSICAL AND MECHANICAL BEHAVIORAL AND
CHARACTERISTIC OF FIBROUS MATERIAL (WOOD BASED MATERIALS): A
NATURAL ABSORPTION IN INCENSES PRODUCT**

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" I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree."

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ABSTRACT

Incense is a material which contains aromatic materials that released fragrance when burned. In creating incense, natural sources can be used such as gums, resins, woods, herbs, spices, fruits, seeds, flowers, honey, etc. It can be in many forms which are stick, granulated, and cone. The objective of study is to determine characteristic of wood fiber in natural absorption of water to form pallet. Moisture content of wood is defined as the weight of water in wood expressed as a fraction, usually a percentage, of the weight of oven-dry wood. Weight, shrinkage, strength, and other properties depend upon the moisture content of wood. When cellulose fibers are exposed to moisture, the first water molecules are absorbed directly onto the hydrophilic groups of the fiber material and after that, the other water molecules are attracted either to other hydrophilic groups or they may form further layers on top of the water molecules already absorbed. Density is one of physical properties which depends the weight of the wood structure and moisture retained in the wood. other physical properties is porosity which is for fibre porosity is related to the volume fraction of the lumens. This study was more focused on loose *Meranti* fibers. Fibers is sieved to get sizing for further work. Then continued with experiments to identify its moisture content which is by getting the amount of water absorb in fibers and the levels decrease of fibers after moisture absorption. Other experiments are done to analyze porosity and bulk density. Value of voidage affects porosity which higher its value means greater porosity which can absorbs more moisture.

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