



**INFLUENCE OF PARTICLE SIZE IN NATURAL DRYING OF COMPACTION ON
FIBROUS MATERIAL : SEM MICROSTRUCTURE ANALYSIS**

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In prosperity the friend knows us...

In adversity we know the friends..

ABSTRACT

Incense is a preparation of aromatic organic materials, intended to release fragrant smoke when burned. This study is detailed on physical and mechanical characteristics of fibrous material which is wood as based material. This study more in natural absorption, compaction and several technique of drying microstructure. This is comparison between fines fibrous with all the samples above. This project is decide to make in three sizing of fibre , 150 μ m, 90 μ m and 53 μ m. This analyze is doing by using scanning electron microscope (SEM) .By using this machine, the data which is can get from the SEM monitor is analyse in order to get the optimum result. The fibrous is making in pallet size which is water as a binder. The study also consist a data of the best rate of burning. To produce a better quality of incense, the rate of burn should be longer rather than normal incenses exist. Study on microstructure of pallet is analysis how to increase the production of incense in mechanical engineering scope. This study is more detailed on porosity, moisture content and interbonding occurs between the particles.

TABLE OF CONTENT

CONTENTS	PAGE
ACKNOWLEDGEMENT	i
ABSTRACT	ii
TABLE OF CONTENTS	iii
LIST OF ABBREVIATION	vi
LIST OF FIGURES	vii
LIST OF TABLES	ix

CHAPTER 1 INTRODUCTION

1.1	PROJECT OBJECTIVES	2
1.2	SCOPE OF THE PROJECT	2
1.3	PROBLEM STATEMENT	3
1.4	SIGNIFICANT OF THE PROJECT	3
1.5	THE CHAPTER ORGANIZATION AND SYNOPSIS	3

CHAPTER 2 LITERATURE REVIEW

2.1	WOOD PROPERTIES	
2.2	MOISTURE CONTENT OF WOOD	
2.3	FIBROUS CHARACTERISTICS	
	2.3.1 COMPACTION TECHNIQUE	
2.4	DRYING TECHNIQUE	
2.5	SCANNING ELECTRON MICROSCOPE (SEM)	

CHAPTER 1

INTRODUCTION

Firstly, this project is a grouping project. The main idea of this project is on incense making analysis in mechanical engineering scope. This project is supposedly use *agarwood* as a raw material but since *agarwood* is quite expensive and it quite to find, so the project are replaced by wood fibrous. The preparing of the samples are done by five member because the pelletizing of the samples have been make manually because it not exist yet in already market but each of members is studied in different scope. This paper is more focused on influence of sizing of particle in *SEM* scope. Then, the paper also studied detailed in the physical characteristics that involve in compaction of fibrous which by dried at room temperature, 20°C . The compaction techniques that will be analyzed are axial compaction. This project is more based on incenses production in Malaysia. Incense is composed of aromatic biotic materials, which release fragrant smoke when burned. The term *incense* refers to the substance itself, rather than to the odor that it produces. In most production of incenses, the products itself mixed with water are combined with the fragrance and incense base mixture. But, in this study, the incenses produced will only used fiber wood and mixed with water as a binder. This is because only want the natural odor produced from the wood itself. Incense is a preparation of aromatic organic materials, intended to release fragrant smoke when burned. The constituents of the visible smoke comprise not only the combustion products and liberated particulates common to burning organic materials, but also (and