

**BLEACHING PROCESS OF KEKABU (CEIBA SPP)  
USING SODA AQ PULP**

**By**

**AISHAH BT MD YUNOS  
NORAZIRA BT MOHD SAYUTI  
NURNAZIRAH BT MAHAMAD**

**Final Project Submitted in Partial Fulfillment for Diploma in Wood Industry**

**Faculty of Applied Sciences, MARA University of Technology Pahang**

**NOVEMBER 2008**

## ACKNOWLEDGEMENT

Assalamualaikum warahmatullahi wabarakatuh.....

First of all, we would like to thank to the Almighty ALLAH S.W.T for He Blessing and Strength rendered to us to complete our thesis about Bleaching process of Kekabu (*Ceiba spp*) using Soda AQ.

To our advisor, Miss Noorshashillawati Azura Bt Mohammad whose willingness to contribute her knowledge, time and effort till we had completed our final project for guiding, reading and offering comment as the project involved. We gratefully acknowledge her helpful suggestion. Not forgotten to second advisor Mr Amran B. Shafie for his guided and assistances.

Also, a lot of thanks should been given to all of lecturers and staff in Department of Wood Industry Universiti Teknologi MARA especially Miss Mazlin Bt Hj. Kusin as Head Program for their help during our three years studies in this UiTM. Deep appreciation to Associate Prof. Madya Dr. Jamaludin Kasim as Coordinator Final Project (WTE 375).

We also would like to thanks to all our friends because they were given a lot of cooperation to make this project paper become successfully. Without them, this project will become difficult.

Lastly, we wish to our special gratitude to our beloved parents and family for their support throughout my study period.

# TABLE OF CONTENT

CONTENT	PAGE
TITLE PAGE.....	-
APPROVAL SHEET.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iii
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF PLATES.....	ix
LIST OF ABBEREVIATIONS.....	x
ABSTRACT.....	xi
ABSTRAK.....	xii

## CHAPTER 1

### 1.0 INTRODUCTION

1.1 General.....	1
1.2 Problems Statement.....	3
1.3 Justification.....	4
1.4 Objective.....	4

## CHAPTER II

### 2.0 LITERATURE REVIEW

2.1	Pulping.....	5
2.2	Kekabu ( Ceiba )	
2.2.1	Fields Characteristic Of Kekabu.....	6
2.2.2	Properties Of Kekabu.....	8
2.2.3	Uses Of Kekabu.....	9
2.3	Chemical Pulping.....	10
2.4	Soda Pulping.....	10
2.5	Bleaching.....	12
2.6	Element Chlorine Free (ECF).....	15
2.7	Kappa Number.....	16
2.8	Brightness.....	16
2.9	Fiber Bonding.....	17
2.10	Effect of lignin on Fiber Bonding.....	18

## CHAPTER III

### 3.0 MATERIAL AND METHOD

3.1	Raw material.....	19
3.2	Chemical.....	20
3.3	Soda cooking.....	20
3.4	Screening.....	23
3.5	Kappa Number Preparation.....	24
3.6	Stock Preparation (Bleaching).....	24
3.7	Freeness Test.....	26
3.8	Paper Making.....	26
3.9	Paper Cut.....	27

## ABSTRACT

The research is about the bleaching process from Soda AQ Pulping. Kekabu are used as raw material. NaOH are used as chemical active material and in this experiment, the amount of NaOH is 20%. The chemical additive that use is AQ in amount about 0.1%. bleaching process involve two sequence, DEDEH and DEHED and the process done by using Water Bath. The paper testing are followed by ISO Standard to determine the physical properties of paper. While between the bleaching sequences, DEHED has better paper properties than DEDEH, but for brightness test, DEDEH is better than DEHED. Generally, unbleached pulps have better result than bleaching pulp. This is because during bleaching by using chlorine dioxide besides remove the remaining lignin, it also attacked cellulose, thereby will reducing pulps strength.