

**PERFORMANCES OF NITROCELLULOSE LACQUER AND ACID
CATALYST LACQUER ON GIAM (*Hopea* spp.)**

IZZATTIE BINTI MOHD SALUJI

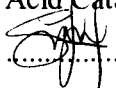
**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Furniture Technology
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

JULY 2019

CANDIDATE DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as reference work. This proposal has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event my thesis is found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulation of Universiti Teknologi MARA.

Name of Candidate : Izzattie Binti Mohd Saluji
Candidate's Id No : 2016668334
Programme : Degree of Bachelor of Science (Hons.)
Furniture Technology (AS247)
Faculty : Applied Sciences
Thesis Title : Performances of Nitrocellulose Lacquer and
Acid Catalyst Lacquer on Giam (*Hopea* spp.)
Signature of Candidate : 

Date : JULY 2019

TABLE OF CONTENTS

	Page
CANDIDATE DECLARATION	iii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF PLATES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1 INTRODUCTION	1
1.1 Background of the study	1
1.2 Problem statement	3
1.3 Significant of study	3
1.4 Objectives of study	4
CHAPTER 2 LITERATURE REVIEW	5
2.1 Raw material	5
2.2 <i>Hopea</i> spp.	5
2.2.1 Physical properties	6
2.2.2 Working quality	6
2.2.3 Uses	7
2.3 Finishing testing	7
2.3.1 Household test	8
2.3.2 Burn test	8
2.3.3 Cross cut peel test	8
2.4 Finishing materials	9
2.4.1 Solvent-based	10
2.4.2 Sealer	10
2.4.3 Nitrocellulose lacquer	10
2.4.4 Acid Catalyst lacquer	11
CHAPTER 3 MATERIALS AND METHOD	13
3.1 Materials	13
3.2 Preparation method	13

3.3	Method of testing	14
	3.3.1 Flow chart	15
3.4	Experimental design	16
3.5	Sanding process	17
	3.5.1 Sandpaper	17
3.6	Finishing process	17
	3.6.1 Fork cup	18
	3.6.2 Spray gun	19
3.7	Finishing testing	20
	3.7.1 Household test	20
	3.7.2 Burn test	23
	3.7.3 Cross cut peel test	24
3.8	Statistical analysis	26
CHAPTER 4 RESULTS AND DISCUSSION		27
4.1	Significance of test results	27
4.2	The effect of different types of lacquers on giam based on testing	28
	4.2.1 Household test	28
	4.2.2 Burn test	29
	4.2.3 Cross cut peel test	30
4.3	The effect of different finishing system on giam based on testing	31
	4.3.1 Household test	31
	4.3.2 Burn test	32
	4.3.3 Cross cut peel test	33
CHAPTER 5 CONCLUSION AND RECOMMENDATIONS		34
5.1	Conclusions	34
5.2	Recommendations	35
CITED REFERENCES		36
PUBLICATION OF THE PROJECT REPORT UNDERTAKING		37
PERMISSION FOR REFERENCES AND PHOTOCOPYING		38
EVALUATION OF FINAL YEAR PROJECT REPORT		39
CURRICULUM VITAE		40

ABSTRACT

PERFORMANCES OF NITROCELLULOSE LACQUER AND ACID CATALYST LACQUER ON GIAM (*Hopea* spp.)

Finishing is an important process to decorate and the process is the last of a sequence of manufacturing actions. This study was being conducted to determine the finishing properties of giam (*Hopea* spp.) by using two different types of solvent-based lacquer which are nitrocellulose lacquer and acid catalyst lacquer. The main objectives of this study are to determine the finishing properties of giam by using different types of coating and to determine the best coating system using different finishing that suitable to be applied on giam. All the samples were being tested by using three (3) types of systems for both lacquers which are system 1 (2 layers of sealers + 1 layer of topcoat), system 2 (2 layers of sealers + 2 layers of topcoats), and system 3 (2 layers of sealers + 3 layers of topcoats). The application of all systems is using spray gun. From this study, system 3 of acid catalyst lacquer showed the best performances compared to others.