

**PROPERTIES ROUGHNESS OF SAND PAPERS AND LAYERS OF SHELLAC ON
ACACIA MANGIUM WOOD**

NIK MOHD IZWAN BIN ABDULLAH

**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for The
Degree of Bachelor of Science (Hons.) Furniture Technology
In the Faculty Applied Science
University Teknologi MARA (PAHANG)**

JUNE 2014

ACKNOWLEDGEMENTS

Bissmillahirrahmanirrahim,

Alhamdulillah. Thanks to Allah SWT, whom with His willing giving me the opportunity to complete this Final Year Project which is title “**Properties Roughness Of Sandpapers And Layers Of Shellac On Acacia Mangium Wood**”. This final year project report basically for student in final year to complete the undergraduate program that leads to the degree of Bachelor of Science in Furniture Technology. This report is based on the methods given by the university

Firstly, I would like to express my deepest thanks to, Miss Zaimatul Aqmar Binti Abdullah, a lecturer at University Technology Mara Jengka and also assign, as my supervisor who had guided be a lot of task during to complete this final year project. I also want to thanks the lecturers and staffs of Furniture Technology for their cooperation during I complete the final year project that had given valuable information, suggestions and guidance in the compilation and preparation this final year project report.

Most of thanks and appreciation to my parents, family, my special partner, etc.for their cooperation, encouragement, constructive suggestion and full support for completion report, from beginning to end. Also thanks to all of my friends and everyone, that have been contributed by supporting my work and help myself during the final year project progress till it is fully completed.

Finally, thanks to all parties involved in the completion my final year project. Thank you so much.

TABLES OF CONTENTS

	Page
DEDICATIONS	ii
ACKNOWLEDGEMENTS	iii
TABLES OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1 INTRODUCTION	
1.1 General	1
1.2 Problem Statement	5
1.3 Objectives	6
CHAPTER 2 LITERATURE REVIEW	
2.1 Wood Finishing	7
2.2 Differences Grit of Sand Paper	10
2.2.1 Introduction	10
2.2.2 Industrial Implications	12
2.2.3 Preliminary Literature Review	13
2.3 Shellac	19
2.3.1 Description	19
2.3.2 History shellac	20
2.3.3 Raw material	22
2.4 Acacia Mangium	24
2.4.1 General Descriptions	24
2.4.2 Taxonomy	25
2.4.3 Botany	26
2.4.4 Distribution	27
2.4.5 Ecological Range	28
2.4.6 Wood Characteristics	29
2.4.7 Uses	30
CHAPTER 3 METHODOLOGY	
3.1 Materials	31
3.1.1 Logging	32
3.1.2 Debarked and Rough Size	32
3.1.3 Wood Drying	32
3.1.4 Cut into Size	33

3.2 Methodology	33
3.2.1 Surface Preparation	33
3.2.2 Brush	34
3.3 Finishing Testing	35
3.3.1 Pencil Hardness Test	35
3.3.2 Scratch Test	36
3.3.3 Surface Roughness Test	38
CHAPTER 4 RESULTS AND DISCUSSIONS	
4.1 Comparison between Grit Papers and Layers	39
4.2 Grit Papers	41
4.3 Layers	44
CHAPTER 5 CONCLUSION AND RECOMENDATIONS	48
REFERENCES	50
APPENDICES	52
CURRICULUM VITAE	59

ABSTRACT

PROPERTIES ROUGHNESS OF SAND PAPERS AND LAYERS OF SHELLAC ON ACACIA MANGIUM WOOD.

Finishing is the final process in the manufacture of furniture. But, it is the most important process that will determine the value of the furniture. *Acacia Mangium* wood was among the most famous wood used to make furniture. The purpose of this study was to investigate the effect of the roughness of sandpaper and different layers of shellac on the wood of *Acacia Mangium*. There are three tests used in this study including pencil hardness, surface roughness, and scratch test. For the roughness of sandpaper are used, there are three types, namely 120, 240 and 320 micrometers. However, the roughness of sandpaper 120 produces the best results and followed sandpaper 240 and 320. During this test showed significant results with each other. Moreover, the difference shellac coatings used are 1, 2 and 3 layers. After performing the test, it is found that 3 layers give the best durability for wood and followed by 2 and 1 layer. However, 2 and 3 layer does not affect significantly the pencil hardness test.