

**FINISHING PROPERTIES OF POLYURETHANE, NITROCELLULOSE AND
ACID CATALYST BASED COATINGS ON PETAI (*Parkia species*)**

By

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This study attempts to evaluate the surface properties of finished Petai (*Parkia speciosa*) coated with different finishing system. Three (3) types of commercial lacquer namely Acid Catalyst (AC); Nitrocellulose (NC) and Polyurethane (PU) based were used in this study. Four (4) types of treatment which include System A (wood filler + sanding sealer + topcoat), System B (sanding sealer + topcoat), System C (wood filler + topcoat (3 times coated) were used. The quality of finishes were evaluated in term of gloss, adhesion, abrasion, impact, heat resistance cold check scratch and resistance to household, chemical and solvent. It is concluded that, Polyurethane lacquer is the best among three (3) selected coating material followed by Acid Catalyst and Nitrocellulose respectively. PU lacquer shows good resistance against impact, scratch, gloss, cold check and resistance to household, chemical and solvent. System C is the best surface treatment compared with other system. The types of lacquer and treatment greatly influenced the performance of the finished surface. This study suggests that the selection of finishes and the type of treatment are important to ensure good finish performance.

CHAPTER 1

INTRODUCTION

1.1 General Overview

The rises and growths of wood industry in the future are predicted to be no longer able to depend on the supply of natural forest species. With the decrease in areas of forest logging every year, production will continue to decline and perhaps will not be able to meet the demands for wood industry in the country which are continue to rise, especially the demands of the furniture industry. (Yani, 1998)

In order to ensure enough and continuous supply of timber planting of forest species should be commercially established. Therefore, in order to establish suitable wood resource for existing and future forest industry, amount of study on species suitable in terms of genetics, soil type, growth rate, wood quality have been carried out by both government and forest industry. These new species being studied include Petai (*Parkia species*).

If Petai is to gain acceptance as a raw material for furniture component, it should also possess good finishing characteristics. In furniture making, finishing will come at the final stage. However, it is the most critical in furniture manufacturing (Scharff, 1971). Selecting the right materials and equipment are important for high