



**INVESTIGATION ON THE EFFECT OF KENAF DUST ON
MECHANICAL PROPERTIES OF AUTOMOTIVE BRAKE PAD**

RUZANNA INANI BT ZAHARIM

(2006690496)

A thesis submitted in partial fulfillment of the requirement for award of Bachelor of
Engineering (Hons.) in Mechanical Engineering

Faculty of Mechanical Engineering

Universiti Teknologi MARA (UiTM)

MAY 2010

ACKNOWLEDGEMENT

First and foremost I would like to thank the Almighty and the Greatest Power, Allah for the completion of this thesis. Perhaps, I am very thankful to my supervisor who guides me, friends and family which had been very supportive and give me strength even to the technicians for the supports, encourage, and help me to succeed this study. Thank you for all of your kindness.

ABSTRACT

This study focused on the investigation of the mechanical properties of automotive brake pad composed with Kenaf powder. The usage of Kenaf powder in automotive brake pad has not been developed yet compared to Kenaf powder composite which is now very popular in terms of the mechanical properties. Kenaf powder has lots of advantages in such a way where it is known as low density, high specific strength and modulus and wide availability. Additionally, in this study, specimens are composed with (4% and 20%) wt of Kenaf powder and (96% and 80%) wt of brake pad composition. To obtain the Kenaf powder, it needs to be sieved to have the wanted size. During the specimen's preparation, safety is very important especially while handling the hot press machine. All the specimens will undergo the hardness and impact test. The average result of hardness and impact will be compared to the commercial brake pad to see which will give higher or lower value. It is recommended to proceed with friction and wear test to investigate the tribological properties.

TABLE OF CONTENTS

CONTENTS	PAGE
ACKNOWLEDGEMENT	i
ABSTRACT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	viii
LIST OF FIGURES	x

CHAPTER I

INTRODUCTION

1.1 Kenaf

Kenaf is a natural fibre which can be found in mostly Asia. Kenaf fibre has the advantages such as low cost, low density, high toughness, recycling, specific strength properties, ease of separation, enhanced energy recovery and biodegradable. Normally kenaf fibre is used for carpet padding, poultry housing bedding, oil-absorbent, animal litter, a glass fibre substitute in molded plastic and animal forage. But recently, natural fiber in composite application is the most popular issue. Perhaps, in this report, the kenaf fibre properties need to be determined in order to compose the natural fiber with the automotive brake pad.