MECHANICAL PROPERTIES OF POLYPROPYLENE BLENDS WITH BANANA FIBRE

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Final Year Project Report Submitted in

Partial Fulfilment of the Requirements for the

Degree of Bachelor of Science (Hons.) Polymer Technology

in the Faculty of Applied Sciences

Universiti Teknologi MARA

MAY 2008

ACKNOWLEDGEMENTS

First and foremost, all praise to Allah because of the blessing from Him and by giving me the strength that I never have before until I can finish my entire thesis report.

Firstly, I would like to give an abundance of thankfulness towards my beloved supervisor Dr. Siti Zaleha Sa'ad for her kindness and professional guidance, advices, and improve my self-esteem at the same time. And also, thanks to my Head Program Dr. Azmi Samsuri for his advices and last but not least to Puan Monarita. Not forget to all Polymer Technology Laboratory Assistant for their cooperation in technical operation as well as technical assistance for accomplishes this thesis.

Thanks to my family and friends because of their great supportive either mentally or physically in order to complete this thesis project.

Nur Ainni Md Shariff

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ABSTRACT

MECHANICAL PROPERTIES OF POLYPROPYLENE BLENDS WITH BANANA FIBRE

Fiber Reinforced Polymer (FRP) composites is defined as a polymer matrix (thermoset or thermoplastic) combined with a fiber or other reinforcing material to provide discernable reinforcing function in one or more directions. The benefits which is including light weight, directional strength and other properties makes the FRP composites famous in the automotive, building and plastic industries. PP has been widely used in plastic industry and the price has been increase. The banana plant or Musaceae's fibers are usually for high quality textiles. The banana stems fiber is mix with PP resins in order to reduce cost and to create new types of composites. The physical testing is carried out to know and compare within all these composites. By comparing all composites, it showed that composites 3 percent of banana fibers and 97 percent of PP resins will gives good physical properties compares to others mixes.

CHAPTER 1

INTRODUCTION

New types of composite materials can be born by combining different resources. By combining two or more materials, a new material which can be better than the individual components can be produce.

Combining natural fibers with thermoplastics is a great new achievement development. Now a day, plastics account for an increasing municipal solid waste and the prices of oil and gas is soar (Qinglin Wu, 2007). Therefore by adding the natural fiber into the plastics may provide a cost reduction to the plastic industry. The natural fibers might also increasing the plastic properties such as toughness, tensile strength, impact strength, light in weight, thermal resistance and also chemical resistance.

Polypropylene with adding of banana fibers was used to create a new type of composite material. This banana fiber was used as a reinforcement to give some strength to PP. By using banana fibers, it can reduce the cost of operation and the use of PP.