

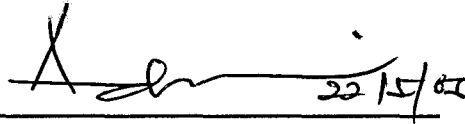
**THE EFFECTS OF PARTICLES SIZES (SEA-SHELL) ON POLYMER
COMPOSITE PROPERTIES**

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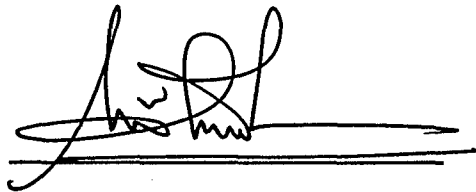
**Thesis Submitted in Partial Fulfillment of the Requirements for the
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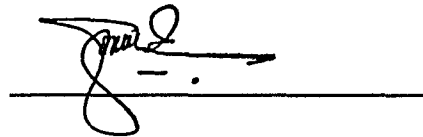
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ABSTRACT

THE EFFECTS OF PARTICLES SIZES (SEA-SHELL) ON POLYMER COMPOSITE PROPERTIES

The particulate filler of sea shell properties varies for different sizes at 0.5mm and 1.0 respectively. The composites contain 10, 30 and 50 by weight percent with both particles size of seashell. The aim of this study is to compare the effects of polymer composite properties of different particles sizes. This particulate filler is non-reinforcing filler for both size gives low tensile strength and flexural strength properly. The finer particles sizes of sea shell give the better properties for water absorption because of it not absorbs water very well. But it is not become significance in flammability test since it was easily burned. The finer the particle sizes does not give significance different in the effect of the particles sizes (seashell) on polymer composites.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The sea-shell is usually made of nacre, an organic mixture of outer layers of horny conchiolin (a scleroprotein), followed by an intermediate layer of calcite or aragonite, and then a layer of calcium carbonate (CaCO_3) in the form of platy crystals (*F.D. Ommanney, 1994*).

A reinforced thermoplastic is a neat resin that has been reinforced or modified by one or more additives. These additives can be particulate fillers or fibrous reinforcement. Fillers are minerals, metallic powder, glass spheres, and organic materials, and are used to increase stiffness, reduce mold shrinkage, afford flame resistance, improve processing and can lower costs to the compounded (*Donald R Askeland, 2003*)

Calcium carbonates are popular additives for plastics because of their excellent combination of low cost, high brightness, and the ability to be used at high loadings. They generally are categorized as extenders rather than as reinforcements, since they are used for cost reduction and provide little in the way of strength improvement. Extenders are nonmetallic powders added to replace the more