



**COMPARATIVE STUDY ON AIR FILTER PRODUCTS IN AIR
CONDITIONING INDUSTRY**

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

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OKTOBER 2004

ACKNOWLEDGEMENT

Praise to Allah S.W.T we have managed to complete this project. We are grateful to many individuals for their assistance in the completion of this project.

Firstly, we would like to convey our utmost sincere appreciation to our project advisor, Assc. Prof. Ir. H.S.Loo, for being extremely supportive and for his guidance, advice, comment, assistance and patience upon the completion of this project.

Our gratefulness goes to many people especially to our family and classmates for their support. To those who had given their cooperation directly or indirectly to the successfulness of this project, we to thank you for all your help.

Oktober 2004

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ABSTRACT

Air-conditioning is generally defined as a process to make the environment in an enclosed space as comfortable as possible. This means to filter the air from impurities and then to cool or heat the purified air. When air went through cooling process, the humidity content of the cooled air will decrease. When the humidity content of the air is below comfortable level, the level of humidity needs to be raised and it is done by a spraying mechanism. The spraying mechanism will add water to the cooled air.

In air-conditioning application, the process of purifying the intake air is very important aside from cooling or heating the air. In quite a few areas in industry, the air needs to be purified to the highest degree because even a very small impurity can damage the product. An example of industry requiring a very high degree of air purifying is the manufacturing of computer hard disk. A hard disk has a read/write head which moves around a plate spinning at a very high speed (5400 to 7200 rpm). The head does not actually touch the plate because it will damage the data stored on the surface of the plate and also itself. So, the head just hovers above the spinning plate with the gap between them in micro meter unit. Thus, even extremely small impurities in the intake air of the air conditioning system will damage the manufacturing of the hard disk.

➤ The most common type of air filter is fiber-based filter. Usually, this type of air filter is either in paper or wool form. The impurities in air are trapped in the pores of the paper or in the pores created in between layers of wool. There are also a few air filters where the fiber is made from plastic which have a web of fine spores to entrap the impurities in air. These are the very pioneers of air filter technique.

Modern technologies have brought new techniques to filter the impurities in air. Methods such as static charges, ion reaction and water bath air filter have been used in air conditioning system. In some cases, not only it filters the impurities in the intake air but it also refresh the content of the intake air which might become stale due to continuous circulation.

CHAPTER I

INTRODUCTION

1.0 Background Of Project

We will study in detail about the air filters products in air conditioning industry. At the beginning of this project, we do some literature review by doing initial research in internet, books and journals. We also request some information from various suppliers about the air filter products. At the end of this project, we can develop understanding of parameters that affect the air filter efficiency.

1.1 Objective Of Project

The main objective of this project is to do comparative study of air filters products in air conditioning industry which cover home and commercial application. In order to do the comparison, we must study and develop understanding about air conditioning air filters and their different mechanism.