

**PHYSICAL STRENGTH OF COMMERCIAL  
ACTIVATED CARBON FROM  
COCONUT SHELL**

**By:**

**JASMANI BIN PUTEH**

**Under the supervision of**

**Dr Ku Halim Ku Hamid**

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**Faculty of Applied Science  
Universiti Teknologi MARA  
Shah Alam**

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## **ABSTRACT**

The purpose of this thesis was to determine the comparative strength of commercial activated carbon using of 'Strength Testing Kit Model KH98002' taken from industrial sample. The strength of AC were determine based on KuHalim Method and presented in term of broken percentage or original size percentage. Beside that, porosity of AC were determine using iodine number and methylene blue number. There were six samples has been tested. From the result that obtained, we had found that the sample 2 had greater strength in the experiment. The original size percentage for sample 2 was 86.13%. The highest iodine number and methylene blue decolourising power for sample 5, 267, and sample 3, 14.97ml/g respectively. This previous work can assist in handling and monitoring the testing kit properly for the following thesis.

# CHAPTER 1

## INTRODUCTION

At present there is no acceptable test available to characterizes the friability of granular media in term of its ability to withstand handling, piacing and during its application. Filtering material or media such as activated carbon is exposed to possibility three conditions, which could cause breakage of the granule. There are:

1. After **manufacturing process**, the material is transported in bulk or packed in sacks or bags. During installation of the material, especially for the larger filters it may be difficult to complete without treading each other. Bags are usually up-ended and the material at the bottom is subjected to compression and shear.
2. During application of the material, **back washing practice** especially with combined air with water, the grains tend to rub over each other, causing abrasion. More grains that are delicate may break up or be abraded away.
3. Lastly, the **pressure loss** in service compresses the media. The attrition testing kit that has been developed will useful to determine strength of the granular media of commercial activated carbon from coconut shell (Ku Halim, 1998).