

UNIVERSITI TEKNOLOGI MARA

**PREPARATION OF HIGH SURFACE AREA
ACTIVATED CARBON FROM ARECA NUT FOR
SUPERCAPACITOR**

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The Final Year Project entitled “**Preparation of High Surface Area Activated Carbon from Areca nut for Supercapacitor**” was submitted by Nur Basiroh Binti Mohd Rahim, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Physics, in the Faculty of Applied Sciences, and was approved by

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AUTHOR'S DECLARATION

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ABSTRACT

PREPARATION OF HIGH SURFACE AREA ACTIVATED CARBON FROM ARECA NUT FOR SUPERCAPACITOR

A supercapacitor (SC) is an electrochemical capacitor with capacitance values far higher than regular capacitors. Electrodes made from activated carbon can offer great power and energy capacity and can be made from a variety of raw materials. The activation agent is sodium hydroxide (NaOH) while the raw material is areca nut waste. The purpose of the research is to examine the effects of mixing activating chemicals in various ratios and to learn how to make activated carbon from areca nuts utilizing chemical activation with NaOH as an activator agent. It is a highly versatile product that can be utilized in various applications. Areca nuts would dried in a furnace at temperatures between 200°C to 300°C for an hour. At the end of this experiment, chemical analyses of the finished product revealed the carbon yield and ash content percentages by using a mathematical formula equation approach.

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