

**THE DEVELOPMENT ON THE  
HEAT AND EFFICIENCY CHARACTERIZATION OF  
TRIPLE EXPOSURE BOX TYPE SOLAR COOKER**

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**(2006690073)**

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

**Faculty of Mechanical Engineering  
Universiti Teknologi MARA (UiTM)**

**MAY 2010**

“I declared that this is the result of my work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree.”

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## **ACKNOWLEDGEMENT**

In the name of Allah, the Most Beneficent and Merciful, first of all I would like to express my gratitude and appreciation to my project advisor, Mr. Zainoor Hailmee Solihin for his willingness to supervise me in completing this Final Year Project. His continuously patient guidance, valuable advice, constructive criticisms and repeated encouragement throughout this project have made it possible to complete my project. I also would like to thank to Miss Rafiza Abdul Rahman from Institute Of Sciences, University Technology of MARA for giving valuable information about environmental conditions that used in completing this project. My gratitude goes also to my fellow friends namely Aizuddin Abdul Hamid, Addy Rizal Hashim and Dukhan Abdul Rahim for their full cooperation and ideas to complete this project. My appreciation also pointed to Thermodynamic Laboratory Technical Assistant for allowing me to borrow XR440 Pocket Logger regarding the product testing. Lastly, I would like to thank to my family for their help and patience during the course of thesis project, my classmate and lecturers, who give me full support on the completion of my course.

## ABSTRACT

The use of solar cooker is much needed in many regions with good solar radiation intensity throughout the world. The reasons are economical, as the price of fuel for cooking is no longer affordable by many families, ecological as in many regions deforestation is also associated with the use of wood as an energy source, and social as the money used to buy fuel could be used to buy foods, medications and other needs to improve the quality of life. This project presents the development on the solar oven, their basic characteristics and experimental procedure to test the triple exposure box type solar cooker. The project's objectives are to determine the heat transfer for the triple exposure of box type solar cooker and the suitability of Malaysia climate for solar thermal. Beginning on the early stage, the researcher will study about the box type solar cooker (also called solar oven). The solar oven needs to collect and trapped the heat inside the box in order to cook the foods. For this reasons, the solar oven is design to have the side that exposed to the sunlight that is made by glass. In this project, the researcher used the triple exposure side of solar oven. The solar even has been tested in order to investigate its performance. Thermocouple and pocket logger XR440 was used to determine the temperature inside the solar oven. As a result, the heat transfer through the solar oven has been determined. The performance of solar oven also been recorded. This result will be used to determine the suitability of Malaysia climate for solar thermal application especially for cooking.

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