FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

PULAU PINANG

FINAL REPORT:

SOLAR CHARGE CONTROLLER WITH SOLAR FAN

RAFHAN AMNANI BINTI RAHMAT

AWATIF NAZURAH BINTI ABDUL RAHMAN

SUPERVISOR:

CIK NURLIDA BINTI ISMAIL

This report is submitted to the Faculty of Electrical Engineering,

Universiti Teknologi MARA (UiTM).

In partial fulfillment of the requirement for the award of Diploma in Electrical Engineering.

This report is approved by:

.....

Supervisor's name

(CIK NURLIDA BINTI ISMAIL)

Date: 06/10/2016

ABSTRACT

This project is about the use of a controller in a typical off-grid solar panel installation. Charging batteries with solar power is great on the environment and for batteries. Charging and maintaining batteries through solar will result in better battery performance and longer battery life. With solar chargers rated 15 watts or more, the use of a controller is recommended. It also comes to no surprise that once a battery reaches maximum charge but the sun keeps shining on the solar panel, causing power to constantly flow to the battery, the battery risks on being overcharged. Thus, solar controllers regulate the voltage output from the solar panel and prevent batteries from being overcharged. There are normally three types of solar charge controller used in a solar panel installation, namely the maximum power point tracker (MPPT), Pulse Width Modulation (PWM) and the conventional controller made up of ICs. This project is the implementation of conventional controller by using the LM358 operational amplifier IC and FQP27P06 P-channel MOSFET.

ACKNOWLEDGEMENT

In the name of Allah, The Most Compassionate and The Most Merciful. First and foremost, we thank Allah for providing us health and time to complete the final year project as a requirement to graduate for the Diploma.

Next, we would like to offer our sincere gratitude to our parents, for giving us support mentally and financially throughout the journey and for never allowing us to give up. Also, the rest of our family and friends for always offering us word of support and encouragement. Not to forget our lecturers in Universiti Teknologi MARA Kampus Permatang Pauh, Cawangan Pulau Pinang, especially our supervisor, Cik Nurlida Ismail for her guidance and tutoring us on our final year project.

Last, but not least, a special gratitude towards everyone who has helped us throughout the completion of the project. It is with their never-ending guidance and support that we were able to successfully finish our final year project.

TABLE OF CONTENTS