

FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

PULAU PINANG

FINAL REPORT:

ECO-FRIENDLY SIDEWALK LIGHTS

NOOR DYNA QURRATUAINY BINTI ABDULLAH

NURUL AWATIF BINTI ABDUL RAHIM

SUPERVISOR:

PUAN NAZIRAH MOHAMAT KASIM

**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 :

.....

(PUAN NAZIRAH MOHAMAT KASIM)

(SUPERVISOR)

Date :6/10/2016.....

ABSTRACT

Eco-friendly Sidewalk Lights is designed to save the energy of electricity of light. This project consists of PIR motion sensor and LDR sensor. The project will operate when there is a motion that detect by PIR motion sensor. This sensor will detect movement through picking up infrared waves. When someone emits infrared waves, the detector is able to detect the wave and it react to switch ON the light automatically. Besides, LDR sensor is use to detect the day and night. LDR sensor operate functionally at night only and the light will turn ON.

Furthermore, the microcontroller of PIC16F877A as a brain to control circuit so that the project can functionally operates. This project is design by using Proteus 7 software.

ACKNOWLEDGEMENTS

Bismillahirrahmanirrahim. In the name of Allah, the most compassionate, the most merciful. Thanks to Allah SWT for giving us the opportunity to complete this Final Year Project titled Eco-friendly Sidewalk Lights. First and foremost, we would like to express our sincerest and gratitude to our supervisor, Puan Nazirah Mohamat Kasim, who guided, helped and encouragement us to complete and coordinate our project during 2 semesters. Our supervisor had helped us a lot by simulating suggestions and encourage us in preparation and writing this report.

We would like to extend our appreciation to the staff of Electrical Laboratory, who had given us the permission to use all the machinery and material in the lab to complete the hardware project. Besides, they also give valuable information and provide guidance if we do not know how to handle the work.

Lastly, we offer our regards and blessings to our colleagues and all of those who supported us to complete the project.

TABLE OF CONTENT

ACKNOWLEDGEMENTS..... iii

ABSTRACT.....iv

LIST OF FIGURES.....v

LIST OF TABLESvi

LIST OF ABBREVIATIONS..... vii

CHAPTER 1 INTRODUCTION1

 1.1 Background of Study.....1

 1.2 Problem Statement2

 1.3 Objectives of Research.....2

 1.4 Scope of Study3

CHAPTER 2 MATERIALS AND METHODS4

 2.1 Methodology.....4

 2.1.1 Design flow chart of project.....4

 2.1.2 Design flow chart of sidewalk lights system.....4

 2.2 Experiment setup7

 2.3 Equipment and component8

 2.3.2 Data of the equipment and component9

CHAPTER 3 CIRCUIT DESIGN AND OPERATIONS.....14

 3.1 Schematic Diagram14

 3.1.1 Software Development.....14

 3.1.2 Hardware Development17

 3.2 Printed Circuit Board Layout.....18