# AUTOMATIC FLOOR CLEANER

# AMIRUL AIZZAT BIN ABD RAHIM NUR SYAHIRAH BINTI MAHTAR

A project report submitted to the Faculty of Electrical Engineering, Universiti Teknologi MARA in partial fulfillment of the requirements for the award of Diploma of Electrical Engineering.

# FACULTY OF ELECTRICAL ENGINEERING UNIVERSITI TEKNOLOGI MARA MALAYSIA

SEPTEMBER 2015

#### ACKNOWLEDGEMENT

First of all, we would like to thank Allah for his firm hands in guiding us to complete this report writing. We would like to show our highest gratitude to my supervisor, Miss Siti Aminah Binti Nordin for continued support, guidance, encouragement and tolerance throughout the process of completing this FYP project. We have learnt a lot and all this would not be without her guide.

We would like to express our appreciation to all lecturers in Faculty of Electrical Engineering for co-operation, help and sharing information and knowledge together for our project until the end. It not be possible without the help from lecturer in this faculty.

Finally, we would like to thanks to our parents, sibling, family and friend who have giving us the support, love and words of encouragement in the way to finish our FYP project and making our final year of undergraduate course more enjoyable.

## ABSTRACT

Manual work is taken over the robot technology and many of the related robot appliances are being used extensively also. Here represents the technology that proposed the working of robot for Floor cleaning. This project has been realized that people at home are too busy for daily or weekly floor cleaning, especially for families with children. The elderly who lives by themselves do not have the strength or ability to clean by themselves, and the cost of hiring a maid is expensive. Out in the industry, nightly office cleaning almost always includes vacuuming of the floor which takes efforts away from other clean up or becomes an entire person's task. Labour costs are expensive and quickly adds up. The automatic floor cleaner can help by automating this task. Automatic floor cleaner can clean a floor space on its own without the help of anyone. And the cost of using one has a fixed price rather than paying an escalating price on workers. The device has to be simple enough for any adult to use. For this product to succeed, it needs to do its job well by covering the entire floor space in a timely fashion.

# **TABLE OF CONTENTS**

CHAPTER	TITLE	PAGE
1	INTRODUCTION	
	1.1 Background Study	1
	1.2 Problem Statement	2
	1.3 Objective	2
	1.4 Scope of Study	2
	1.5 Project Contribution	3
2	LITERATURE REVIEW	
	2.1 Introduction	4
	2.2 Microcontroller	5
	2.3 PIC 16F877A	6
	2.4 Light Emitting Diode (LED)	7
	2.5 Voltage Regulator	7
	2.6 Crystal	9
	2.7 Conclusion	9
3	METHODOLOGY	
	3.1 Hardware Configuration	10

## **CHAPTER 1**

### **INTRODUCTION**

In this section it will contain the background study, problem statement, objective, scope of study, and project contribution.

## 1.1 Background Study

The tedious process of floor cleaning has become a menial, labour demanding, and time consuming task, which can be accomplished without an overwhelming amount of skill. We have realized that people at home are too busy for daily or weekly floor cleaning, especially for families with children. The elderly who lives by themselves do not have the strength or ability to clean by themselves, and the cost of hiring a maid is expensive. Out in the industry, nightly office cleaning almost always includes vacuuming of the floor which takes efforts away from other clean up or becomes an entire person's task. Labour costs are expensive and quickly adds up. We believe an automatic floor cleaner can help by automating this task. Automatic floor cleaner can sweeping a floor space on its own without the