THE SMART PLANTATION SYSTEM

This project report is presented in partial fulfillment for award of the Bachelor

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ABSTRACT

This thesis represents a report on the Smart Plantation System. This report includes the details information and analysis about the use of the PIC 16F84A controller in the Smart Plantation System. The PIC 16F84A details on the simulation are represented by using the MPLAB simulation software. The system generates the desired temperature to meet the plant requirement in order to make sure the plant will survive.

The system indicates the temperature surrounding using the temperature sensor (LM 358) where the input of the system must be in digital form. To convert the signal from analog to digital, the systems use the Analog to Digital Controller (TLC 549). The advantage of this ADC was that it could communicate with the microcontroller serially.

The system is controlled from the PIC 16F84A controller, where from the PIC, it measures the temperature surroundings and state that if the desired temperature is achieved or not. If is not the desired temperature, the buzzer (alarm) will indicate and information will be sent to the PIC, and PIC will give orders to the fan to start functioning until the desired temperatures achieved.

Finally, this thesis also outlines the use of the LCD indicator in order to show the current temperature surrounding and the use of others component in the project. The details on the software develop for the PIC controller is shown in the MP Lab simulation software.

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CHAPTER 1

INTRODUCTION

1.1   Introduction

Agricultural or crop diversification is practiced in Malaysia. Traditionally, horizontal diversification or the cultivation of an increasing number of crops as opposed to one or two major crops is the practice. Oil palm, rubber, cocoa and rice have been and continue to be the major crops grown by the private and public sectors. However, other crops such as grape, strawberry, tropical fruits, vegetables, flowers, etc., are being grown by the smallholders and the private sector. This happens due to the inability of plant or crops to grow in our country because these plants required a lower temperature to grow up.

Vertical diversification that refers to the upstream and downstream activities of a particular crop or crops is also being practiced. It starts from primary production (farm products), goes through primary and secondary processing and finally the finished products. The vertical variant gives increasing emphasis to intra and inter-sector linkages thereby developing the relevant value chain in order to be competitive.

One of the suggestions to this problem is by using the Smart Plantation System. With an advancement of technology from The Smart plantation System, it has been recognized as one way to increase the production of the plantation. It will use the concept of the temperature controller, whereby it will perform to indicate the higher and lower of the temperature around the area of the plantation. The application that we used presently is not practical enough. It also required a higher cost to develop.

The Smart Plantation System using the temperature controller alone for the system is not enough. to make the system more flexible and more user friendly, a controller is needed to function as the brain for the system. The PIC 16F84A has been chose to the