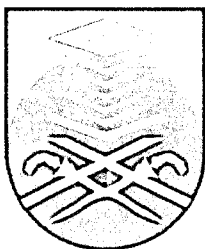


**TEMPERATURE AND HUMIDITY MEASUREMENT FOR OIL PALM AT
TISSUE CULTURE LAB USING SHT11**

**This thesis is presented in partial fulfillment for the award of the
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ABSTRACT

Tissue culture is often a generic term that refers to both organ culture and cell culture and the terms are often use interchangeably. Cell cultures are derived from either primary tissue explants or cell suspensions. Mass reproduction of high yielding palms is a major objective of oil palm tissue culturists. The factors such as temperature, humidity, liquid, phase and gas compositions are critical in producing quality clonal materials using tissue culture process. In Tissue Culture Lab at Malaysian Palm Oil Board (MPOB), users (lab workers) should monitor the young oil palm all the time to make sure it in good condition which in the appropriate temperature and humidity. SHT11 is a suitable sensor to detect temperature and humidity at the young oil palm in the vessel because it is very tiny and robust. This sensor will monitor critical parameters that will be linked to the database and analysis software for storing and analyzing the monitored data. This project are controlled remotely using a 40-pin MicroChip 16F877A microcontroller at the monitor station that receives commands via RS232 and translates them into hardware control logic. The PIC connected with Zigbee transceivers that are wireless system for the communication protocol to transmit and receive the temperature and humidity data. The data display at the database and also in graph form in real time.

TABLE OF CONTENTS

CONTENTS	PAGES
TITLE	i
APPROVAL	ii
DECLARATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	ix
LIST OF TABLES	xi
LIST OF SYMBOLS AND ABBREVIATIONS	xii
CHAPTER 1: INTRODUCTION	1
1.1 Problem Statement	1
1.2 Objective	2
1.3 Scope of Work	2
1.4 Thesis Outline	2
CHAPTER 2: LITERATURE REVIEWS	4
2.1 MPOB (Malaysian Palm Oil Board)	4
2.2 Oil Palm Tissue Culture	6
2.3 SHT11	8
2.3.1 Sensor performance	9
2.3.2 Application Information	10
2.3.2.1 Operating Conditions	11
2.3.2.2 Temperature Effects	12
2.3.2.3 Light	12
2.3.2.4 Features	12
2.4 PIC16F877A Microcontroller	13
2.4.1 Pinout Description	16
2.5 XBee Transceiver	18

2.5.1 Key Features	19
2.5.1.1 Advanced Networking and Security	19
2.5.1.2 ADC and I/O Line Support	20
2.5.1.3 Easy-to-Use	20
2.6 XBee Starter Kit (SKXBee)	20
2.6.1 System Overview	21
2.6.2 Board Layout	22
2.6.3 Product Specification	23
CHAPTER 3: METHODOLOGY	25
3.1 Block Diagram	25
3.2 Transmitter's Part	25
3.2.1 SHT11	25
3.2.1.1 Serial Clock Input (SCK)	26
3.2.1.2 Serial DATA (DATA)	26
3.2.1.3 Electrical Characteristic	27
3.2.1.4 Start up Sensor (Communication with sensor)	28
3.2.1.5 Sending a Command (Communication with sensor)	29
3.2.1.6 Measurement of RH and T (Communication with sensor)	30
3.2.1.7 Connection Reset Sequence (Communication with sensor)	30
3.2.1.8 CRC-8 Checksum Calculation (Communication with sensor)	31
3.2.1.9 Status Register	31
3.2.1.10 Relative Humidity (Conversion Signal Output)	32
3.2.1.11 Temperature Compensation of Humidity Signal (Conversion Signal Output)	33
3.2.1.12 Temperature (Conversion Signal Output)	34
3.2.1.13 Dew Point	34
3.2.2 PIC16F877A Microcontroller	35
3.2.3 Interfacing the XBee with Microcontroller	36
3.3 Receiver's Part	37
3.4 Software Development	39
3.4.1 Coding/Debugging	39
3.4.2 Transceiver (XBee)	39
3.4.3 Temperature and Humidity Sensor (SHT11)	40