

UNIVERSITI TEKNOLOGI MARA

**FARM WATER QUALITY MONITORING
SYSTEM VIA IOT TECHNOLOGY**

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ABSTRACT

This thesis represents the invention on farming system, called as Farm Water Quality Monitoring System via IoT Technology to help people who are facing food poisoning from bad produce cause by bad source of water and solve them by create a monitoring system that can be access anywhere with the current technologies of mobile phones. The purpose of this research is to simulate the circuit of systems in Farm Water Quality Monitoring System via IoT Technology using Proteus 8 Professional software, to design the prototype of Farm Water Quality Monitoring System via IoT Technology and test the prototype of Farm Water Quality Monitoring System via IoT Technology. This project consists of three parameters which are temperature sensor, pH sensor and turbidity sensor. An I2C LCD display was used to display the data of the current parameters of the water and an addition of LED and Buzzer to notify the current state of the water. Lastly, a NodeMCU ESP8266 are used to send data from the project through Wi-Fi network. Hence, Farm Water Quality Monitoring System via IoT Technology project is in line with the purpose of Final Year Project which is to learn about how to work independently and invent something that can solve problems that occurred in humans' daily life.

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TABLE OF CONTENT

AUTHOR’S DECLARATION	3
APPROVAL	4
ABSTRACT.....	5
ACKNOWLEDGEMENT	6
TABLE OF CONTENTS	7
LIST OF FIGURES	9
LIST OF TABLES	9
CHAPTER 1	8
1.0 INTRODUCTION	9
1.1 PROBLEM STATEMENT	10
1.2 OBJECTIVES	10
CHAPTER 2	12
2.0 INTRODUCTION	12
2.1 EQUIPMENT AND COMPONENT	14
2.1.1. ARDUINO UNO	14
2.1.2. PH SENSOR	16
2.1.3. TURBIDITY SENSOR	16
2.1.4. TEMPERATURE SENSOR	17
2.1.5. RGB LED	18
2.1.6. 16X2 I2C LCD DISPLAY.....	19
2.1.7. BUZZER	19
2.1.8. NODEMCU ESP8266 V3.....	20

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The advent of state-of-the-art technology has opened the gateway to revolutionary advancements across various domains, including farming. It has become crucial to adopt and implement technologies that can effectively identify potential hazards and mitigate risks due to the rising number of people that get sick off food poisoning and unhealthy products. The creation of a water quality monitoring system, which intends to address crucial issues of farming, is the subject of this technical paper.

Global food poisoning often results from contaminated water, posing health risks due to unsafe agricultural practices. This project seeks to equip farmers with real-time monitoring and alerts, offering early warnings. Its goal is to enable informed decisions, allowing swift action to prevent errors and address potential issues effectively. The innovative technologies used by the Farm Water Quality Monitoring System via IoT Technology include a pH sensor, a temperature sensor, turbidity sensor, RGB LED, a buzzer, and an LCD display. These elements operate together to detect aspect of the water such as temperature, pH and turbidity and keep it in a set threshold. When the technology identifies potential threats, it issues visual and aural alerts, capturing the farmer's attention and prompting an immediate response to address the detected risks in a timely manner.

The goals of this project include developing an effective and dependable system, putting the required hardware and software in place, and rigorously verifying the system's performance. The construction of this system is built on top of the widely used and versatile Arduino microcontroller platform. This technical report will give comprehensive information on the system's architecture, component selection, circuit connections, and programming in addition to an outline of the project's goals. Additionally, the report will go into the testing procedures used to gauge the system's responsiveness, accuracy, and dependability. This project intends to add to the body of information already available in the field by highlighting the significance of food health and the necessity for preventative actions. The findings of this