UNIVERSITI TEKNOLOGI MARA

FINAL YEAR PROJECT

Centre for Electrical Engineering Studies

College of Engineering

UNIVERSITI TEKNOLOGI MARA

JOHOR BRANCH

PASIR GUDANG CAMPUS

WATER POLLUTION OBSERVER WITH

IOT TECHNOLOGY

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ABSTRACT

The Water pollution Observer is a system designed to solve the growing issue of water pollution. With an ESP32 microprocessor, temperature, light, and pH sensors, the Observer's real-time monitoring system provides an in-depth depiction of the water's quality. The incorporation of the Blynk App enhances its capabilities. During its development, issues were faced and passed, demonstrating the importance of careful calibration and continuous progress. The challenges associated with creating effective environmental monitoring tools are shown by the failures and successful objectives. It is encouraging to see how the Observer may develop in the future, as more community involvement in environmental preservation and advances in technology are sure to bring big changes on how to better protect our environment. In addition to serving as a working prototype, the Water Pollution Observer provides more groundwork for upcoming developments aimed at protecting our essential water resources.

ACKNOWLEDGEMENT

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CHAPTER 1

INTRODUCTION

1.1 Project Overview

As time progresses, pollution remains a formidable challenge for humanity, with water pollution being a particularly pressing concern. Constant monitoring of global water sources is needed to safeguard both human and environmental well-being. This study seeks to contribute to ongoing efforts by developing a comprehensive Water Pollution Observer that leverages advanced IoT technology.

The prototype, designed to monitor and combat escalating pollution levels in water, utilizes an ESP32 microcontroller and an array of sensors. These sensors, including those for Temperature, Turbidity, and pH, undergo rigorous testing under diverse conditions to ensure accurate performance.

The system evaluates environmental conditions, making informed judgments based on preprogrammed historical reports. Visual indicators, such as LEDs, convey the decisions made, while the collected data is transmitted to a cloud-based platform for real-time monitoring.

1.2 Objectives

    A. To create Water Pollution Observer with IoT Technology using ESP 32 microcontroller
    B. To successfully integrate IoT technology into Water Pollution Observer
    C. To create an economical Water Pollution Observer with IoT Technology

1.3 Problem Statement

Water pollution is a critical environmental challenge that poses a severe threat to both human well-being and the ecosystem. As time progresses, the need for effective monitoring solutions becomes increasingly urgent. Existing methodologies often lack the integration of advanced