

# **A DESIGN OF WIRELESS WATER POLLUTION MONITORING TOOL**

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## **ABSTRACT**

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Almost 70% of the earth is covered by water. Water is the most important resource in the world. Even though water is easily being obtained from this planet, but only 2% of the water is safe to be consumed. Due the rapid development of the urban area, water pollution starts to increase. Thus, water pollution monitoring system is important to maintain the quality of the water at the desired level. In order to improve the efficiency and precision of this measuring system, it is necessary to use the pH electrode.

The purpose of this project is to design a wireless water monitoring system. This monitoring system can be installed at residential areas and factories via the wireless communication technology; ASK (Amplitude Shift Keying). The prototype is built accordance to the project specifications. It consists of sensors, PIC microcontroller, LCD modules, RF modules, LED and buzzer.

Sensor circuit consists of the pH electrode. It is used to detect the water pH whether it is acidity, alkaline or neutral. PIC microcontroller is used to read the analog reading from the sensor circuit and controls the text display in LCD. Transmitter circuit is activated by PIC microcontroller when water is detected unsafe to be consumed. Receiver circuit is the control center of this project. LED will light ON and the buzzer is triggered when the signal is received.

The overall design is met and it is proven by the results obtained during the tests and troubleshooting. In addition, an extra feature (ORP electrode) is added to ensure the water is safe to be consumed. With the aid of ORP electrode, the oxidation process occurs in the water can be monitored especially for water disinfection process. Water disinfection process uses a lot of chlorine. Thus, ORP electrode is used to control the level of chlorine used.