ABSTRACT

Groundwater is a vital resource that is vulnerable to pollution. Regular monitoring of groundwater quality is essential to ensure its sustainability and protect public health. This research aims to develop an Internet of Things (IoT) based groundwater quality monitoring system that is capable of collecting real-time data and providing accurate information regarding groundwater quality parameters.

This system consists of sensors connected to a microcontroller to measure various water quality parameters such as pH, temperature, TDS, and turbidity. The data obtained from these sensors is then sent wirelessly to the IoT platform to be analyzed and displayed in an easy-to-understand visual form.

Test results show that this monitoring system is capable of sending data accurately and in real-time. The information presented through the IoT platform provides a comprehensive picture of groundwater quality conditions, thereby enabling informed decision making and effective preventative action.

This IoT-based groundwater quality monitoring system is expected to be an innovative and efficient solution in managing groundwater resources. With continuous monitoring, groundwater quality can be maintained and the risk of pollution can be minimized, thereby ensuring the availability of clean, safe water for the community.

Keywords: *Ground Water, Water Quality, Monitoring, Internet of Things (IoT), Sensors.*