

## **ABSTRACT**

This report discusses the development and implementation of a Floating System for Water Quality Monitoring in Wide Areas with Varying Depths. Excellent water quality is very important for ecosystem sustainability and human well-being. Therefore, this system is designed to provide monitoring of water quality parameters in lake environments. The system consists of a series of water quality monitoring sensors, such as water temperature, dissolved oxygen (DO), water pH and water turbidity which are placed at various depths up to 4 meters according to the user's wishes. The results of the values from these sensors will later be displayed in a user interface which can be accessed if the device used to access these values has access to the internet.

The system will start measuring if the user has entered the desired depth value. Then the submerged part of the tool while protecting the sensors from water will move to the depth desired by the user, then the system will start measuring water quality values from that depth. Floating and submerged equipment can protect the components inside well so that there is no damage. Users can also input depth at more than 1 depth point, and the system will move to that depth and then measure water quality values from several of these depths in turn. The results of the water quality values will be stored in the database, then these values can be viewed using the user interface.

This overall monitoring device has a maximum weight of 17 kg and can be moved from one measurement point to another easily using a boat, and can also be lifted by humans if you want to move it from one lake to another. Thus, it is hoped that this floating measuring system can become an effective tool for monitoring water quality in large areas with varying depths, supporting efforts to preserve the environment and water resources.

Keywords: Floating Metering Systems, Water Quality, Lakes, Varying Depths, Aquatic Environments.