ABSTRACT

Water is a very basic necessity in survival. However, the provision of clean water is still uneven. The problem that arises is the high level of turbidity in well water and river water in each place around Telkom University Bandung, namely Sukapura village and Sukabirus village. Water is safe for consumption if it meets the requirements, one of which is the turbidity value of water which cannot be above 500 ppm. The author will design a device that can perform water filtration with the aim of obtaining clean water that is safe for consumption and include IoT technology for the purposes of monitoring the current water data. Which of these objectives the author must conduct research in a place where the internet network is available.

The system built is a system that can monitor the ppm and pH *values of water based on the Internet of Things (IoT). This system can control relays and can monitor current, voltage and altitude values of water. For that, a turbidity sensor,* pH *sensor, and ultrasonic sensor are needed to measure the water level, besides that the current process being carried out by the system can also be known through the application. Which is processed using ESP32 to get to the firebase server and an android application designed using MIT App Inventor.*

Based on the results of system performance testing, 100% results were obtained and data transmission was successful using a Wi-Fi *connection with a distance range of 0 - 20 meters, and confusion matrix calculation is used to calculate the value of accuracy, sensitivity, and recall with all results reaching 100%. For the use of applications, installation has been carried out with android from various brands such as realme, nokia, Samsung, vivo, all of which can operate the application without obstacles with each android smartphone having a different provider.*

Keywords : *ppm, electrocoagulation,* pH, ESP*32,confusion matrix*