

ABSTRACT

Clean water is running out due to water pollution, one of the causes is industrial waste pollution which can have a negative impact on the environment and ecosystems around the river. Therefore, a real time water quality monitoring system was created that can be monitored through a mobile application and also a floodgate control that aims to prevent polluted water from entering the river. The system is also capable of sending notifications of polluted water warnings. The water quality parameters used are water temperature, water acidity, and electrical conductivity in water. The system has an error on the temperature, pH, and EC sensors are 0,3%, 1,5%, and 1,9%, respectively. The sluice gate prototype is controlled based on the monitoring data, the door will close when the data shows polluted water conditions, and open when the data shows normal water conditions. Testing of the monitoring system was carried out for seven days on the Citarum river, Citereup by looking at the stability of the measurements of all sensors and data sent to the mobile application, from the monitoring test results obtained an average temperature of 23,5 °C, pH 7,7, and EC 646,9 $\mu\text{S} / \text{cm}$. While the valve control system is tested by seeing if the valve is able to close in polluted water conditions, testing the valve control system is done using HCl, NaClO and directly in the Citarum River. From the results of the valve control test, it was found that the control system was able to respond well. This system is implemented to be able to monitor the condition of waste in the river, so that further action can be taken if the river is polluted.

Keywords: Degree of acidity, Electrical conductivity, Monitoring, Temperature, Water gates, Water quality.