

## **ABSTRACT**

*Clean water is one of the many natural resources used by humans for consumption or carry out daily activities. Clean water is said to be unfit for consumption, if they meet some requirements of water quality include physical requirements, requirements of chemical and microbiological requirements. But a lot of Indonesian people are now less concerned about the quality of the water they consume, especially the people who live at the edges of the river that has been polluted by garbage and factory waste.*

*In this thesis the author will design a device that can measure water quality by using LDR sensor (Light Dependent Resistor), where the sensor can detect the water clarity of the light level LED (Light Emitting Diode) that penetrates the water, and pH sensor meter for measuring the degree of acidity or alkalinity of water in order to detect the pH level of the water. And controlling processing performed by the fuzzy Arduino. Metode will be used to determine its worth or not the water used for consumption by humans.*

*By using this system, the accuracy of the measurement of pH > 80%, especially at pH 7-value reached 94.40%, and the pH in this system deem meet water quality is worth between 6.5 - 7.5 and this tool can measure water turbidity level at range 0-200 with LED illumination distance of 10cm with LDR sensor. By using this tool, the water used by people in everyday life can be tested quality, so little chance of human disease due to consumption of water, especially for people living in areas contaminated water*

*Keywords: water quality, Arduino, sensor pH, Fuzzy Logic, the solenoid valve.*