

## **ABSTRACT**

Water use is a primary requirement for humans. But Dizaman is now a lot of water that has been contaminated by dangerous wastes that can damage the body. At the UPT office. Water Quality Treatment of Lake Toba using checking method of water quality is still manual and the results obtained must be checked to the laboratory. Manual way is still a lot of time. Tool makers are formed into a Measure Ship to be able to measure the quality of the water in a difficult place to go.

With growing technology now many sensor tools can be used to measure water quality based on pH, Temperature, and turbidity controlled by Arduino uno which functions as the brain of the measuring vessel, can be monitored through and driven using the ESP8266 interface, in the form of a ship Where the status of water conditions will be inferred by fuzzy sugeno method.

From the results of tests conducted on this measuring vessel proves that the ship is working properly. Each button in geeknesia requires a delay of 1 to 2 seconds for each command. The sensor reading time has 2 to 3 seconds. The pH sensor test has an percentase of succes 100%. The turbidity sensor test has a measurement capability of 0 to 500 NTU. The temperature test has an percentase of succes 98.926%. The output voltage of the battery used is 12.3 volts with a usage time 9 hours.

**Keywords: Arduino Uno, ESP8266, Ph, Temperature, Turbidity, Fuzzy, Ship Measure**