

## **ABSTRACT**

*Ikbar Saifullah. Student Registration Number 1108090025. Design of Tea Maker Machine using Fuzzy Logic Control. Engineering Physic, Engineering Faculty, Telkom University. 2014.*

*To produce a quality tea beverage control system requires that the process goes well. Fuzzy logic -based control is a form of control that can be used to control the output of the production of the tea maker machine. In application of fuzzy logic will be used to control the output results in the production of turbidity parameters.*

*In the production process of tea maker machine begins from filling the water and ends with the distribution of tea to storage tank. Device controls used tea maker machine is ATmega16 microcontroller. Actuators are used to build the tea maker is a solenoid valve, direct-current motor as mixer, pump, and heater. While the sensor is used as a temperature sensor IC LM35, LDR as turbidity sensors and liquid level sensors. Machine requires 220 VAC power supply with 116,54 Watt minimum power. The controls are used to obtain the turbidity is fuzzy logic. Fuzzy logic is used in the process of reading the turbidity level of tea in turbidity process tank, and to give sugar level using dose contained in sugar level process tank.*

*Tests conducted is testing turbidity tea and sugar level. Test results obtained have turbidity turbidity value range 20 ADC to 29 ADC. While the results of sugar level tests have value range 8.0% to 8.7%.*

*Keywords: Tea maker, ATmega 16, fuzzy logic, turbidity tea, sugar levels.*