

ABSTRACT

Water Treatment Plant (WTP) or usually called a wastewater treatment plant that aims to produce clean water. One of the stages in the WTP itself is the coagulation process. The coagulation process itself aims to purify water that was previously turbid by agglomerating suspended particles in the water. So that the water produced will be suitable for bathing, washing, latrines and other needs.

In accordance with the above problems, it is necessary to control the coagulation process. So that a coagulation tank will be designed that can control the level of turbidity in the water and its algorithm feedforward own aims to control the addition of chemicals to the previous process. So that the user can control the addition of chemicals to the previous process and the coagulation process it self can maintain the turbidity value in the water with its supposed value.

In this final project, coagulation control will be made on a-based WTP prototype feedforward using an Arduino Uno microcontroller. This system is designed to maintain the water turbidity value below 5_{NTU} by out the coagulation process, which will later display the turbidity value on the LCD. The coagulation process will occur if the turbidity value of the water is above 5_{NTU} , which means that the servo motor will drop the alum and the DC motor will do the mixer for 1-3 minutes. If the turbidity in the water is below 5_{NTU} , then the coagulation process will not occur. In this process, two conditions are carried out, namely by using clean water and dirty water. In the condition of using clean water, the turbidity value in the water is 0.74_{NTU} , so that based on the system, the error value on the sensor is 4.32% and the accuracy value obtained is 95.67%. Whereas in dirty water, the coagulation process occurs with the greatest turbidity value decreasing from 8.74_{NTU} to 4.92_{NTU} .

Keywords: *Coagulation, Feedforward, Turbidity, Microcontroller*