

ABSTRACT

Thermoreactor tool is a laboratory instrument used to incubate the sample for CO sample D and sample total nitrogen. Sample COD stands for Chemical Oxygen Demand Oxygen Demand. Chemical the amount of oxygen required to oxidize substances - organic substances present in the water samples. The smaller levels of Chemical Oxygen Demand in the water, the better the water and decent to wear.

Therefore in this thesis the author tries to develop a tool that is expected to contribute to good health in the world and in the world of science and technology. This tool aims to incubate samples at a sample temperature of 105 oC to 150 oC total nitrogen and CO for sample D (Chemical Oxygen Demand) in the same time is 30 minutes. In making this tool the authors designed by using AT89S51 microcontroller IC as a controller for the timer and temperature display on seven segment. . To maintain the desired temperature stability, first plane - first heats the heater. Once the desired temperature is reached, the heater will warm up in the heater control by the driver. When the temperature is below the set temperature, the heater will turn on to reach the desired temperature. And when the temperature is above the temperature setting of the heater will die, so the temperature will be maintained at the specified temperature.

In the analysis it is concluded that the tool is able to run well and Calculation measurement data at 105 °C for temperature and 150 ° C obtained average% error. Calculation of data on the seven segment display compared with a 100 pt kalibrator temperature to a temperature of 105 ° C and 150 ° C obtained average % error of 1%

Keywords: temperature, C. O. D, PT100, Thermoreactor