"DESIGN OF TEMPERATURE CONTROL SYSTEM TO MIXING UNIT ON MINI BIODIESEL PROCESS PLANT IN INSTRUMENTATION WORKSHOP"

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Abstract

The temperature control system is a system than can control the temperature of biodiesel miniplant process, especially in the mixing tank of oil and metoxide that consist of methanol (CH₃OH) and catalyst (KOH). The temperature control system are used on-off control mode with LM35 as temperature sensor, microcontroller as controller, LCD as displayed of data, and used two kinds of actuator solenoid valve and heater. The work principle of the control plant is beginning from temperature sensor. The temperature is change of mixing tank would detected by LM35 temperature sensor. Then, the information that getting by this sensor will be processed by microcontroller. The last, the display of temperature is change is appearance in LCD. At this tank, the ideal temperature for mixed the oil and metoxide is about 55° C - 65° C, then data are taken is also different from set point is 55° C, 60° C, 65° C. The result of system examination can be seen that the time faster to get the set point means that the reaction is faster on the mixing oil and metoxide process. Then, the calculation result of accuracy system is 98 percent.

Keywords : System level control, ultrasonic sensor, microcontroller ATMega 8535.