

ABSTRACT

Currently, most of hospitals still use medical equipments that have not give accurate results. One of the medical equipments that usually use is a sensor in thermometer to measure body temperature of the patient. Monitoring the results of measurement of body temperature is really important because the needs of a fast and accurate handling when patient get a sudden high fever that can cause seizure. In fact, monitoring the results of body temperature can only be seen when the medical personnel come into patient's room. So that, if there is an emergency condition that need a quick response, it will take a long time to be handled.

Therefore, a thermometer that the result can be monitored b nurses in mobile condition is needed. If the body temperature of the patient increase drastically in sudden when there's no medical personnel that can monitor the patient directly, so the first handling can not be given to patient, because it needs several minutes to reach the doctors.

In this final project, a monitoring system has been designed to control body temperature using Wireless Sensor Network. In the previous research, a body temperature has been made, although it still uses LM35 sensor with LAN wireless which the measurement of body temperature not stable and can not be monitored quickly by doctors and nurses. In this final project, the thermometer is developed becomes more stable by using Negative Temperature Coefficient sensor with Wireless Sensor Network in multipoint to point configuration. The result of body temperature is showed in the server with a good accuracy with deviation value 0.44 of Device A and 0.34 of Device B. Besides, the value of NTC calibration when temperature shows 24°C, the resistance value is 10KΩ. The maximum delay of Device A is 1.78 s and Device B is 2,73 s. So that, the doctors can monitor the measurement of body tempature of the patient from distance, in order to give a quick treatment.

Key words : Body temperature, Negative Temperature Coefficient, Wireless Sensor Network