

ABSTRACT

Human blood is an important fluid that flows in the human body. One of the blood cells, platelets, needs to be stored at a normal temperature of 20-24°C. The blood bag storage device used so far is a conventional cooler box that relies on the use of ice gel / ice packs to make the temperature in the box cool.

This research will design and implement a smart cooler box system for human blood storage using thermoelectric modules. Control structure statement process is applied to regulate Peltier in transferring from hot temperature to cold temperature, so that the speed of the fan can rotate as needed. The resulting temperature will be displayed on the LCD and can be monitored through an Internet of things media platform called Blynk.

This test is carried out in 30-minute intervals with data time taken every 3 minutes with a box size of 28 x 18 x 20 cm. The results of the comparison of the average temperature error of the DHT11 sensor with the thermo-hygrometer obtained are 1.59% and for testing the rules that have been applied to the system built are able to work with 90% accuracy.

Keywords: blood, DHT11 sensor, thermoelectricity, thermo-hygrometer, blynk