

MONITORING PROTOTYPE AUTOMATIC OIL SKIMMER USING PROXIMITY SENSOR BASED ON INTERNET OF THINGS (IOT)

Student Name : Rodotul Azkia
Register Number : 3103191166
Supervisor : Hikmatul Amri, S.ST., M.T.

ABSTRACT

Several palm oil processing industries, where some processing sectors still use conventional and manual methods without the application of technology. Therefore, it is important to have Internet of Things (IoT)-based monitoring so that you can monitor these devices remotely. This tool works when the ultrasonic sensor detects altitude, the thermocouple sensor detects the oil temperature and the data is stored to the ESP8266 NodeMCU and then sent to Blynk as monitoring. Based on the results of the tests that have been carried out when the object approaches the proximity sensor the sensor output voltage is 0.02 V and when the object moves away from the sensor the output voltage is 5 V. The average comparison between ultrasonic sensor errors and manual measurements is 3.755 %. The lowest error of 1 % is obtained at a distance measurement of 20 cm, the highest error of 16 % is obtained at a distance measurement of 5 cm. The average error ratio between the thermocouple sensor and TDS&EC is 1.096 %. The lowest error of 0 % was obtained at 45 °C, the highest error of 2.8 % was obtained at 41.7 °C. The average delivery time is 110.86 seconds with the fastest time of 60 seconds and the longest time of 192 seconds. The overall tool testing was carried out 20 times and got an average success rate of 100 %.

Keywords: *NodeMCU ESP8266, proximity sensor, ultrasonic sensor, thermocouple sensor*