

ABSTRACT

Biogas is one of the alternative energy sources to replace gas fuel that is environmentally friendly. In previous studies, the volume and concentration of gas have been measured. In this research, a monitoring system for measuring flow and biogas concentration based on the Internet of Things (IoT) has been combined. The purpose of this study is to design a system that can monitor gas production in a biogas reactor in real time. Biogas measurement data is sent to the Blynk IoT platform and biogas production data can be monitored directly using a smartphone at any time. Based on the results of the biogas reactor testing carried out for the first 30 days, there was a leak so that a change was made to the LPG gas source to get the accuracy value, the accuracy of the LPG gas flowmeter sensor was 84.04% with an error of 19.6%. While the accuracy of the MQ-4 sensor from LPG gas is 94.07% with an error of 5.48%. The gas volume measurement accuracy is 91.17% with an error of 8.82%. Measurement data is displayed on the Blynk application in real-time in the form of graphs and gauges for easy understanding.

Keywords: Biogas, Internet of Things (IoT), volume, concentration.