

## ABSTRACT

Biogas is an alternative energy that utilizes several types of leftover material such as food scraps, garbage and livestock feces. The conversion process of these organic materials takes several weeks in anaerobic conditions by using microbes to overhaul the organic material. In its implementation, biogas reactors are not equipped with appropriate measuring instruments, such as instruments to measure the volume of gas produced by the reactor. So users do not know the volume of gas produced by the reactor. In this research, an Internet of Things (IoT) biogas production volume monitoring system will be developed. The biogas measurement data is sent to the IoT platform so that data about daily biogas production can be monitored directly from far away. The measurement process carried out by the flowmeter sensor will be received and processed by a. The process of sending data to the IoT platform is done using the GSM/ GPRS communication module with a delivery time of every 15 minutes. GSM/ GPRS communication module can transmit data with an average time of 36.2 seconds. The accuracy of the flowmeter sensor used on standard measuring devices is 94,84% with an error of  $\pm 5.16\%$ . Accuracy of volume accumulation by the microcontroller to the reference volume is 95,75% with an error of  $\pm 4.25\%$ . The accumulated volume of biogas production for the first period (18 July 2020 - 20 July 2020) was 772.55 liters, the second period (21 July 2020 - 23 July 2020) was 664.73 liters, and the third period (24 July 2020 - 26 July 2020) ) of 695.63 liters.

**Keywords** : Biogas, IoT, *Flowmeter*.