

ABSTRACT

Electrical energy is a very crucial thing in the present era. In its implementation, the use of electricity is still often a waste. Therefore, there needs to be monitoring in its use in order to optimize the use of electricity. By implementing the Internet of Things (IoT), the monitoring process can be monitored in real-time and accessed anywhere just by connecting to the internet. This study took the location of data collection in the bathroom in a building, this was chosen because the use of electrical energy, especially on lights that are in the bathroom is still considered quite wasteful because it must be lit continuously. By using three types of sensors, which is use the voltage sensor the current sensor, and PIR sensor (Passive Infrared Receiver). The voltage and the current sensor output value are used to find the value of the electrical power and for the PIR sensor which serves to automate the lights in the bathroom. The test results of the ZMPT101b voltage sensor are able to produce an accuracy of 98% for voltage measurement and also for testing the ACS712 current sensor produces an average error around 0.022%.. The results of the energy measurements carried out only require a total of 16% of total energy used by the lights at the test location with total of normal energy usage before the device was installed. Presentation of data is displayed in graphical information on the thingspeak server.

Keywords : *Power monitoring, Internet of Things, Passive Infrared*