

# **ENERGY CONSUMPTION MONITORING AND CONTROL SYSTEM DESIGN OF IoT-BASED PUBLIC STREET LIGHTING**

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## **ABSTRACT**

*Lights are now a primary need in everyday life. Without lights, humans will not be able to see clearly, both in the morning and at night. One of them is the Public Street Lighting (PJU) which is the most important place for lighting, especially at night, public roads are places for access to traffic for road users, ranging from motorcycles, cars, to pedestrians. The monitoring and controlling system for Public Street Lighting (PJU) is currently still done manually, namely by visiting directly at the place or location where the system is installed and checked periodically one by one by officers so that it requires more time and energy. To overcome the shortcomings in manual monitoring, a system must be made that can monitor and control public street lighting remotely using the internet network. This system can also be used to monitor the condition of public street lighting in real time. Tool testing is performed when the tool is in automatic and manual mode. The first test was carried out in automatic mode, the test was carried out three times a day at 8 am, 12 noon, and 6 pm. the success rate of the tool obtained after testing in automatic mode is 100%. In manual mode, the lamp will turn on or off based on the set timer value. If it is between the time that has been set with the timer, the light will turn on and vice versa if it is outside of the given hour then the light will turn off. The test was carried out five times and got a success rate of 100%. Testing of voltage and current readings using the PZEM-004T module was carried out six times with the conditions of the angle generated by the servo between 0° to 180°. The values obtained are 99.73% for voltage and 99.55% for current readings with an average difference of  $\pm 1$  volt reading.*

**Keywords :** *Public Street Lighting (PJU), Internet of Things, PZEM-004T, Dimmer Module*