ABSTRACT

The lighting system takes a dominant part in the building. However, its use is inefficient because the light provided by the lamp exceeds its needs and often the light stays on when it is not needed. It can be done by creating a lighting system that provide appropriate light for saving the use of energy.

In this Final Project, a lighting system is designed to control light intensity by using a device that is able to detect light intensity and movement. Fuzzy Logic Controller is the control method that is used by the system. The lighting system will turn on when there is activity in the room, then the lights will adjust the intensity in the room. With this system, minimum savings in electricity energy consumption will be achieved by 10%.

The research results obtained from the room's initial light intensity of 0lux, 50lux, 100lux, and 150lux have an error percentage of 0.3%. The lamp will be off at the room's initial light intensity of 174lux to 200lux. At the room's initial light intensity of 152lux to 172lux, a greater set point is needed. The energy savings that can be generated by the system is 0.1983kWh or 50.7%.

Keywords : *light intensity, energy saving, smart control system, adaptive lighting*