

STREET LIGHT SMART SYSTEM FOR ENERGY SAVING AND OPERATION EFFICIENCY

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ABSTRACT

Street lighting came with more and more efficient lighting system design. The brightness level of luminosity index is used to measure the performance. The higher it is brighter the light. It also means that brighter light requires higher power consumption. In addition, the lighting may ineffective when there is no one passing by such as during midnight, or less efficient during dusk or dawn time. The development of lighting technology come with the use of LED module. It is a better technology to gain the maximum brightness with low power consumption. There are several luminaires that can reach up to 140 lumen/watt or even higher. Furthermore, since the LED lighting is using DC system, there is inverter/controller inside to switch from ACV electric network (Jing et.al, 2007); because of this controller, therefore the power output and activation time can be controlled also. Thus there is called a dimming system. This system is set during manufacturing process. Using recent technology of internet (IOT), it may possible to control and monitor the streetlight remotely in real-time. Dheena et.al (2017) called the technology of smart system that can control the output power, control the timing of power, and monitor them if any trouble and monitor the energy consumption & saving. The good facilities also come with high investment cost. The price for one smart-system luminaire can cost three times than the common lighting. This cost might high in the beginning but along with the usage in predicted to save more than 75% compare to the common one (Fujii et.al, 2013). The questions are, how much it saves, how long does it take to break-even, and is it really user friendly and efficient compare to the common one? Those questions are still hovering around the user in Indonesia since the technology is considered new. Yet, some region has implements to use the smart system and result with its plus and minus. Using user-testimony and interview, the data are expected to show some review and evaluation on the implementation for better smart society.

Keywords: Smart-System, Street Lighting, Luminaire, Energy Saving, Design

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