ABSTRACT

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Development of an Automatic Lighting Control System for Multifunction Hall

(xi + 57 pages: 26 figures; 12 tables; 9 appendices)

One example of the development of technology is in control system. In this research, an automatic control system has been developed through the implementation of a monitoring system, called observer. Such application based on this system was developed to provide lighting control in a multifunction hall that can automatically dim or increase its lumination depending on demand and the lighting condition. Moreover, it can decide whether the roof should be opened or closed which is also depending on environment illumination.

This automatic lighting control system for multifunction hall was developed by building a model that simulates a tennis court with roof that can open and close on demand. As the title suggests, other events such as a party can take place. The idea is by providing the hall with two separate lighting systems. One consists of white LEDs as miniature of ordinary metal-halide lapms used at sports hall, and another consists of tungsten halogen lamps that substitutes incandescent and *fluorescent* lamp in a party hall. The algorithm of the system is able to categorize lighting conditions, while observer always checks if the room illumination is in the proper level of brightness. The system is controlled by a microcontroller of MCS-51 family, whose program is written in ASM 51.

The result is a precise and stable system that is capable to provide and control room illumination at the proper level and minimize visual disturbance.

References: 9 (1985 -2007).