

## **ABSTRACT**

*The lifestyle of today is increasingly rapid and demanding advanced technology to combine architecture, interior design and mechanical electrical in order to facilitate control of access wherever and whenever. The use of gas Liquid Petroleum Gas (LPG) as a fuel substitute is appropriate but there are points which were highlighted, namely security and energy manajemen. The number of cases of fires caused by leakage of LPG gas indicates that there are still many weaknesses in the security of the gas. This system will be created and will run automatically, by combining Arduino Uno with Zigbee-based network communications that are connected in the same language, so as to facilitate communication between devices. The objective of this thesis is to create a system that can detect and provide early warning against leakage of LPG gas by using MQ2 sensor that can be monitored via PC by utilizing the Zigbee protocol. LPG gas leakage monitoring system uses sensors to measure gas levels MQ2 that are in the air. The use of ZigBee as the wireless communication medium which can be opened through Digi XCTU as visualization software and Arduino microcontroller as controller. Results are expected in the manufacture of this system is able and capable of monitoring leakage of LPG gas. This system will run automatically and in case of LPG gas leakage, the system will inform you in the form of alarms, lighting and visual conditions through Liquid Crystal Display (LCD) that has been provided.*

*Keywords: Monitoring, Arduino Uno, Zigbee, Gas LPG*