# *IOT-BASED LPG GAS CYLINDER LEAK DETECTION SYSTEM USING ESP8266 WITH MQ-2 SENSOR AND FLAME SENSOR TO AVOID POSSIBLE GAS POISONING AND FIRE*

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***ABSTRACT***

*LPG gas cylinders are widely used in everyday life, but the risk of undetected LPG leaks can cause serious hazards, such as gas poisoning and fire. Unfortunately, many people lack an early detection system to anticipate these gas leaks. Therefore, this research aims to develop an Internet of Things (IoT)-based LPG gas cylinder leak detection system using the ESP8266 equipped with an MQ-2 sensor to detect gas and a flame sensor to detect fire. This system is also designed to send real-time notifications via the Telegram application so users can take immediate preventative action. Based on test results, the system is able to detect the presence of LPG gas with good accuracy at certain gas concentrations and is able to detect the presence of fire around the gas cylinder. Furthermore, the system can send notifications to the public upon detection of a leak or fire. Thus, this system is expected to help minimize the risk of accidents caused by LPG gas leaks.*

***Keywords****: LPG gas leak detection, Internet of Things (IoT), ESP8266, MQ-2 and flame sensors, Telegram notifications.*