

## ABSTRACT

LPG (Liquefied Petroleum Gas) gas is a fuel source that all humans use as fuel for household purposes, but there are still some of the LPG fuel users who cannot monitor if there is a leak in the gas used as fuel for daily cooking, therefore the author wants to minimize the incidence of this by making a tool to detect Methane gas leaks with sensors placed close to the gas so that users can respond if there is a leak in the gas being used. This gas detection tool uses a NodeMCU Microcontroller and an MQ2 gas sensor that is connected to the user's cellphone through an application that the user must download on the cellphone. The NodeMCU Microcontroller already has a WiFi component available and can be directly connected to the internet to run it, the application is made with RemoteXY which connects the Microcontroller with a cellphone with a token to be determined so that sensors connected to the internet can send output to cellphones that use the same token anywhere. The purpose of this Final Project proposal is to make a simple and user friendly gas leak detection device so that all users can easily use the tools that users make. The success of this final project proposal is that it can run the tool that will be made by the author and can send alerts to cell phones through the application that has been made.

This gas detector uses a NodeMCU Microcontroller and an MQ2 gas sensor that is connected to the user's cellphone through an application that the user must download on the cellphone. The NodeMCU Microcontroller already has a WiFi component available and can be directly connected to the internet to run it, the application is made with RemoteXY which connects the Microcontroller with a cellphone with a token to be determined so that sensors connected to the internet can send output to cellphones that use the same token anywhere.

Testing of this final project was carried out by spraying gas using a bottle gas tank towards the device for 30 seconds, and the test was carried out 5 times, the results of the test using the RemoteXY application were also compared with the test results using the Blynk application. From the test results for gas levels reaching the sensor limit to send alerts to the cellphone as well as the buzzer lights up when gas levels exceed 500ppm (parts per million) and from the test results it can be concluded that 300ppm - 400ppm is a gas level that is safe. The success of this final project is expected to increase safety in the use of LPG gas for daily life.

**Keywords :** *NodeMCU, Gas LPG, Microcontroller, sensor MQ2*