LPG Gas Leakage Monitoring and Alert System using Arduino

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Abstract*: The LPG (Liquefied Petroleum Gas) Gas Leakage Monitoring and Alert System is designed to enhance safety measures in households, industries, and commercial spaces by detecting and alerting gas leakages. This system employs the Arduino microcontroller to monitor the concentration of LPG gas in the environment and activate appropriate alerts in real-time to mitigate potential hazards.*

The proposed system consists of an Arduino board, an LPG gas sensor, a buzzer, and an LCD display. The gas sensor continuously measures the concentration of LPG gas in the surrounding area. The Arduino board receives the sensor data and compares it with a predefined threshold value. If the gas concentration exceeds the threshold, indicating a potential gas leakage, the system triggers an alarm through the buzzer and displays a warning message on the LCD display.

To ensure efficient gas detection and accurate monitoring, the system incorporates calibration procedures to adjust the sensitivity of the gas sensor according to the environment's characteristics. Additionally, the system allows for remote monitoring and control by integrating wireless communication modules, enabling users to receive alerts through smartphones or other devices.

The LPG Gas Leakage Monitoring and Alert System provides several benefits, including early detection of gas leakages, prevention of fire hazards, and safeguarding human lives and property. Its low-cost design and ease of implementation make it suitable for a wide range of applications, such as residential kitchens, industrial units, and commercial establishments.

In conclusion, this system offers an effective solution for LPG gas leak detection, providing timely warnings and promoting a safer environment. Its integration with Arduino technology enables reliable monitoring, customization, and expandability, making it a valuable tool in gas safety management systems

Keywords: LPG Gas Leakage Monitoring and Alert System using Arduino

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