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(54) Title of the invention : GAS LEAKAGE DETECTION SYSTEM USING ARDUINO FOR REAL-TIME MONITORING AND ALERT GENERATION

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(57) Abstract :

The present invention discloses a Gas Leakage Detection System using an Arduino microcontroller integrated with gas, temperature, and humidity sensors, an IoT communication module, and AI-based predictive analytics for real-time monitoring and alert generation. The system detects hazardous gas leaks by analyzing sensor data, processing it through the Arduino microcontroller, and sending alerts via IoT to a remote server or mobile application. AI algorithms predict potential gas leaks by analyzing historical data, enabling preemptive safety measures. The system also includes an automatic gas shutoff mechanism, alarm system, and cloud-based data storage for remote monitoring. Designed for scalability, it can cover large areas or multiple facilities and offers integration with home automation systems. This invention enhances safety by providing timely alerts, minimizing false alarms, and ensuring proactive mitigation of gas leak risks in both industrial and residential settings. Accompanied Drawing [Fig. 1]

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