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Gas Leakage Detection with Exhaust On and Regulator Off

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Abstract: *Gas leakage is a critical safety concern in both residential and industrial settings. The accidental release of gases like LPG (Liquefied Petroleum Gas) or natural gas can lead to explosions, fires, and health hazards. To mitigate these risks, the development of a gas leakage detection system is essential. This project focuses on designing a system that can detect gas leaks, activate exhaust fans to prevent accumulation, and ensure that the gas regulator is turned off to avoid further leakage.*

The proposed system comprises three main components. 1)Gas Sensor like the MQ-6 is used to detect the presence of gases such as LPG. It generates an electrical signal when the gas concentration exceeds a predefined tthreshold. 2)Control Unit this unit processes the sensor's signal. If a gas leak is detected, it sends commands to activate the exhaust fan and shut off the gas regulator. A microcontroller (such as Arduino or Raspberry Pi) typically serves as the control unit. 3)Exhaust Fan and Regulator Mechanism Upon receiving a signal from the control unit, the exhaust fan is turned on to disperse the leaked gas, and a motorized valve is used to turn off the gas regulator, stopping the flow of gas.

The gas leakage detection system with exhaust on and regulator off is a vital safety measure that can significantly reduce the risks associated with gas leaks. By integrating sensors, control units, and automatic shut-off mechanisms, the system provides an effective solution for preventing gas-related accidents. This project has the potential to enhance safety in various settings where gas is used, contributing to a safer environment for all..

Keywords: Gas leakage