

## Automatic Integrated Inverter Type Smart Device for Safe Kitchen

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**Abstract :** The proposed wireless, inverter type design of a LPG leakage monitoring system aims to provide a smart and safe kitchen. The system detects the LPG gas leak using Nano-sensors and alerts the concerned individual through GSM system. The system uses two sensors, one attached to the chimney and other to the regulator of the LPG cylinder. Upon a leakage being detected, the sensor at the regulator actuates the system to cut off the gas supply immediately using a solenoid control valve. The sensor at the chimney checks for the permissible level of LPG mix in the air and when the level exceeds the threshold, the system sends an automatic SMS to the numbers saved. Further the sensor actuates the mini suction system fixed at the chimney within 20 seconds of a leakage to suck out the gas until the level falls well below the threshold. As a safety measure, an automatic window opening and alarm feature is also incorporated into the system. The key feature of this design is that the system is provided with a special inverter designed to make the device function effectively even during power failures. In this paper, utilization of sensors in the kitchen area is discussed and this gives the proposed architecture for real time field monitoring with a PIC Micro-controller.

**Keywords :** nano sensors, global system for mobile communication, GSM, micro controller, inverter

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