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Design and Development of Smart LPG Cylinder Stand

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Abstract: Liquid Petroleum Gas (LPG) is extensively used in the Indian Subcontinent for household and industrial purposes. However, the increasing demand for LPG cylinders leading to an increase in the number of accidents caused by gas leakages, resulting in building fires, suffocation, and explosions. Therefore, to address this issue, an IoT-based system is proposed that can efficiently monitor gas leakages with great precision and accuracy. This paper presents the design and development of an smart stand for LPG cylinders that continuously monitors and displays the weight of the LPG cylinder, detects gas leakages, and sends an SMS notification to the customer in case of a gas leakage. The proposed system uses an MQ-2 gas sensor, load cell, buzzer, LED, exhaust fan, GSM, and a wireless relay to detect gas leakages and notify the customer. The system also incorporates Blynk App, a cloud-based mobile application, to display the output of the monitored parameters in real-time.

Keywords: Embedded system, Blynk App, Smart LPG Stand, Gas Sensor, Load Cell, IoT

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