A WIRELESS SYSTEM TO MONITOR AND TO PREDICT THE CONSUMPTION AND REMAINING GAS IN A CYLINDER
IITM Technology Available for Licensing

Problem Statement

- LPG is a commonly used cooking fuel supplied through cylinders, but users lack awareness of their daily gas consumption and when the cylinder will run out.
- Existing systems for tracking and analyzing gas consumption have advantages and disadvantages related to technology, sensor placement, tracking, prediction, optimization, cost, time, performance, reliability, safety, and efficiency.
- The challenge is to develop an efficient and **cost-effective system that provides users with real-time gas consumption data and estimates the time when their LPG cylinder will be empty.**

Intellectual Property

- IITM IDF Ref. **977**
- **IN 387332**
- IITM IDF Ref. **1121 (Patent of Addition)**
- **IN 389165**

Technology Category/ Market

Category - IoT & Wireless Sensor Technology
Applications- To monitor and to predict the consumption and remaining gas in LPG cylinder.
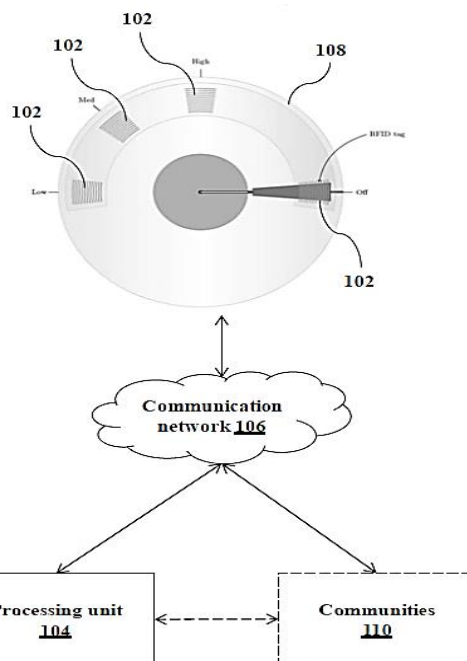**Industry-** Advanced Manufacturing

Market - Global gas sensor market size was estimated at USD 2.69 billion in 2022 and is expected to reach USD 2.90 billion in 2023, growing at a **CAGR of 9.5%.**

TRL (Technology Readiness Level)

TRL - 4: Technology validated in lab scale.

Research Lab

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FIG.1. illustrates a high level architecture of a system.

Technology

- The present invention relates to both a system and a method for **monitoring LPG consumption and predicting the remaining gas in a cylinder**.
- **Sensor Placement:** Sensors are placed on each position of a knob associated with a switch. This knob controls fuel supply through the switch.
- **Sensor Functionality:** The sensors send unique signals to indicate the status of fuel use at each knob position.
- **Calibration:** The method calibrates expected fuel usage time in the cylinder based on past usage data for a specified time period.
- **Usage Data:** The calibration is done in response to receiving unique signals from the sensors, which represent fuel use.
- **Residual Fuel Prediction:** The technology uses the calibration data to predict the amount of residual fuel in the cylinder.

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Key Features / Value Proposition

Accurate Fuel Monitoring:
The system provides precise fuel consumption tracking for improved resource management.

Predictive Insights:
It predicts residual fuel levels, allowing for timely refilling and preventing unexpected fuel shortages.

Real-time Status Updates:
Sensors offer real-time feedback on fuel usage at different settings for informed decision-making.

User-Friendly Interface:
The system is designed with an easy-to-use knob and sensor setup for operator convenience.

Versatile Application:
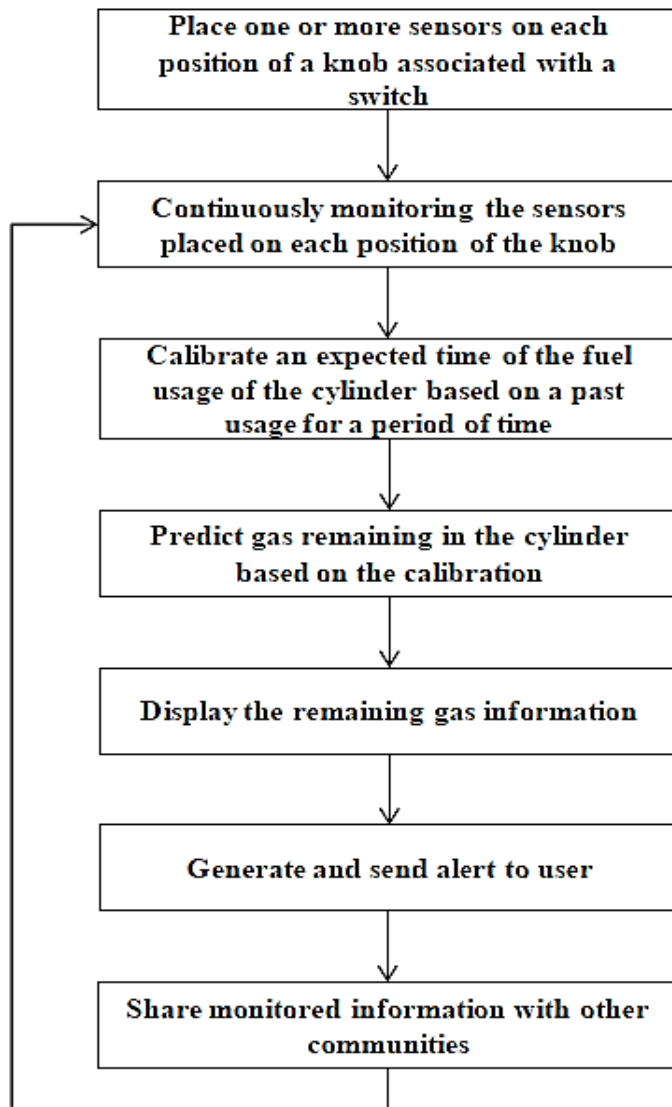Applicable in various industries where fuel monitoring is crucial, enhancing operational efficiency and cost savings.

FIG. 2. Flow chart that illustrates a method and system for monitoring gas consumption and predicting remaining gas in a cylinder.

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