LITERATURE SURVEY

DOMAIN: IOT
PROJECT TITLE: GAS LEAKAGE MONITORING & ALERTING SYSTEM FOR INDUSTRIES.
TEAM ID: PNT2022TMID15954
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Abstract: The Internet of Things (IoT) is the networking of 'things' by which physical things can communicate with the help of sensors, electronics, software, and connectivity. These systems do not require any human interaction. Internet of Things aim towards making life simpler by automating every small task around us. As much is IoT helping in automating tasks, the benefits of IoT can also be extended for enhancing the existing safety standards. Safety plays a major role in today's world and it is necessary that good safety systems are to be implemented in places of education and work. This work modifies the existing safety model installed in industries and this system can also be used in homes and offices. The traditional Gas Leakage Detector Systems though have great precision, fail to acknowledge a few factors in the field of alerting the people about the leakage. Therefore we have used the IoT technology to make a Gas Leakage Detector for society which having Smart Alerting techniques involving sending text message to the concerned authority and an ability performing data analytics on sensor readings.

Keywords : Internet of Things, Gas Leakage Detection, Smart Alerting Techniques

Introduction: The Internet of Things is an emerging topic of technical, social, and economic significance. Consumer products, durable goods, cars and trucks, industrial and utility components, sensors, and other everyday objects are being combined with Internet connectivity and powerful data analytic capabilities that promise to transform the way we work, live, and play. Projections for the impact of IoT on the Internet and economy are impressive, with some anticipating as many as 100 billion connected IoT devices and a global economic impact of more than $11 trillion by 2025. The Internet of Things (IoT) is an important topic in technology industry, policy, and engineering circles. This technology is embodied in a wide spectrum of networked products, systems, and sensors, which take advantage of advancements in computing power, electronics miniaturization, and network interconnections to offer new capabilities. The large-scale implementation of IoT devices promises to transform many aspects of the way we live. For consumers, new IoT products like Internet-enabled appliances, home automation components, and energy management devices are moving us toward a vision of the "smart home'', offering more security and energy efficiency. IoT systems like networked vehicles, intelligent traffic systems, and sensors embedded in roads and bridges move us closer to the idea of "smart cities'', which help minimize congestion and energy consumption. IoT technology offers the possibility to transform agriculture, industry, and energy production and distribution by increasing the availability of information along the value chain of production using networked sensors Gas leakage are a serious problem and are found in many residential, industries and vehicles such as Compressed Natural Gas(CNG). Gas leaks have been reported to cause accidents in many places. Gas leaks due to increasing demand from LPG users are often to improper and untimely action, leading to many dangerous accidents.[3] An effective method by installing a safety system such a situation as well as monitor the level of LPG in the cylinder is required so that users are aware of remaining Gas in cylinder.[4] There have been many accidents due to gas leakage in the last few years. There are some similar examples due to gas leakage. Due to gas leakage, LPG leak at one place in Pune caused loss of 4 people. And another example is, A 45 year old women, two boys and a girl were suffocated to death in a fire at a residence in Shahdara after an LPG cylinder exploded. The house caught fire due to leak in the LPG gas cylinder, resulting in the death of 4 people. There is a need for a system to detect the leakage and send the information to the first response team through wireless media. A leakage detection system that initiates a warning call or SMS will be more effective in the absence of people on-site.

Literature Survey:

A number of reviews on the subject of gas leakage detection techniques were done in the past either as part of research papers/technical reports on a certain leak detection method and other gas related subjects

S.NO	TITLE OF PAPER	YEAR OF PUBLICATION	JOURNAL NAME(AUTHOR)	INTERFERENCE
1	Sensor based gas leakage detector system.	2022	Neha Chourasia, Papiha Ajmire, Saurabh Shambharkar, Shraddha Khobragade, Sanket Bhajgaware, Shivani Janbandhu	1. The systems are often enhanced by adding an impact element which controls the gas leakage. 2. If it exceeds the required upper explosive level for the varied gases within the plant area.
2	A survey paper on gas leak detection using iot	2019	Manichandana,simrah ummeRuman,Harshavardhini Biderkota,Ms.Pr Anisha,Dr.B.V Ramana Murthy,And Mr.C Kishor Kumar	1. Large-scale implementation of iot devices promises to transform many aspects of the way we live. 2. System ensures a continuous monitoring of the gas levels.
3	Gas Leakage Detection and prediction using iot	2019	Nagabhushan Adiga,Meghana S.Naik,Avinash.B,Mamatha.G,Sadananda.L	1. Increased concentration of certain gases in the atmosphere can prove to be extremely dangerous 2. GSM module is used for making a call as well as sending text message
4	Gas Leakage detection and smart alerting system using iot	2018	Shital Imade,Priyanka Rajmanes,Aishwarya Gavali, prof.V.N.Nayakwadi.	1.System Can send the values to cloud server. 2.Smart alerting technique involving sending text message to the concerned authority and an ability performing data analytics on sensor readings
5	Automatic Gas Leakage Detection using iot	2020	Rajat Kumar Dwibedi,V.Vanitha, Sagar R D, P Phanisai,Ganjikunta Yeshwanth	1.It can detect the leakage Lpg and shut down the house's power supply automatically 2.MQ-2 sensor is highly sensitivity to propane.