SRI VENKATESWARA

COLLEGE OF ENGINEERING AND TECHNOLOGY

Thirupachur-631203, Tiruvallur TK & DT

Approved by AICTE New Delhi & Affiliated to Anna University, Chennai

(A Telugu Minority Institution)

Date : 01-06-2020

To

Managing Director,
Amulya Leather Impex
No.39, V.G.P Amudha Nagar,
Maduravoyal
Chennai- 600 095.

Dear Sir,

Subject: Request for Financial Assistance of Funded Project -Reg

I am requesting on behalf of (Sri Venkateswara College Of Engineering And Technology / Department of Electrical and Electronics Engineering), an esteemed institution known for its commitmentto excellence in engineering education and research. We are reaching out to explore the possibility of collaborating with your company on a funded project that aligns with both our academic goals and your company's expertise and interests. In this regard we request you to grant the permission for funded project on **"LPG GAS LEVEL MONITORING AND LEAKAGE DETECTION SYSTEM"**

FACULTY ANALYZER –Mr. M. NAMACHIVAYAM / AP/EEE

Thanking you

SRI VENKATESWARA COLLEGE OF ENGG. AND TECH. Thirupachur Pin : 631 203

Warm regards,

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Engineering and Technology,
Thirupachur, Thiruvallur - 631 203

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Sri Venkateswara College of
Engineering and Technology,
Thirupachur, Thiruvallur - 631 203

Amulya Leather Impex
AMULYA

Plot No 39, V.G.P. Amudha Nagar
Maduravoyal, Chennai - 600 095, INDIA
T : +91 44 2378 2340, 2378 2341, 2378 2342
E-mail : amulya_2342@bsnl.in
kumar@amulyaleatherimpex.com
www.amulyaleatherimpex.in

Date: 03.06.2020

To,

Mr. M.Namachivayam,

Assistant Professor,

Department of Electrical and Electronics Engineering,

Sri Venkateswara college of Engineering and Technology,

Thiruvallur. 631 203

Respected Sir,

Sub: Acceptance of Financial Assistance for your Funded Project –Reg;

I'm pleased to announce that the proposal submitted on Project work titled "**LPG GAS LEVEL MONITORING AND LEAKAGE DETECTION SYSTEM**" has been approved by our organization and sanctioned amount Rs. 5,48,000 (Five Lakhs Forty Eight Thousand Rupees only) through online payment. In future, we expect more innovative research projects to fulfill our Environment related problems.

S.NO	PROJECT CO-ORDINATOR	DURATION
1	Mr. M. Namachivayam /AP	6 Months

Thanking you

From Amulya Groups

AMULYA LEATHER IMPEX
Plot No. 39, V.G.P. AMUDHA NAGAR
MADURAVOYAL
CHENNAI-600 095

B.O.: No.8/2 (Old No.44/2), Kattur Sadayappan Street, Periamet, Chennai - 600 003.
Tel : +91 44 2561 1911, E-mail : accounts@amulyaleatherimpex.in

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Name	: NAMACHIVAYAM MUNUSAMY	Branch Name	: Thiruvallur
Communication Address	: S/O MUNUSAMY10LOGANATHAN STREETVENGAMEDU, KARUR, , TAMIL NADU, INDIA-639006	Branch sol ID	: 1838
Address Last Updated On	: 13/08/2019	Account Number	: 99980109956271
Regd. Mobile Number	: 919940269316	Customer ID	: 132123231
Email ID	: namachu30@gmail.com	Account Open Date	: 20/07/2019
Type of Account	: Savings Account	Account Status	: ACTIVE
Scheme	: SB FEDSALARY PREMIUM	Mode of Operation	: SINGLE
IFSC	: FDRL0001838	Joint Holders	: NIL
MICR Code	: 600049025	Nomination	: REGISTERED
SWIFT Code	: FDRLINBBIBD	Currency	: INR
Effective Available Balance	: 233.00	Date of Issue	: 10/12/2020

Statement of Account for the period 2020-12-10 to 2020-12-13

Date	Value Date	Particulars	Tran Type	Tran ID	Cheque Details	Withdrawals	Deposits	Balance	DR /CR
		Opening Balance						239.00	Cr
10-DEC-2020	10-DEC-2020	UPIOUT/413052944262/paytm-jiomobility@paytm//4814	TFR	S25698817		239.00		500.00	Cr
10-DEC-2020	10-DEC-2020	NFT/AMULYA GROUPS/856269159419/ICICI BANK	TFR	S42564850			548000.00	548500.00	Cr
11-DEC-2020	11-DEC-2020	SELF	TFR	S44614817		548000.00		500.00	
12-DEC-2020	12-DEC-2020	UPIOUT/412970138794 /googlebbpsutility@icici//4900	TFR	S44625337		147.00		353.00	Cr
13-DEC-2020	13-DEC-2020	UPIOUT/412872866606/cred. club@axisb/payment /7322	TFR	S96875044		120.00		233.00	Cr
		GRAND TOTAL				548506.0	548000.0		

Abbreviations Used:

CASH	: Cash Transaction	TFR	: Transfer Transaction
FT	: Fund Transfer	CLG	: Clearing Transaction
SBINT	: Interest on SB Account	MB	: Mobile Banking

DISCLAIMER: This computer generated statement contains the particulars of the transaction(s) in the account that have been updated till the time of day end operations of the CBS system of the Bank on theprevious working day and the same will not reflect the transaction(s) that have occurred in the account, if any, subsequent thereto. The Federal Bank Ltd. shall not be liable/responsible for want of fullparticulars of the transaction(s) at the time of the generation of this statement.

This is a computer generated statement which need not normally be signed. Contents of this statement will be considered correct if no error is reported within 21 days of the statement date.

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****END OF STATEMENT****

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Proceedings of the International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS 2023)
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LPG Gas Level Monitoring and Leakage Detection System

Mr.R Ranjith Kumar
Department of Electrical and Electronics Engineering
Kongu Engineering College
Perundurai, Erode, India
ranjithsat8@gmail.com

Mr.M Namachivayam
Department of Electrical and Electronics Engineering
Sri Venkateswara College of Engineering and Technology
Thirupachur, Tiruvallur, India
namachu30@gmail.com

Mr.M Deviprakash
Department of Electrical and Electronics Engineering
Kongu Engineering College
Perundurai, Erode, India
deviprakashm36@gmail.com

Mr.V Pradeep
Department of Electrical and Electronics Engineering
Kongu Engineering College
Perundurai, Erode, India
vpradeepkkv@gmail.com

Mr.K Selvakumar
Department of Electrical and Electronics Engineering
Kongu Engineering College
Perundurai, Erode, India
selvakuppusamy159@gmail.com

Ms.G Sharunithi
Department of Electrical and Electronics Engineering
Kongu Engineering College
Perundurai, Erode, India
gsharunithi@gmail.com

***Abstract*—Liquefied Petroleum Gas (LPG) plays a significant role in our daily lives. However, handling it with the utmost care is crucial due to its high ignitability, which can lead to fire outbreaks and explosions. The accurate calculation of gas leakage and the precise capacity of LPG cylinders remains challenging. To address these concerns, a robust gas leakage detection and monitoring system becomes imperative. The primary objective of this research design is to provide real-time information regarding the LPG gas level within the cylinder and promptly identify any instances of gas leakage. In the event of a gas leak, an alert mechanism, such as a buzzer, will notify the user. The design incorporates gas detectors and cargo cells that enable gas level identification and leak detection. Additionally, a television display visualizes the quantity of gas present, accompanied by alert messages. By activating the buzzer and indicator upon gas leakage detection, immediate attention is drawn to prevent potential hazards. This research design not only offers insights into the LPG gas level during refilling. It also functions as a powerful tool to mitigate gas leakage incidents and promote overall safety. Consequently, it proves instrumental in advancing LPG cylinder technology.**

***Keywords*—Arduino, Liquefied petroleum gas (LPG), gas leakage, Gas sensor, Liquid-crystal display (LCD).**

I. Introduction

LPG refers to a gas mixture made up of butane and propane that has no odour at all. It has both unsaturated and saturated hydrocarbons. Ethyl Mercaptan is a substance that is added to LPG to remove its natural smell. LPG in air has an explosive range of 1.8% to 9.5% of the gas volume. Depending on how much it weighs in the cylinder, LPG is divided into three categories: household, commercial, and industrial. 14.2 kg of LPG is the normal capacity of a residential cylinder[1]. In parallel, LPG cylinders in the Industrial and there are two types of commercial categories: one weighing 19 kilograms and the other weighing 35 kilograms. LPG is usually filled up to only 85%, because any amount beyond that will cause the gas to turn into vapor. This is because all are being careful to prevent dangers. If the temperature increases by 1°C, then the pressure of LPG in the cylinder goes up by 15 kilograms per square centimetre. LPG possesses a high level of danger due to its inherent flammability and potential hazards[2]. In the present age, where electricity dominates as the primary energy source, even a minor spark within the vicinity during a leakage of LPG can lead to a catastrophic explosion. Knowing the key safety protocols to adhere to during a gas leak is crucial for all users. Studies have been done on monitoring and finding leaks in LPG. Their attention was directed towards assessing the viability and credibility.

II. Implementation Setup

Here the product used to detect gas leaks and monitor LPG levels. A loadcell signal is amplified and sent to the Arduino via the HX711 amplifier. Arduino sends signals to the LCD. On the LCD, the percentage of gas in the cylinder is displayed.

By utilising the MQ-2 gas sensor [3-4], it is possible to detect gas leaks more easily. On the LCD, a warning message is appeared when the gas leak occurs, and a buzzer and BLDC fan are triggered.

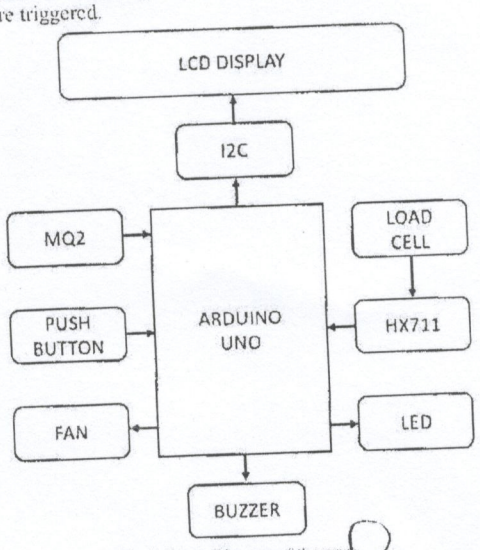

Fig. 1. Block Diagram of the work

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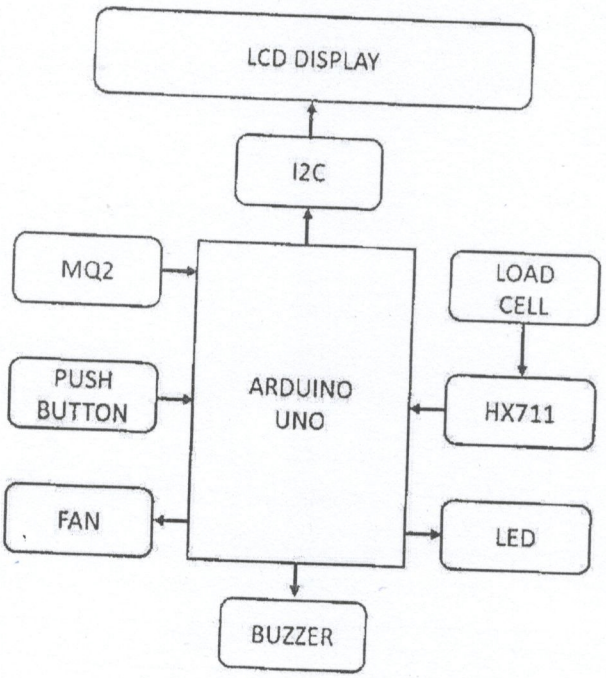
IMPLEMENTATION SETUP

Here the product used to detect gas leaks and monitor LPG levels. A loadcell signal is amplified and sent to the Arduino via the HX711 amplifier. Arduino sends signals to the LCD. On the LCD, the percentage of gas in the cylinder is displayed. By utilising the MQ-2 gas sensor [3-4], it is possible to detect gas leaks more easily. On the LCD, a warning message is appeared when the gas leak occurs, and a buzzer and BLDC fan are triggered.



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CONCLUSION

In LPG gas level monitoring and leakage detection systems are vital for ensuring safety and efficiency in gas stations that handle and dispense LPG gas. These systems provide realtime monitoring of gas levels, allowing for effective planning of LPG gas refills and preventing gas shortages that could disrupt operations. Moreover, the leakage detection system is crucial in detecting any potential gas leaks early, preventing accidents that could cause harm to staff and customers or damage to property. By detecting and responding quickly to gas leaks, these systems can minimize the risk of fire or explosion. Gas stations can integrate these systems into their LPG gas infrastructure, providing continuous and reliable monitoring of gas levels and early detection of leaks. This integration enhances safety measures and helps gas station operators meet regulatory compliance requirements. In summary, investing in LPG gas level monitoring and leakage detection systems in gas stations is a necessary measure that ensures safe and efficient handling and dispensing of LPG gas. These systems provide accurate monitoring of gas levels, prevent gas leaks, and enhance safety measures, making them an essential component of any LPG gas station installation.

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Acceptance and provision of financial Assistance for funded project

Name of the Research project/Endowment: **"LPG Gas Level Monitoring And Leakage Detection System"**

Name of the Principals Investigator : Mr. M.NAMACHIVAYAN, Principal Investigator

Department of Principal Investigator : Electrical and Electronics Engineering

Name of the Funding Agency : Amulya Leather Impex

Amount Sanctioned (INR in Lakhs) : **Rs.5,48,000/-**

PROPOSED SOLUTION AND ITS COST ESTIMATE

Cost Estimate: The project cost is estimated to be Rs. 5,48,000/- based on the scope of work and deliverables for duration time. To ensure that the project begins and ends on time, all the funds to transferring in favour of FEDERAL BANK, Thiruvallur in the specified amount.

PROPOSED COST

S.NO	ITEM	AMOUNT
1	EQUIPMENTS	2,20,000
2	COMPONENTS	2,60,000
3	OTHER EXPENSES INCLUDED (CGST+ SGST)	68,000
	TOTAL (INR in Lakhs)	**5,48,000**

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Sudhanandhen Kalvi Nagar, Chennimalai, Erode - 638 112, TamilNadu.

Certificate of Presentation

This is to certify that

M Namachivayam

have successfully presented the paper entitled

LPG Gas Level Monitoring and Leakage Detection System

at the International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS 2023) held from 18th to 20th October 2023 at M. P. Nachimuthu M. Jaganathan Engineering College, Chennimalai, Erode, India.

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Session Chair

Dr. D. Sabapathi
Conference Chair

Dr. M. Ramesh
Principal

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