



Department of Electrical and Computer Engineering

North South University

Senior Design Project EEE499

GSM Based Automated Gas Leakage Detector

Submitted By: (Group - "Power House")

- 1. Name: Md. Jubayet Hossain ID: 1812571043**
- 2. Name: M.A. Kaium ID : 1812585043**
- 3. Name: Md. Sadatur Rahman ID: 1811587643**

Supervisor:

Dr. Shohana Rahman Deeba

Assistant Professor

Department of ECE

Fall 2022

LETTER OF TRANSMITTAL

January, 2023

To

Dr. Rajesh Palit
Professor & Chair

Department of Electrical and Computer Engineering

Subject: Submission of GSM Based Automated Gas Leakage Detector

Dear Sir,

With due respect, we would like to submit our Project Report on “GSM Based Automated Gas Leakage Detector” as a part of our BSc program. The report deals with a detector to detect the gas leakage as early as possible. This project is to present such a design that can automatically detect and stop gas leakage in vulnerable premises. We tried our level best to make the report meaningful and informative.

This project is very much valuable to us as it helped us to gain experience from practical field. It was a great learning experience for us. We tried to the maximum competence to meet all the dimensions required from this report.

We will be highly obliged if you are kind enough to receive this report and provide your valuable judgment. It would be our immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

Md. Jubayet Hossain
Department of ECE
North South University, Bangladesh

M.A. Kaium
Department of ECE
North South University, Bangladesh

Md. Sadatur Rahman
Department of ECE
North South University, Bangladesh

APPROVAL

The project entitled “GSM Based Automated Gas leakage Detector” by *Md. Jubayet Hossain (ID: 1812571043)*, *M.A. Kaium (ID: 1812585043)*, *Md. Sadatur Rahman (ID: 1811587643)* is approved in partial fulfillment of the requirement of the Degree of Bachelor of Science in Computer Science and Engineering on January, 2023 and has been accepted as satisfactory.

So, I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation.

Supervisor:

Dr. Shohana Rahman Deeba

Assistant Professor

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh

Department Chair:

Dr. Rajesh Palit

Professor & Chair

Department of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh.

DECLARATION

This is our truthful declaration that the “GSM Based Automated Gas Leakage Detector” we have prepared is not a copy of any “Gas leakage Detector Project Report” previously made by any other team. We also express our honest confirmation in support of the fact that the said “GSM Based Automated Gas Leakage Detector Project Report” has neither been used before to fulfill any other course related purpose nor it will be submitted to any other team or authority in future.

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Md. Jubayet Hossain

Department of ECE

North South University, Bangladesh

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M.A. Kaium

Department of ECE

North South University, Bangladesh

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Md. Sadatur Rahman

Department of ECE

North South University, Bangladesh

ACKNOWLEDGEMENT

First of all, we wish to express our gratitude to the Almighty for giving us the strength to perform our responsibilities and complete the report.

We would like to wholeheartedly thank our honorable faculty, project supervisor and renowned researcher **Dr. Shohana Rahman Deeba** who has been both motivational and inspirational and his relentless guidance has helped us to achieve which would have been impossible to achieve without his wise mentoring. We are really indebted to him. Without his part this project would never have been successful.

We thank our friends and family for their moral support to carve out this project and always offer their support.

ABSTRACT

LPG is a significant and effective fuel, for the most part utilized as a part of private spots for cooking. LPG for the most part filled in cylinder which is solid and can't be harmed effortlessly. In any case, breaks may happen from gas cylinder, controller and gas pipe tube when these are definitely not in a decent condition and may cause a mishap. Gas leakage in industrial area causes many health issues. Thus, to prevent such disasters happen, the atmosphere of a workplace should be regularly monitored and controlled, in order to maintain the clean air environment. However, efforts in industrial air quality control have been impeded by the lack of science-based approaches to identify and assess atmosphere air quality and level of dangerous gas. Therefore, a monitoring system for gas leakage detection needs to be developed. For the development of this system, the combustible gas sensor (MQ5) was used in order to detect the present of methane (CH₄) and carbon monoxide gas (CO). This sensor will detect the concentration of the gas according to the voltage output of sensor and operated in the alarm system, autonomous control system and monitoring system by using Arduino uno as the microcontroller for the whole system.

Keywords: GSM (Global System for mobile communications), LPG (Liquefied petroleum gas), Gas sensor MQ-5, Arduino Uno Board.