NORTH SOUTH UNIVERSITY

Department of Electrical & Computer Engineering

Spring '19

EEE/ETE 499

Project Report

Direct Industrial Experiment and Theoretical Studies for Fuel Level Monitoring of Vehicles

Project Supervisor:

Dr. Mahdy Rahman Chowdhury
Assistant Professor
Department of Electrical & Computer Engineering
North South University

Section: 02

Group Members:

Name	Student ID
Tofawel Ahmad Shahin	1521336045
Md. Towhidur Rahman	1512526043
Md. Shamim Reza	1511050043
Md. Farhad Ibna Alam Sajib	1511420043

AGREEMENT FORM

We take great pleasure in submitting our senior design project report on "Direct Industrial Experiment and Theoretical Studies for Fuel Level Monitoring of Vehicles" This report is prepared as a requirement of the Capstone Design Project CSE/EEE/ETE 499 A & B which is a two semester long senior design course. This course involves multidisciplinary teams of students who build and test custom designed systems, components or engineering processes. We would like to request you to accept this report as a partial fulfilment of Bachelor of Science degree under Electrical and Computer Engineering Department of North South University.

Declared By:

Tofawel Ahmad Shahin

……

Name: Tofawel Ahmad Shahin
ID: 1521336045

md shamim Reza

……

Name: Md. Shamim Reza
ID: 1511050043

Towhidur Rahman

……

Name: Md. Towhidur Rahman

ID: 1512526043

Md. Farhad Ibna Alam Sajib

……

Name: Md. Farhad Ibna Alam Sajib

ID: 1511420043

Approved By:

……

Supervisor

Dr. Mahdy Rahman Chowdhury

Assistant Professor, Department of Electrical and Computer Engineering

North South University, Dhaka, Bangladesh

.....

Dr. K.M.A Salam

Professor and Chair, Department of Electrical and Computer Engineering

North South University, Dhaka, Bangladesh

ACKNOWLEDGEMENT

At first, we would like to show our appreciation for our honourable Faculty Advisor, Mr. Mahdy Rahman Chowdhury Sir for guiding us through the whole semester and making us capable of doing this project. He was very supportive and helpful with the project and the course. He was successful in bringing out the best in us and also taught us how to work efficiently within a very short period of time.

Through this project we have learnt how to work together as a team and to encourage each other to bring out the best in ourselves. Moreover, we have also been taught how to represent a technical project through an impressive presentation, how to demonstrate a project in an efficacious manner and last but not the least, how to write a sophisticated technical report.

Besides, our gratefulness is divine to the North South University, ECE department for providing us a course such as EEE 499 in which we get a glimpse of real-life engineering projects.

We also acknowledge our profound sense of gratitude towards our friends and family for their moral support to complete this project.

Title: Direct Industrial Experiment and Theoretical Studies for Fuel Level Monitoring of Vehicles.

Abstract: Nowadays, actual record of fuel filled and fuel consumption in construction vehicles is not maintained, it results enormous financial loss. Advances in technologies and availability of economical open source hardware systems are setting a new trend in system designing. Use of technologies like Internet of Things (IoT) can ease the process of data collection and analysis. The main objective of the project is to describe a system which can monitor or track the location of the construction vehicles from a centralized place. System design will be generalized for monitoring different parameters like location, engine run hour, fuel consumption and many more. Proposed system uses open source sensor, controller in the back engine that support GSM or GPRS module for data transfer from remote location and GPS tracker to track the current location of those vehicles.

There is huge amount of fuel theft usually happens from the vehicles nowadays. So, if the owners want to monitor the conditions of the vehicle by sitting at home such as to know the fuel level, to know the speed of the vehicle, then they can use this device. The device we wanted to make can solve those problems. In the device we used an Arduino mega which is connected with an accelerometer sensor (MPU 6050) and an SD Card module. In the Arduino mega we defined an analog pin(A0) and a digital pin (30) which is connected with the fuel line and the engine line of the particular vehicle. Then the ADC value and the values from the sensor we get from the Arduino is actually stored in the SD Card. After analysing the data, the fuel can be found. Our device is extremely cost effective, so the owners of any particular vehicle or any vehicle company can buy this device at a very lower price compared to the other fuel level monitoring device. It also improves the accuracy and the sensor we used in the device can be used in many different purposes.