

SMART BRIDGE - AUTOMATIC INCREASE OF HEIGHT DURING FLOOD

**Project report submitted in partial fulfilment of the requirements for the degree of
'Bachelor of Technology'
in
Maulana Abul Kalam Azad University of Technology
2024**

By

**Mr. SUBHAJIT ROY
Reg.No.-212630102820045
Roll No.-26302821018**

**Mr. SOUMYADEEP DUTTA
Reg.No.-212630102820044
Roll No.-26302821017**

**Mr. SUBHANKAR KUNDU
Reg.No.- 212630102820042
Roll No.- 26302821015**

**Mr. MRINMOY BHATTACHARJEE
Reg.No.-212630102820031
Roll No.- 26302821012**

**Mr. AMIT DUTTA
Reg.No.- 212630102820049
Roll No.- 26302821024**

Under the Supervision

**Mr. Sreedip Ghosh
Assistant Professor
Electrical & Electronics Engineering Department**



REGENT EDUCATION AND RESEARCH FOUNDATION

SEWLI TELINI PARA, SH1, MALIR MATH, BARRACKPORE, WEST BENGAL 700121



RECOMMENDATION

I hereby recommended that the project title **"SMART BRIDGE -AUTOMATIC INCREASE OF HEIGHT DURING FLOOD"** submitted by "Mr. Subhajit Roy", "Mr. Soumyadeep Dutta ", "Mr. Subhankar Kundu", "Mr. Mrinmoy Bhattacharjee", "Mr. Amit Dutta" is accepted in partial fulfillment of the requirement for the four year degree of **"BACHELOR OF TECHNOLOGY"** in **"ELECTRICAL & ELECTRONICS ENGINEERING"** from the college **"REGENT EDUCATION & RESEARCH FOUNDATION"** under **"MAKAUT"**.

.....*Sreedip Ghosh*.....

Mr. Sreedip Ghosh

Project Supervisor

Assistant Professor

Electrical & Electronics Engineering Department

Regent Education & Research Foundation



Certificate of Approval

This is to certify that the Dissertation entitled "SMART BRIDGE - AUTOMATIC INCREASE OF HEIGHT DURING FLOOD" is the work done by "Mr. Subhajit Roy", "Mr. Soumyadeep Dutta", "Mr. Subhankar Kundu", "Mr. Mrinmoy Bhattacharjee", "Mr. Amit dutta" in B. Tech, for the award of degree of "Bachelor of Technology", at Regent Education & Research Foundation, Barrackpore, under the supervision and guidance of "Mr. Sreedip Ghosh" Assistant Professor (EEE) at Regent Education & Research Foundation. The work is completed and ready for evaluation in partial fulfillment for the award of Bachelor of Technology, under the Maulana Abul Kalam Azad University of Technology, during the academic year 2023-2024.

Head of the Department (EEE)



Principal



DECLARATION BY CANDIDATE

I hereby declare that the Project Work on “**SMART BRIDGE -AUTOMATIC INCREASE OF HEIGHT DURING FLOOD**” is done by us Mr. Subhajit Roy, Mr. Soumyadeep Dutta, Mr. Subhankar Kundu, Mr. Mrinmoy Bhattacharjee, Mr. Amit Dutta submitted to Regent Education & Research Foundation for the requirement of the degree of Bachelor of Technology”, under Maulana Abul Kalam Azad University of Technology, during the academic year of 2023-2024. The project work is totally genuine & we have not copied it from any other sources.

Mr. Subhajit Roy
Reg.No.212630102820045
RollNo.26302821018
B. Tech,4th Year
Regent Education& Research Foundation.

Mr. Soumyadeep Dutta
Reg. No.212630102820044
RollNo.- 26302821017
B. Tech,4th Year
Regent Education &Research Foundation

Mr.Subhankar Kundu
Reg. No.- 212630102820042
RollNo.- 26302821015
B. Tech,4th Year
Regent Education& Research Foundation

Mr. Mrinmoy Bhattacharjee
Reg. No.212630102820031
RollNo.26302821012
B. Tech,4th Year
Regent Education & Research Foundation

Mr. Amit Dutta
Reg. No.- 212630102820049
RollNo.- 26302821024
B. Tech,4th Year
Regent Education & Research Foundation



ACKNOWLEDGMENT

We would like to express my sincere gratitude to all the people without whom we cannot be able to make this project. First, we would like to thanks our parents as I am really appreciated by them. Then it is a genuine pleasure to express our deep sense of thanks and gratitude to our mentor and guide, Mr. Sreedip Ghosh, Assistant Professor (EEE), for his valuable time and help throughout the project work. His dedication and keen interest and above all his overwhelming attitude to help his students have been solely and mainly responsible for completing my work. His timely and scholarly advice and scientific approach have helped me to a great extent to complete this work. We are also grateful to other faculty members for their moral support during this period of work. We also extend our sincere thanks to those, who have directly or indirectly helped us in completing this job.

CHAPTER-1

ABSTRACT

Floods lead to a vast loss of life and property in many countries. But in developing countries the lack of proper technology leads to more loss of life and property due to flood. Bridges are important in modern world. Bridges add beauty to the roads. Bridge failures are one of the most infrastructure problems in the world. It often leads to the catastrophic consequences, loss of life, restricted commerce. Whenever there is a disaster there is loss of lives, damage to the public property. The objective of this project is to monitor the flood situation lift the bridge in case of danger in the form of buzzer sound. A smart bridge is one that senses some significant condition of its environment or behavior and then automatically reacts to that condition.

This paper gives a brief idea about the historical background about the development of bridges. Bridges are the foundation of a country's transport network but they are expensive to build and maintain. So, care should be taken for the bridges. For that purpose, sensors are used. The idea of controlling different parameters through proper functioning, monitoring and analysis of data is effective for preventing the bridge from damages. This project predominantly focuses about monitoring and evaluation of bridge condition through various sensors used. Advancement in sensor technology have brought the automated real-time bridge health monitoring system.

Smart Automated Parking Management System Using PLC Technology

Project report submitted in partial fulfilment of the requirements for the degree of
'Bachelor of Technology'
in
Maulana Abul Kalam Azad University of Technology
2024

By

Mr. Bibek Singh
Reg. No:- 202630102810002
Roll No:- 26302820003

Ms. Titli Paul
Reg. No:- 202630102810003
Roll No:- 26302820002

Ms. Swagata Debnath
Reg. No:- 212630102820024
Roll No:- 26302821058

Mr. Mahargha Sarkar
Reg. No:- 212630102820025
Roll No:- 26302821062

Mr. Bishal Biswas
Reg. No:- 212630102820054
Roll No:- 26302821066

Under Guidance of

Shreyashee Sengupta
(Assistant Professor)
(Electrical & Electronics Engineering Department)



Department of Electrical & Electronics Engineering

Regent Education of Research Foundation Group of Institutions
Barakathalia(Barrackpore), P.O.- Sewli Telinipara, Kolkata-700121

RECOMMENDATION

I hereby recommended that the project title "Smart Automated Parking Management System Using PLC Technology" submitted by "Mr. Bibek Singh", "Ms. Tilti Paul", "Ms. Swagata Debnath", "Mr. Mahargha Sarkar", "Mr. Bishal Biswas" is accepted in partial fulfilment of the requirement for the four year degree of "Bachelor Of Technology" in "Electrical & Electronics Engineering" from the college "Regent Education & Research Foundation Group Of Institutions" under "Maulana Abul Kalam Azad University of Tecnology".

S. Sengupta.

Mrs. Shreyashee Sengupta

(Project Supervisor)

(Assistant Professor)

(Department of Electrical & Electronics Engineering)

(RERFGI)

CERTIFICATE OF APPROVAL

This is to certify that the Dissertation entitled "Smart Automated Parking Management System Using PLC Technology" is the work done by "Mr. Bibek Singh", "Ms. Tilti Paul", "Ms. Swagata Debnath", "Mr. Mahargha Sarkar", "Mr. Bishal Biswas" in B.Tech, for the award of degree of "Bachelor of Technology", at Regent Education & Research Foundation Group of Institutions, Barrackpore, under the supervision and guidance of "Mrs. Shreyashee Sengupta" Assistant Professor (EEE) at RERFGI. The work is completed and ready for evaluation in partial fulfilment for the award of Bachelor of Technology, under the Maulana Abul Kalam Azad University of Technology, during the academic year 2023-2024.

Am 06/06/24

H.O.D(EEE)



DECLARATION BY CANDIDATE

I hereby declare that the project work on "Smart Automated Parking Management System Using PLC Technology" is done by us; Bibek Singh, Tilti Paul, Swagata Debnath, Mahargha Sarkar, Bishal Biswas submitted to Regent Education & Research Foundation Group of Institutions for the requirement of the degree of "Bachelor of Technology", under Maulana Abul Kalam Azad University of Technology, during the academic year of 2023-2024. The project work is totally genuine & we have not copied it from any other sources.

Mr. Bibek Singh

Reg. No:- 202630102810002

Roll No:- 26302820003

B.Tech, EEE, 4th Year

RERFGI

Ms. Titli Paul

Reg. No:- 202630102810003

Roll No:- 26302820002

B.Tech, EEE, 4th Year

RERFGI

Ms. Swagata Debnath

Reg. No:- 212630102820024

Roll No:- 26302821058

B.Tech, EEE, 4th Year

RERFGI

Mr. Mahargha Sarkar

Reg. No:- 212630102820025

Roll No:- 26302821062

B.Tech, EEE, 4th Year

RERFGI

Mr. Bishal Biswas

Reg. No:- 212630102820054

Roll No:- 26302821066

B.Tech, EEE, 4th Year

RERFGI

ACKNOWLEDGEMENT

We would like to express my sincere gratitude to all the people without whom we can't be able to make this project. First, we would like to thanks our parents as I am really appreciated by them. Then it is a genuine pleasure to express our deep sense of thanks and gratitude to our mentor and guide, **Mrs. Shreyashee Sengupta**, Assistant Professor (EEE) and also thanks to **Dr. Suman Kr Dey**, H.O.D(EEE) for his valuable time and help throughout the project work. His dedication and keen interest and above all his overwhelming attitude to help his students have been solely and mainly responsible for completing my work. His timely and scholarly advice and scientific approach have helped me to a great extent to complete this work. We are also grateful to other faculty members of EE & EEE department for their moral support during this period of work. We also extend our sincere thanks to those, who have directly or indirectly helped us in completing this work.

A PROJECT REPORT ON
**Train track crack detection and accident
avoidance system**

Submitted in partial fulfillment of the requirements

For the award of the degree

BACHELOR OF TECHNOLOGY
IN
**ELECTRICAL & ELECTRONICS
ENGINEERING**

SUBMITTED BY

VASKAR PAUL -	26302821057
SAGAR GAIN -	26302821067
ARKADEEP MANDAL-	26302821061
AKASH SARKAR -	26302821060
RIA ROY -	26302821047
MANAS PAUL-	26302821054

Under the Guidance of
MR. SANDEEP CHAKRABORTY



DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

**REGENT EDUCATION AND RESEARCH FOUNDATION GROUP
OF INSTITUTE AT BARRACKPORE, NORTH 24 PARGANAS**

AFFILITED TO

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY,

WEST BENGAL. JUNE, 2024

ACKNOWLEDGEMENT

I take this opportunity to place on record my deep sense of gratitude to **Mr. SANDEEP CHAKRABORTY** for his valuable guidance, encouragement and helpful criticism during the course of this project work. My thanks are also to **Dr. SUMAN KUMAR DEY**, Head of Electrical & Electronics Engineering Department for his constant encouragement during my work and for providing necessary facilities to carry out the project. I also grateful to **PROF. SAMIK CHAKRABORTY**, Principal, RERFGI for giving me this opportunity to be a part of this esteemed institution and facilitate me for carrying out the project work. Last, but not the least, I thank all the staff members of Electrical Engineering Department, RERFGI for helping me to carry out the thesis. Finally I am grateful to my all family member for giving their continuous support and encouragement throughout the process from beginning.

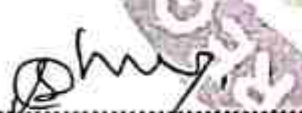


REGENT EDUCATION & RESEARCH FOUNDATION Group of Institutions

CERTIFICATE

We hereby certify that the project report prepared by *Mr. Vaskar Paul, Mr. Sagar Gain, Mr. Arkadeep Mandal, Ms. Ria Roy, Mr. Manas Paul and Mr. Akash Sarkar* entitled "Train track crack detection and accident avoidance system" be accepted in partial fulfilment of the requirements for awarding the degree of "Bachelor of Technology in Electrical & Electronics Engineering" Session [2023-2024] in the Department of Electrical & Electronics Engineering, RERFGOI, Barrackpore. The forgoing PROJECT is hereby approved as a creditable study of an Engineering Subject carried out and presented in a manner of satisfactory to warrant its acceptance as a pre-requisite to the DEGREE for which it has been submitted.

It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed and conclusion drawn therein but approve the PROJECT only for the purpose for which it has been submitted.


Mr. Sandeep Chakraborty
(Project Guide)
Assistant Professor


Dr. Suman Kumar Dey
(Head of the Department)
Assistant Professor
Department of Electrical Electronics
Engineering
Regent Education & Research Foundation
Barrack pore, North 24 Parganas



Campus: Regent Education & Research Foundation Group of Institutions
E-mail: rerfhoikata@gmail.com, Website: www.rerf.in

Campus Address:

Bara Kanthalia, Barrackpore P.O.
Sewli Tellingpara, P.S.:
Titagarh Kolkata - 700 121
Tel.: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Office Address:

11/3, Biresw Guha Street 7th
- 700 017
Tel.: 033-3221-3013



REGENT EDUCATION & RESEARCH FOUNDATION Group of Institutions

RECOMMENDATION

We hereby recommend that the project entitled "Train track crack detection and accident avoidance system" being submitted by Vaskar Paul (Roll No- 26302821057), Sagar Gain (Roll No- 26302821067), Arkadeep Mandal (Roll No- 26302821061), Akash Sarkar (Roll No- 26302821060), Ria Roy (Roll No- 26302821047), Manas Paul (Roll No- 26302821054), to MAKAUT for the award of the degree of Bachelor of Technology in Electrical & Electronics Engineering is the record of his Bonafide research work carried out under my supervision and guidance. The results presented in this thesis have not been submitted elsewhere for the award of any other degree or diploma.

This work in my opinion, has reached the standard of fulfilling the requirement for the award of Degree of Bachelor of Electrical & Electronics Engineering.

It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed and conclusion drawn therein but approve the PROJECT only for the purpose for which it has been submitted

Suman Kumar Dey
Assistant. Professor
(Head of the Department)
Assistant Professor

Department of Electrical Electronics Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas



Sandeep Chakraborty
Assistant. Professor
Project Guide
Department of EE

Regent Education & Research Foundation
Barrackpore, North 24 Parganas

Campus: Regent Education & Research Foundation Group of Institutions

E-mail: rerf.kolkata@gmail.com, Website: www.rerf.in

Campus Address:

Bara Kanthalia, Barrackpore P.O: Sewli Telinipara,
P.S.: Titagarh Kolkata - 700 121
Tel.: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Office Address

11/3, Biresw Guha Street 7th Floor,
Kolkata
- 700 017
Tel.: 033-3221-3013

A PROJECT REPORT ON
ARDUINO BASED FINGER PRINT DOOR LOCK

Submitted in partial fulfillment of the requirements

For the award of the degree

BACHELOR OF TECHNOLOGY
IN
ELECTRICAL & ELECTRONICS ENGINEERING



SUBMITTED BY

SARTHAK BHATTACHARYA

SAYANTANI DAS

SHUBHAM MITRA

RANADIP DAS

DEBOPRIYO GARAI

Under the Guidance of

MS. RAJALAKSHMI CHANDRASEKHAR

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

REGENT EDUCATION AND RESEARCH FOUNDATION GROUP OF INSTITUTES

BARRACKPORE, NORTH 24 PARGANAS

AFFILITED TO

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

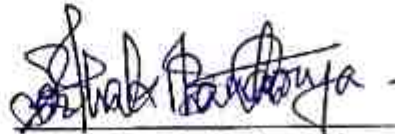
ACKNOWLEDGMENT

The analysis of the project work wishes to express our guide to **Asst. Prof. Ms. RAJALAKSMI ANDRASEKHAR** for allowing the degree attitude and providing effective guidance in department of project work. His conscription of the topic and all the helpful hints, he provided, contributed greatly to cessful development of this work, without being pedagogic and overbearing influence.

We also express my sincere guidance to **Asst. Dr. SUMAN KUMAR DEY**, Head of Department of Electrical & Electronics Engineering of Regent Education and Research Foundation Group of Institutions for giving the scope of successfully carrying out the project work.

Finally, we take this opportunity to thank to **Dr. SAMIK CHAKRABORTY** Principal of Regent Education and Research Foundation Group of Institutions for giving me the scope of carrying out the project work.

Date: 06/06/24



Mr. Sarthak Bhattacharya

Registration No- 212630102820059



Ms. Sayantani Das

Registration No- 212630102820035



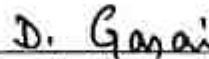
Mr. Ranadip Das

Registration No- 212630102820020



Mr Shubham Mitra

Registration No-212630102820006



Mr. Debopriyo Garai

Registration No- 212630102820038



REGENT EDUCATION & RESEARCH FOUNDATION

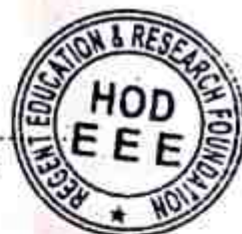
Group of Institutions

CERTIFICATE

We hereby certify that the project report prepared by *Mr. Sarthak Bhattacharya, Ms. Sayantani Das, Mr. Shubham Mitra, Mr. Ranadip Das, Mr. Debopriyo Garai* and entitled "ARDUINO BASED FINGER PRINT DOOR LOCK" be accepted in partial fulfillment of the requirements for awarding the degree of "Bachelor of Technology in Electrical & Electronics Engineering" Session [2023-2024] in the Department of Electrical & Electronics Engineering, RERFGI, Barrackpore. The forgoing PROJECT is hereby approved as a creditable study of an Engineering Subject carried out and presented in a manner of satisfactory to warrant its acceptance as a pre-requisite to the DEGREE for which it has been submitted. It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed and conclusion drawn there in but approve the PROJECT only for the purpose for which it has been submitted.

Ms. Rajalakshmi Chandrasekhar
(Project Guide)
departmental)
Assistant Professor
Department of Electrical Engineering

Dr. Suman Kumar Dey
(Head of the Dept.)



Assistant Professor
Department of Electrical & Electronics Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas

Campus: Regent Education & Research Foundation Group of Institutions
E-mail: rerfkolkata@gmail.com, Website: www.rerf.in

Campus Address:

Sara Kanthalia, Barrackpore
P.O: Sewli Telinipara, P.S.:
Itanagarh Kolkata-700121
Tel.: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Office Address:

11/3, Biresh Guha
Street 17th Floor, Kolkata-
700017
Tel.: 033-3221-3013

ABSTRACT

This concept which is of Fingerprint door locker is related to the security issues in the day today life, the physical key can be made as duplicate in very cheap cost and the key can lost somewhere or the key can steal, to overcome these issues we can use biometric security gadgets and try improvise the security much more because it can never be stolen it cannot be lost and the stealing chance of duplication are very low to break the security. From the old times the security is the big issue for the company's houses and other places and every person is worried about the security now a days. So, a solution to such problems can be by combining door lock with biometrics. Biometric verification is any means by which a person can be uniquely identified by evaluating one or more distinguishing biological traits. Unique identifiers include fingerprints, hand geometry, earlobe geometry, retina and iris patterns, voice waves, DNA, and signatures. The fingerprint sensor will take the fingerprint of the user and forward it to the microcontroller to match with its records. If the print matches with one of the fingerprints of the microcontroller's memory, the microcontroller will lock or unlock the latch, based on its current state. If the fingerprint do not match then nothing happen. The door lock is unlocked and the user have to retried. The system will be reset once a known print will be entered [15]. Here we will use fingerprint for biometric verification as it is one such thing which is unique to every individual and the use of fingerprint as the key to door locks can overcome the security problem of unauthorized people trespassing to our homes, shops, offices, etc. to a great extent as duplicate in such key is not possible. Also, this system will not lead to problems like losing keys because we do not require carrying keys if this system is used instead of traditional locks. So, using Adriano we will try to implement the system with features which will increase the security level.



A PROJECT REPORT
ON

MICROCONTROLLER USING AUDRINO EMBEDDED PROJECT

SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS

FOR
THE AWARD OF THE DEGREE
A PROJECT REPORT
ON

**BACHELORS OF TECHNOLOGY
IN**

**ELECTRICAL & ELECTRONICS ENGINEERING
UNDER THE GUIDANCE OF**

DR. SUMAN JANA

DEPARMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
REGENT EDUCATION AND RESEARCH FOUNDATION
GROUP OF INSTITUTIONS
BARRACKPORE, NORTH 24 PARGANAS

AFFILIATED TO

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY
WEST BENGAL**

Submitted by :

STUDENTS NAME		UNIVERSITY ROLL NUMBER
SOUVIK CHATTERJEE	:	26302821029
ARUPNEEL DUTTA	:	26302821031
INDRANI KOLEY	:	26302821034
MOHAMMED NAZRUL ANSARI	:	26302821041
TAMAL DINDA	:	26302821042

ACKNOWLEDGEMENT

I TAKE THE OPPORTUNITY TO PLACE ON RECORD OUR DEEP SENSE OF GRATITUDE TO **DR. SUMAN JANA** FOR HIS VALUABLE GUIDANCE, ENCOURAGEMENT AND HELPFUL CRITICISMS DURING THE COURSE OF THE PROJECT WORK.

WITH SPECIAL THANKS TO **DR. SUMAN KUMAR DEY, HEAD OF THE DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING DEPARTMENT** FOR HIS CONSTANT ENCOURAGEMENT DURING MY WORK AND FOR PROVIDING NECESSARY FACILITIES TO CARRY OUT THE PROJECT.

WE ARE ALSO GRATEFUL TO **PROF. SAMIK CHAKRABORTY, PRINCIPAL, RERFGOI,** FOR GIVING US THIS OPPORTUNITY TO BE A PART OF THIS ESTEEMED INSTITUTION AND FACILITATE US FOR CARRYING OUT THE PROJECT WORK.

LAST BUT NOT THE LEAST, WE ARE VERY MUCH THANKFUL TO **ALL THE STAFF MEMBERS OF ELECTRICAL & ELECTRONICS DEPARTMENT, RERFGOI** FOR US IN VARIOUS ASPECTS TO CARRY OUT THE PROJECT.

FINALLY, WE ARE ALSO VERY MUCH THANKFUL & GRATEFUL TO ALL RERFGOI FAMILY FOR GIVING THEIR CONTINUOUS SUPPORT AND ENCOURAGEMENT THROUGHOUT THE PROCESS FROM THE BEGINNING TILL END.

THANKING YOU.



**REGENT EDUCATION & RESEARCH FOUNDATION
GROUP OF INSTITUTIONS**

CERTIFICATE

This is to certify that the dissertation entitled “**Microcontroller Using Audrino Embedded Project,**” submitted by **Souvik Chatterjee, Tamal Dinda, Indrani Koley, Arupneel Dutta & Mohammed Nazrul Ansari** to the Regent Education and Research Foundation Group of Institutions, constitutes a record of the project work completed by the students. This project was conducted under the supervision of **Dr. Suman Jana** and has been presented for consideration in partial fulfillment of the requirements for the degree of Bachelor of Technology.

To the best of our knowledge, the content presented in this dissertation was carried out by the above-mentioned students and has not been submitted to any other institution for the award of any degree or diploma by the same.

Dr. Suman Jana
Assistant Professor, Dept. of EE

Dr. Suman kr. Dey
Associate prof. & Head of the Department
Electrical and Electronics Engineering



A STUDY ON- HOME AUTOMATION SYSTEM

BY

Ayon Roy Choudhury

Registration No-(26302821048 of 2021-2022)

Dept. of Electrical & Electronic Engineering

Madhushri Karmakar

Registration No-(26302821050 of 2021-2022)

Dept. of Electrical & Electronic Engineering

Shubhajit Roy

Registration No-(26302821063 of 2021-2022)

Dept. of Electrical & Electronic Engineering

Sukanta Kansabanick

Registration No-(26302821055 of 2021-2022)

Dept. of Electrical & Electronic Engineering

Koyel Ghosh

Registration No-(26302821028 of 2021-2022)

Dept. of Electrical & Electronic Engineering

Under the Guidance of:

Assistant Prof. PRODIP MOZUMDAR

Electrical And Electronics Engineering



REGENT EDUCATION AND RESEARCH FOUNDATION

Bara kanthalia, Barrackpore. P.O-SewliTelini para, Kolkata, West Bengal

Affiliated To BF-142, Salt Lake, Sector-I, Kolkata - 700 064

ACKNOWLEDGEMENT

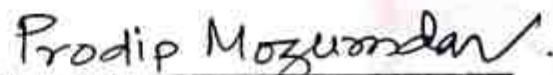
We should like to take this opportunity to extend our guide to the following revered persons without whose immense support, completion of this project would not have been possible.

We are sincerely grateful to our **advisor & mentor** Assistant prof. **Prodip Mazumdar** of the electrical & electronic engineering department, **REGENT EDUCATION AND RESEARCH FOUNDATION**, for this constant support & generating interest for this project,

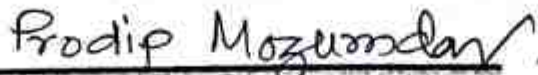
Last but not the list, we would like to extend our warm regards to our families & peers who have kept supporting us & always had faith in our work.



Signature of the H.O.D
(Electrical & Electronic Engineering)



Signature of Examiner



Signature of Project Guide

CERTIFICATE OF APPROVAL

We are hereby certify that Project prepare by "Ayon Roy Choudhury, Madhushri Karmakar, Koyel Ghosh, Sukanta Kansabanick, Shubhajit Roy" entitled **HOME AUTOMATION SYSTEM** be accepted in Partial fulfillment of the requirements for awarding the degree of "Bachelor Of Technology In Electrical & Electronic Engineering" session (2021-2024) in the department of Electrical & Electronic engineering at Regent Education & Research foundation, Barrackpore. The foregoing project is hereby approved as a credible study of an engineering subject carried out & present in a manner satisfactory to warrant its acceptance as a prerequisite to the degree for which it has submitted.

It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed & conclusion draw therein but approve the project only for the purpose for which it has been submitted.

Prodip Mozumder 06.06.24

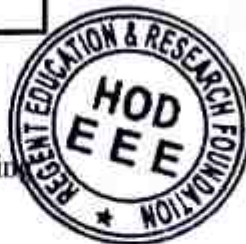
MR. PRODIP MOJUMDER

Assistant Professor
Department of Electrical & Electronic Engineering
Regent Education & Research Engineering
Barrackpore, N 24 pgs.

Suman Kumar De 06/06/24

MR. SUMAN KUMAR DEY

Head of the department
Department of Electrical & Electronic Engineering
Regent Education & Research Engineering
Barrackpore, N 24 pgs.



Abstract

An intelligent house automation system is a technology driven solution that allows homeowners to control and automate various home devices and systems using a central hub using smartphone, voice command and IoT. The system typically includes equipment such as smart thermostats, smart lighting, smart locks, security systems, and entertainment systems. With the increasing prevalence of IoT, smart homes have become increasingly popular, and automation systems have emerged as a key technology for controlling and managing various home appliances and systems. This note explores an exhaustive detail of the present state of automation systems for smart homes, and aims to identify areas for future research and development along with comfort, energy efficiency, privacy, and accessibility that a smart home automation system offers users can enhance their life as a whole. The current paper also highlights the components of smart home automation systems but also puts a spotlight on application and challenges associated with it.

Keywords: *Arduino, Home automation, Bluetooth, Smart phone, Security*

2 CYLINDER FREE-ENERGY GENERATOR

Project report submitted in partial fulfilment of the
requirements for the degree of

**BACHELOR OF TECHNOLOGY
IN
ELECTRICAL AND ELECTRONICS ENGINEERING**

In
2024

By

Ms. Bhagyasree Singha
Roll No-26302821044
Reg.NO-212630102820034

Mr. Hemavo Momdal
Roll No-26302820004
Reg No-202630102810001

Ms. Manisha Gupta
Roll No-26302821026
Reg No-212630102820051

Mr. Mrinmoy Mondol
Roll No-26302821009
Reg No-212630102820004

Mr. Subha Koley
Roll No-26302820001
Reg No-202630102810004

Mr. Vikash Kumar
Roll No-26302821052
Reg No-212630102820057

Under the Supervision of
Mr. PRABAL KUMAR BASAK
Assistant professor
Electrical Engineering Department



REGENT EDUCATION & RESEARCH FOUNDATION
AFFILITED TO MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY,
WEST BENGAL. JUNE, 2024
Barakathalia (Barrack pore), p.o Sewli Telinitara, kol-700121

RECOMMENDATION

I hereby recommended that the project title “2 CYLINDER FREE -ENERGY GENERATOR” Submitted by Ms. Bhagyasree Singha, Ms. Manisha Gupta, Mr. Subha Koley, Mr. Hemavo Mondal, Mr. Mrinmoy Mondol, Mr. Vikash Kumar is accepted a partial fulfilment of the requirement for the four-year degree of “BACHELOR OF TECHNOLOGY” in “ELECTRICAL & ELECTRONICS ENGINEERING” from the college “REGENT EDUCATION & RESEARCH FOUNDATION” under “MAKAUT”.



Mr. Prabal Kr. Basak
Project supervisor
Assistant Professor
Electrical Engineering Department
Regent Education and Research Foundation

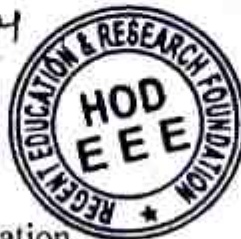
CERTIFICATE OF APPROVAL

We are hereby certify that project prepare by "Ms. Bhagyasree Singha, MS. Manisha Gupta, Mr. Subha Koley, Mr. Hemavo Mondal, Mr. Mrinmoy Mondol, Mr. Vikash Kumar in btech entitled 2 cylinder free energy generator be accepted in partial fulfilment of the requirements for the awarding of degree of "Bachelor of Technology in electrical and electronics engineering at Regent Education and Research foundation Barrackpore .The foregoing project is hereby approved as a credible study of an engineering subject carried out & present in a manner satisfactory to warrant its acceptance as a prerequisite to the degree for which it has submitted.

It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed & conclusion draw therein but approve the project only for the purpose for which it has been submitted.

Handwritten signature
06/06/2024

Head of the Department
DR. Suman Kumar Dey
Electrical & Electronics Department
Regent Education & Research Foundation



DECLARATION BY CANDIDATE

I hereby declare that the project work on 2 cylinder free energy generator "Bhagyasree Singha, Manisha Gupta, Subha Koley, Hemavo Mondal, Mrinmoy Mondol, Vikash Kumar submitted to Regent Education & Research Foundation Group of Institutions for the requirement of the degree of "Bachelor of Technology", under Maulana Abul Kalam Azad University of Technology, during the academic year of 2023-2024. The project work is totally genuine & we have not copied it from any other sources

B. Singha.....

Ms. Bhagyasree Singha
Roll No-26302821044
Reg.No-212630102820034
B.Tech 4th year
RERF
Kol-700121

Hemavo Mondal.....

Mr. Hemavo Mondal
Roll No-26302820004
Reg No-202630102810001
B.Tech 4th year
RERF
Kol-700121

Manisha Gupta

Ms. Manisha Gupta
Roll No-26302821026
Reg No-212630102820051
B.Tech 4th year
RERF
Kol-700121

Mrinmoy Mondal.....

Mr. Mrinmoy Mondol
Roll No-26302821009
Reg No-212630102820004
B.Tech 4th year
RERF
Kol-700121

Subha Koley.....

Mr. Subha Koley
Roll No-26302820001
Reg No-202630102810004
B.Tech 4th year
RERF
Kol-700121

Vikash Kumar.....

Mr. Vikash Kumar
Roll No-26302821052
Reg No-212630102820057
B.Tech 4th year
RERF
Kol-700121

ACKNOWLEDGEMENT

We would like to express my sincere gratitude to all the people without whom we cannot be able to make this project. First we would like to thanks our parents as I am really appreciated by them. Then it is a genuine pleasure to express our deep sense of thanks and gratitude to our mentor and guide, Mr. Prabal Kr. Basak, Assistant professor (EEE).

For his valuable time and help throughout the project work his dedication and keen interest and above all his overwhelming attitude to help his students have been solely and mainly responsible for completing my work. His timely scholarly advice and scientific approach have helped me to a great extent to complete this work.

We are also grateful to other faculty members for their moral support during this period of work. We also extend our sincere thanks to those who have directly and indirectly helped us in completing this job.

A PROJECT REPORT
ON

TRAIN ACCIDENT PREVENTION

Submitted in Partial fulfilment of the requirements for the award of the degree
OF

BACHELOR OF TECHNOLOGY

IN

ELECTRICAL & ELECTRONICS ENGINEERING

UNDER

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY

(WEST BENGAL)

SUBMITTED BY

MD IMRAN ALI

26302821049

SAUMYADEEP MAJUMDER

26302821035

PRIYANKA DEY

26302821006

SUBHANKAR SADHUKHAN

26302821008

ARPAN CHATTERJEE

26302821014

Under the guidance of

BIDYUT KUMAR GHOSH
(Assistant Professor)



Department of Electrical & Electronics Engineering

REGENT EDUCATION AND RESEARCH FOUNDTION
BARRACKPORE, NORTH 24 PARGANAS

JUNE, 2024

ACKNOWLEDGEMENT

I take this opportunity to place on record my deep sense of gratitude to Mr. **ADYUT KUMAR GHOSH** Assistant Professor, for his valuable guidance, encouragement and helpful criticism throughout. Sincere thanks to Dr. **Suman Kumar Dey** head of Electrical & Electronics Engineering Department, Regent Education & Research Foundation, for his constant encouragement during our work and for providing necessary facilities to carry out the project. We are also thankful to the Principal of Regent Education & Research Foundation for giving us the opportunity to be a part of his esteemed institution and facilitate us for carrying out the project work. Lastly, we would like to thank all the staff member of Electrical & Electronics Engineering Department for helping us to carried out the project and encouragement throughout the process from beginning.



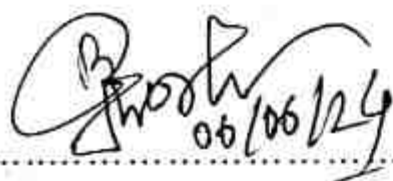
REGENT EDUCATION & RESEARCH FOUNDATION

Group of Institutions

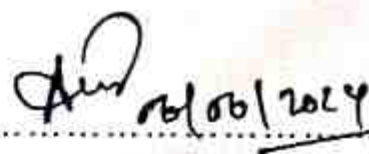
CERTIFICATE OF APPROVAL

hereby certify that the project report prepared by MD IMRAN ALI, SAUMYADEEP JUMDER, PRIYANKA DEY, SUBHANKAR SADHUKHAN, ARPAN CHATTERJEE titled "**TRAIN ACCIDENT PREVENTION**" be accepted in partial fulfilment of the requirements for awarding the degree of "**Bachelor of Technology in Electrical and Electronics Engineering**" session (2021-2024) in the department of Electrical & Electronics Engineering, (RERFGI), Barrackpore. The forgoing PROJECT is hereby approved as a suitable study of the Engineering Subject carried out and presented in a manner of satisfactory to grant its acceptance as a pre-requisite to the DEGREE for which it has been submitted.

It is notified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed and conclusion drawn there in but approve the PROJECT only for the purpose for which it has been submitted.


06/06/24

Mr. BIDYUT KUMAR GHOSH
Assistant Professor
Department of Electrical Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas


06/06/2024

Dr. Suman Kumar Dey
Head of the Department
Department of Electrical & Electronics Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas



Campus: Regent Education & Research Foundation Group of Institutions

E-mail: rerfkolkata@gmail.com, Website: www.refr.in

Campus Address:

Lara Kanthalia, Barrackpore
P.O: Sewli Tellinipara, P.S.: Titagarh
Tel.: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Officer Address

11/3, Biresh Guha Street
7th Floor, Kolkata - 700017
Tel: 033-3221-3013

ABSTRACT

Avoiding Railroad Accidents A project using an Arduino Uno-based safety system aims to avoid accidents on train tracks. We are aware that the country's most popular mode of transit is the train. Accidents are happening more frequently at the railway crossings. To prevent accidents on the rails, at crossings, etc., the government has adopted numerous measures. People are trespassing on the train rails these days.

So, the project here is the detection of trains approaching the track. Arduino, an ultrasonic sensor, and a buzzer are used in this. When a train that is approaching the track is detected by this ultrasonic sensor-based technology. The ultrasonic sensor is turned on by the Arduino. The proposed technology locates the train using ultrasonic sensors. A sensor placed between 500 meters or at our discretion can detect the arrival of the train.

A PROJECT REPORT ON
WIRELESS POWER TRANSMISSION

Submitted in Partial fulfilment of the requirements
for the award of the degree
BACHELOR OF TECHNOLOGY
IN
ELECTRICAL & ELECTRONICS ENGINEERING

SUBMITTED BY

ANKIT PANDIT	: 26302821019
PROSANJIT MALICK	: 26302821010
SABUJ SAMANTA	: 26302821046
RUPAM HALDAR	: 26302821007

Under the guidance of

Prof. Ashmita Guha Chowdhury



Department of
Electrical & Electronics Engineering

REGENT EDUCATION AND RESEARCH FOUNDTION
BARRACKPORE, NORTH 24 PARGANAS

AFFILITED TO

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL MAY, 2024

ABSTRACT

The main objective of this project is to develop a device for wireless power transfer. The concept of wireless power transfer was realized by Nikola Tesla. Wireless power transfer can make a remarkable change in the field of the electrical engineering which eliminates the conventional copper cables and current carrying wires. Based on the concept, the device is developed to transfer power within a small range. This project can be used for charging batteries those are physically not possible to be connected electrically such as pacemakers implanted in the body that runs on a battery. This project is designed to charge rechargeable battery wirelessly for the purpose. Since charging of the battery is not possible to be demonstrated, we are providing a DC fan that runs through wireless power.

This project is built upon using an electronic circuit which converts AC 220-230 volt 50Hz to 12 volt, High frequency. The output is fed to a tuned coil forming as primary of an air core transformer. The secondary coil develops a voltage of HF 12 volt. Thus the transfer of power is done by primary (transmitter) to the secondary that is separate with a considerable distance (say 3 cm). Therefore, the transfer could be seen as the primary transmits and the secondary receives the power to run load.



REGENT EDUCATION & RESEARCH FOUNDATION

Group of Institutions

CERTIFICATE OF APPROVAL

I hereby certify that the project report prepared by PROSANJIT MALLICK "Wireless Power Transfer" be accepted in partial fulfilment of the requirements for awarding the degree of Bachelor of Technology in Electrical and Electronics Engineering" session (2021-2024) in the Department of Electrical & Electronics Engineering, (REFE), Barrackpore. The going PROJECT is hereby approved as a creditable study of an Engineering Subject and presented in a manner of satisfactory to warrant its acceptance as a prerequisite to the DEGREE for which it has been submitted.

It is further clarified to be understood that by this approval, the undersigned do not necessarily endorse or approve any statement made, opinion expressed and conclusion drawn there in but approve the PROJECT only for the purpose for which it has been submitted.

AGC
06/06/24

(Project Guide)

Asst. Prof. Ashmita Guha Chowdhury
Department of Electrical & Electronics
Engineering
Regent Education & Research
Foundation
Barrackpore, North 24 Parganas

Suman Kumar D
06/06/24

(Head of the Department)

Prof. Suman Kumar D
Department of Electrical & Electronics
Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas



Campus: Regent Education & Research Foundation Group of Institutions

E-mail: rerfkolkata@gmail.com, Website: www.refr.in

Campus Address:

ra Kanthalia, Barrackpore
D: Sewli Telinipara, P.S.: Titagarh
L: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Officer Address

11/3, Bireswari Guha Street
7th Floor, Kolkata – 700017
Tel: 033-3221-3013



REGENT EDUCATION & RESEARCH FOUNDATION Group of Institutions

RECOMMENDATION

ereby recommend that the project entitle "wireless power supply" being submitted by
KIT KUMAR PANDIT, PROSANJIT MALLICK, SABUJ SAMANTA, RUPAM HALDER to MAKAUT
the award of the degree of Bachelor of Technology in Electrical & Electronics Engineering
the record of his Bonafede research work carried out under my supervision and guidance.
e presented thesis has not been submitted elsewhere for the award of any other degree
diploma. This work in my opinion, has reached the stander of fulfilling the requirement for
e award of degree of bachelor of Electrical & Electronics Engineering. It is notified to be
derstood that by this approval, the undersigned do not necessarily endorse or approve any
itement made, opinion expressed and conclusion drawn therein but approve the PROJECT
ly for the purpose for which it has been submitted.

 06/06/24

(PROJECT GUIDE)

Asst. Prof. Ashmita Guha Chowdhury
Department of Electrical & Electronics Engineering
Regent Education & Research Foundation
Barrackpore, North 24 Parganas

Campus: Regent Education & Research Foundation Group of Institutions
E-mail: rerfkolkata@gmail.com, Website: www.refr.in

Campus Address:

ara Kanthalla, Barrackpore
O: Sewli Telinipara, P.S.: Titagarh
el.: 033-3008-5442/432/431, Fax: 033-3008-5442

Regd. Officer Address

11/3, Biresw Guha Street
7th Floor, Kolkata – 700017
Tel: 033-3221-3013

ACKNOWLEDGEMENT

I take this opportunity to place on record my deep sense of gratitude to Prof. Ashmita Guha Chowdhury, for his valuable guidance, encouragement and helpful criticism throughout. I am also thanks to Prof. Suman Kumar Dey head of Electrical & Electronics Engineering Department, Regent Education & Research Foundation, for his constant encouragement during our work and for providing necessary facilities to carry out the project, we are also grateful to Prof. for his endless guidance and support. We are also thankful to the Principal Regent Education & Research Foundation for giving us the opportunity to be a part of his esteemed institution and facilitate us for carrying out the project work. Lastly, we would like to thank all the staff member of Electrical & Electronics Engineering Department for helping us to carry out thesis and encouragement throughout the process from beginning.



SKYSOLAR DYNAMICS

A Project Submitted Partial Fulfillment
of the Requirements for the award of the
Degree of
Bachelor of Technology
in
Electrical and Electronics Engineering
of
Regent Education and Research Foundation Group of
Institutions
by

TANMOY BEJ (26302821040)
PRITAM BAG (26302821038)
SAIKAT DAS (26302821025)
PRITHIVI GHOSH (26302821020)
SOUVIK KHANRA (26302821027)

under the guidance of

Dr. Suman Jana (Assistant Prof., Dept. of EE)
&
Mr. Arkadeep Mondal (Assistant Prof., Dept. of EEE)

SKYSOLAR DYNAMICS

Project report submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in Electrical & Electronics Engineering from Regent Education and Research Foundation Group of Institutions affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal (formerly known as West Bengal University of Technology).

BY

TANMOY BEJ (26302821040)

PRITAM BAG (26302821038)

SAIKAT DAS (26302821025)

PRITHVI GHOSH (26302821020)

SOUVIK KHANRA (26302821027)

under the guidance of

Dr. Suman Jana (Assistant Prof., Dept. of EE)

&

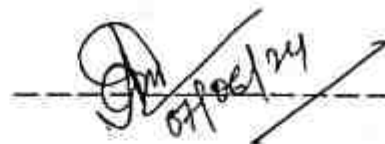
Mr. Arkadeep Mondal (Assistant Prof., Dept. of EEE)

CERTIFICATE OF APPROVAL

This is to certify that the project entitled "SKYSOLAR DYNAMICS" submitted by "Tanmoy Bej, Pritam Bag, Saikat Das, Prithvi Ghosh, Souvik Khanra" respectively for partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Electrical and Electronics Engineering from Regent Education and Research Foundation Group of Institutions affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal (formerly known as West Bengal University of Technology).


07.06.24

Dr. Suman Jana
Assistant Professor, Dept. of EE


07/06/24

Mr. Arkadeep Mondal
Assistant Professor, Dept. of EEE



Dr. Suman Kumar Dey
Associate Prof. & Head of the Department
Electrical and Electronics Engineering

ACKNOWLEDGEMENT

I take this opportunity to place on record my deep sense of gratitude to Dr. Suman Jana and Mr. Arkadeep Mondal, for their valuable guidance, Encouragement and helpful criticism during the course of this project Work. My thanks are also to Dr. Suman Kumar Dey, Head of Electrical and Electronics Engineering Department for his constant encouragement during my Work and for providing necessary facilities to carry out the project. I Also grateful to Prof. Samik Chakraborty, Principal, RERFGI for giving me this opportunity to be a part of this esteemed institution And facilitate me for carrying out the project work. Last, but not the Least, I thank all the staff members of Electrical and Electronics Engineering Department, RERFGI for helping me to carry out the thesis. Finally I am grateful to my all family member for giving their continuous support and encouragement throughout the process from beginning.