

**New Horizon College of Engineering**  
**Quality Assurance & Skill Development Center**

Academic Year 2021-22

**Field Project undertaken by Students- VIII semester- A section**

<u>S.No</u>	<u>Depart ment</u>	<u>Batch No</u>	<u>USN</u>	<u>Student Name</u>	<u>Guide(s)</u>	<u>Type Internal/ External</u>	<u>Title of the Project</u>	<u>Organiza tion</u>	<u>Project Duration</u>	<u>Exter nal Guide Detail</u>
1	EEE	A1	1NH18EE039	Nischal Dinesh	Ms.Kavitha Channa Reddy Dr. Vinoth Kumar.K	Internal	IMPLEMENTATION OF SOLAR POWERED ELECTRIC HYBRID VEHICLE USING ARTIFICIAL INTELLIGENCE	NA	6 Months	NA
			1NH18EE042	Prajwal						
			1NH18EE053	Sarthak Das						
			1NH18EE005	Ashu Anand						
2	EEE	A2	1NH18EE011	Darshini Machamma M S	Dr. Vinoth Kumar.K	Internal	FABRICATION OF ELECTRIC BICYCLE USING SPLIT CHARGING TECHNOLOGY	NA	6 Months	NA
			1NH18EE004	APPAJI						
			1NH18EE032	MOHAMMED TAUQEER ALI						
3	EEE	A3	1NH18EE031	Mohammed Omer Ali	Mr.Vinod Kumar S Dr. Mahesh.M	Internal	SELF STABILIZING PLATFORM IN SCOPE OF MERCHANT NAVY APPLICATIONS	NA	6 Months	NA
			1NH18EE057	Siddhartha Sunil Singh						
			1NH18EE066	Tahoorra Imtiyaz						
			1NH18EE036	Nayrah M A						
4	EEE	A4	1NH18EE044	Rachana R	Dr. A. Singaravelan	Internal	IMPLEMENTATION OF COLLABORATIVE ROBOT FOR SMALL AND MICRO LEVEL BUSINESSES IN RURAL KARNATAKA	NA	6 Months	NA
			1NH18EE063	Vishwa deepak						
5	EEE	A5	1NH18EE055	Shiva R V	Dr. Sujitha S	Internal	SPEED CONTROL OF INDUCTION MOTOR USING FUZZY LOGIC INFERENCE SYSTEM	NA	6 Months	NA
			1NH18EE049	Sagar Kulkarni						
			1NH18EE040	Lavin Ponnappa M M						
6	EEE	A6	1NH18EE001	Abhishek Kumar	Dr. Sujitha S	Internal	IOT BASED SOLAR AND WEATHER MONITORING SYSTEM	NA	6 Months	NA
			1NH18EE016	G. Siva kumar						
			1NH18EE002	Allen harish						

			1NH18EE038	Niranjn kumar						
7	EEE	A7	1NH19EE405	V SHARON	Dr.Mohan Das.R	Internal	SMART TRAFFIC CONTROL SYSTEM USING AI	NA	6 Months	NA
			1NH19EE402	MANJUNATH GANPATHI NAIK						
			1NH19EE400	KIRAN K V						
			1NH19EE406	HARISH S N						
8	EEE	A8	1NH18EE017	Greeshma Chennareddy	Dr.Gunapriya B	Internal	MODELLING & DESIGN OF SOLAR REFRIGERATOR FOR VACCINE TRANSPORT IN REMOTE AREAS	NA	6 Months	NA
			1NH18EE010	Chitra S						
			1NH18EE013	Kavipriya E						
			1NH18EE050	Sahana B						
9	EEE	A9	1NH18EE006	Bharath B	Ms.Roopa.C Dr.Sujitha S	Internal	POWER GENERATION ON HIGHWAY USING SOLAR VERTICAL AXIS WIND TURBINE WITH AIR POLLUTION INDICATOR.	NA	6 Months	NA
			1NH18EE008	Bhoomika J Kumar						
			1NH18EE023	Nandeesh K V						
			1NH18EE012	Divyashree N						
10	EEE	A10	1NH18EE026	KIRAN U	Mr.Litesh J Dr. N Prabhakaran	Internal	PERFORMANCE EVALUATION OF INDUCTION MOTOR USED IN ELECTRICAL VEHICLES	NA	6 Months	NA
			1NH18EE035	NAVEEN KUMAR K R						
			1NH18EE046	ROHAN N						
			1NH18EE056	SHREYSH BABU						
11	EEE	A11	1NH18EE062	Vinayaka S Dhuleholi	Dr. Joshua Daniel Raj	Internal	IOT BASED HYDROPONICS PLANTATION AND MONITORING SYSTEM USING PLC or MICROCONTROLLER	NA	6 Months	NA
			1NH18EE028	Manoj Kumar. M. B						
			1NH18EE048	RUTIK LAXMAN BELEKAR						
			1NH18EE054	Shekar V						
12	EEE	A12	1NH18EE025	Karthik N	Dr. N Prabhakaran	Internal	IOT BASED SMART AMBULANCE SYSTEM	NA	6 Months	NA
			1NH18EE009	Lakshmipathi C						
			1NH18EE003	Anirudh						
			1NH18EE052	Sanjay G						
13	EEE	A13	1NH19EE403	SUSHMA. M	Ms. Anitha A Dr. Gunapriya B	Internal	SWITCHED CAPACITOR VOLTAGE BOOST CONVERTER FOR	NA	6 Months	NA
			1NH18EE015	GAGANA						

			1NH19EE404	SUSHMITA. T. S			ELECTRIC VEHICLES			
14	EEE	A14	1NH18EE065	Muhammad Numan Bhat	Mr.Sunil S K	Internal	HYBRID ELECTRIC VEHICLE WIRELESS CHARGING STATION	NA	6 Months	NA
			1NH18EE041	Prabhath Raj M						
			1NH18EE030	Mohammad Jilani Safi						
15	EEE	A15	1NH18EE022	Jibran Zaidi	Dr. Gunapriya B	Internal	ARDUINO BASED HAND GESTURE CONTROLLED ROBOT USING IOT	NA	6 Months	NA
			1NH18EE061	Vikram						
			1NH18EE027	Nirupa vardhan						
			1NH18EE020	Jaffer						
			1NH16EE723	JAYADEVAN S						
			1NH17EE040	PRANNAY K R						
			1NH17EE758	YASHWANTH B R						
1NH18EE417	RAHUL MISHRA									

**New Horizon College of Engineering**  
**Quality Assurance & Skill Development Center**

Academic Year 2021-22

Field Project undertaken by Students

VIII semester- B section

S.NO	Department	Batch No	Name	USN	Guide name	Internal /External	Project Title	Organization	Project Duration	External Guide Detail
1	EEE	B1	Pranav R Naik	1NH18EE735	Mr. Muni Prakash. T	Internal	Optimization Of Battery Performance In Electric Vehicles	NHCE	6 Months	NA
			Rahul Vijay Lingadhal	1NH18EE738						
			R PuneethVenkatSaiVarma	1NH18EE736	Dr.Vinoth Kumar K					
			R Supraja	1NH18EE737						
2	EEE	B2	Niranjan K R	1NH18EE732	Dr.Sujitha S	Internal	Integrated AI and IoT in Real Time Locating System for Energy Efficient Home Automation	NHCE	6 Months	NA
			Shashidhar P H	1NH18EE746						
			Shiva Prasad L P	1NH18EE747						
			Pavan R	1NH18EE068						
3	EEE	B3	Vishnupriya G G	1NH18EE757	Prof.Deepa V B	External	Modification of Electronic warfare suite on jaguar fighter aircraft	HAL	6 Months	Ms.Vimaleshwar i.G (CM-D-MCSRDC, HAL)
			Sankeethini D	1NH18EE742						
			Srinjana Choudhury	1NH18EE750	Dr. N. Prabhakaran					
			Saranya S	1NH18EE743						
4	EEE	B4	Joanna Alicia D	1NH18EE718	Dr. N. Prabhakaran	Internal	Smart power theft detection System using IOT	NHCE	6 Months	NA
			Deepthi D	1NH18EE715						
			Shawin Krishna	1NH18EE740						
			BellamSreekanthreddy	1NH18EE706						
5	EEE	B5	K.Abhishek	1NH18EE719	Dr. Joshua Daniel Raj	Internal	Electronic warfare system based	NHCE	6 Months	NA
			K.Ajay	1NH18EE720						

			SandeshVantagodi	1NH19EE408			on electromagnet ic pulse			
			Deepak Baalaji I	1NH17EE712						
6	EEE	B6	MdSagar Khan	1NH18EE727	Ms.Karthika M	Internal	Solar Based Energy Effecient Hybrid Slbldc Motor For Agriculture	NHCE	6 Months	NA
			L Ashwini B	1NH18EE725	Dr. Mohan Das. R					
			K UtkarshAlok	1NH18EE724						
			VivekRanjan	1NH18EE069						
7	EEE	B7	Niranjan C	1NH18EE731	Dr. A. Singaravelan	Internal	Implementati on and Design of COBOTS in Floriculture	NHCE	6 Months	NA
			RamesharajaUrsu K R	1NH19EE407						
			AbhimanyuIyer	1NH18EE700						
			Dhanush L	1NH18EE716						
8	EEE	B8	VishwanathPatil	1NH18EE758	Mr.Satish Kumar D	Internal	Accident Identification and Alerting System by using Raspberry Pi	NHCE	6 Months	NA
			P.Md.Muthahir Khan	1NH18EE733	Dr. Mohan Das. R					
			Bharateshshiradoni	1NH18EE707						
			Venkan gouda	1NH18EE754						
9	EEE	B9	Sayanth PV	1NH18EE067	Dr.Sujitha S	Internal	Uninterrupted Autonomous Power Distribution System For Residential Loads	NHCE	6 Months	NA
			Vishal Suresh	1NH18EE756						
			AdithyaHegde	1NH18EE701						
			Nahush S	1NH18EE739						
10	EEE	B10	T Harshavardhanreddy	1NH18EE751	Mr.Ramakrishnan . S	Internal	Automatic Speed control of an Electric Vehicle Using Raspberry-pi	NHCE	6 Months	NA
			Shivangi Pandey	1NH18EE749	Dr. Joshua Daniel Raj					
			Chandan N	1NH18EE711						
			Shivantiwary	1NH18EE748						
11	EEE	B11	D. Siva Prasad	1NH18EE714	Mr.Inbasakaran. K	Internal	IoT based Water Level and Water Quality	NHCE	6 Months	NA
			B. SaiBharathreddy	1NH18EE705	Dr. Joshua Daniel					
			Chandrashekar.C	1NH18EE712						

			Shaik.MahammadAdil	1NH18EE745	Raj		Monitoring System			
12	EEE	B12	C Bhavana Singh	1NH18EE710	Dr.Vinoth Kumar K	Internal	Electric bicycle fabrication using split charging technology	NHCE	6 Months	NA
			Bhavana YC	1NH18EE708						
			Bindhu V	1NH18EE709						
13	EEE	B13	Sridharshini	1NH18EE741	Dr. Mohan Das. R	Internal	Design and implementation of electric bike	NHCE	6 Months	NA
			AteequrRehman	1NH18EE704						
			SatyavarapuVenkataPavan Kumar	1NH18EE744						
			Varun sham Kumar	1NH18EE753						
14	EEE	B14	Kiran.P.Gowda	1NH18EE723	Ms.Rashmi N Dr. A. Singaravelan	Internal	LoRa Based smart cities and home automation using iot	NHCE	6 Months	NA
			K.Prasanna	1NH18EE722						
			Prajwal A Raikar	1NH18EE734						
			Ananda.M.A	1NH18EE702						
15	EEE	B15	Mohammed Usman Khan	1NH18EE728	Dr. M. Mahesh	Internal	Design of smart vehicle parking system using wireless sensor network for off street parking	NHCE	6 Months	NA
			MdFarhanulla Sharif	1NH18EE729						
			Mohammed Sufiyan	1NH18EE730						
			Vishal Gupta	1NH18EE755						



# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade. Accredited by NBA

Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## IMPLEMENTATION OF SOLAR POWERED ELECTRIC HYBRID VEHICLE USING ARTIFICIAL INTELLIGENCE

Submitted in the partial fulfilment of the Final Year Project - Phase II


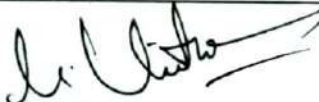

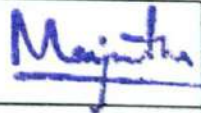
Submitted by

NISCHAL DINESH 1NH18EE039

SARTHAK DAS 1NH18EE053

PRAJWAL 1NH18EE042

ASHU ANAND 1NH18EE005

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
PROF. KAVITHA CHENNA REDDY	Dr. VINOTH KUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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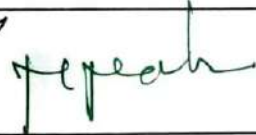
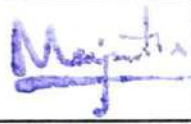
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

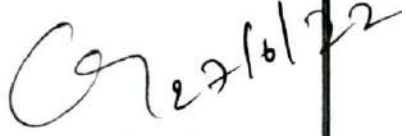
Certified that the Project work entitled **"IMPLEMENTATION OF SOLAR POWERED ELECTRIC HYBRID VEHICLE USING ARTIFICIAL INTELLIGENCE"** carried out by **Nischal Dinesh(1NH18EE039), Sarthak Das(1NH18EE053), Prajwal(1NH18EE042), Ashu Anand(1NH18EE005)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of the Project Co-Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
PROF. KAVITHA CHENNA REDDY	Dr. VINOTH KUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Mrs. Kavitha Chenna Reddy**, Senior Assistant Professor, **Dr. Vinoth Kumar K**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



# NEW HORIZON COLLEGE OF ENGINEERING


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Accredited by NAAC with 'A' Grade, Accredited by NBA

## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	NISCHAL DINESH SARTHAK DAS PRAJWAL ASHU ANAND
2	USN	1NH18EE039 1NH18EE053 1NH18EE042 1NH18EE005
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	IMPLEMENTATION OF SOLAR POWERED ELECTRIC HYBRID VEHICLE USING ARTIFICIAL INTELLIGENCE
7	Similar Content(%)identified	18%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	01.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Dr.B.GUNAPRIYA  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engg.  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We Nischal Dinesh, Sarthak Das, Prajwal, Ashu Anand, students of New Horizon College of Engineering hereby declare that this project work entitled **“IMPLEMENTATION OF SOLAR POWERED ELECTRIC HYBRID VEHICLE USING ARTIFICIAL INTELLIGENCE”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>NISCHAL DINESH</b>	<b>1NH18EE039</b>	
<b>SARTHAK DAS</b>	<b>1NH18EE053</b>	
<b>PRAJWAL</b>	<b>1NH18EE042</b>	
<b>ASHU ANAND</b>	<b>1NH18EE005</b>	



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Outer Ring Road, Bellandur, Bengaluru – 560103

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

**FABRICATION OF ELECTRIC BICYCLE USING SPLIT CHARGING  
TECHNOLOGY**

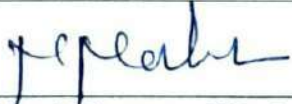

Submitted in the partial fulfilment of the Final Year Project - Phase II

**Submitted by**

**DARSHINI MACHAMMA M S - 1NH18EE011**

**MOHAMMED TAUQEER ALI - 1NH18EE032**

**APPAJI MAROLA - 1NH18EE004**

		
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Dr. VINOTH KUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama", Belgaum: 590018**



2021-22



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

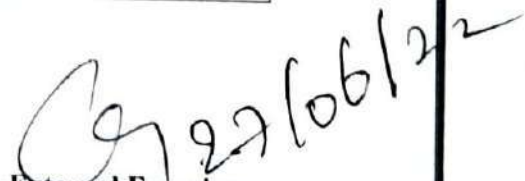
Certified that the Project work entitled **"FABRICATION OF ELECTRIC BICYCLE USING SPLIT CHARGING TECHNOLOGY"** carried out by **Darshini Machamma M S(1NH18EE011), Tauqeer Ali(1NH18EE032), Appaji Marola(1NH18EE004)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. VINOTH KUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. VINOTH KUMAR K**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	DARSHINI MACHAMMA M S MOHAMMEED TAUQEER ALI APPAJI MAROLA
2	USN	1NH18EE0011 1NH18EE032 1NH18EE004
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	FABRICATION OF ELECTRIC BICYCLE USING SPLIT CHARGING TECHNOLOGY
7	Similar Content(%)identified	9%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	23.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Dr.B.GUNAPRIYA  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

# DECLARATION

We **Darshini Machamma M S, Tauqeer Ali, Appaji Marola**, students of New Horizon College of Engineering hereby declare that this project work entitled "**Fabrication Of Electric Bicycle Using Split Charging Technology**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

**DARSHINI MACHAMMA M S**

| *Darshini* |

**MOHAMMEDTAUQEER ALI**

| *[Signature]* |

**APPAJI MAROLA**

| *Appaji* |





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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE78A Project - Phase II

Report on

## SELF STABILIZING PLATFORM FOR MERCHANT NAVY APPLICATIONS

Submitted in the partial fulfilment of the Final Year Project - Phase I


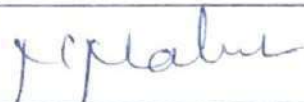
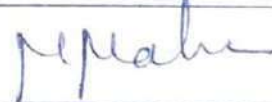

Submitted by

MOHAMMED OMER ALI      1NH18EE031

NAYRAH M A                      1NH18EE036

TAHOORA IMTIYAZ              1NH18EE066

SIDDHARTHA SUNIL SINGH    1NH18EE057

			
Name & Signature of the Project Guide	Name & Signature of the Project C0-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. VINOD KUMAR S	Dr. MAHESH M	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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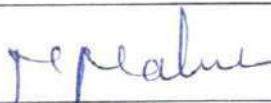


Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **"SELF STABILIZING PLATFORM FOR MERCHANT NAVY APPLICATIONS"** carried out by Mohammed Omer Ali (1NH18EE031), Nayrah M A (1NH18EE036), Tahoora Imtiyaz (1NH18EE066), Siddhartha Sunil Singh (1NH18EE057) bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswaraiah Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. VINOD KUMAR S	Dr. MAHESH M	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



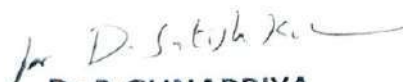
# NEW HORIZON COLLEGE OF ENGINEERING


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Accredited by NAAC with 'A' Grade, Accredited by NBA

## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	MOHAMMED OMER ALI SIDDHARTHA SUNIL SINGH NAYARAH M A TAHOORA IMTIYAZ
2	USN	1NH18EE031 1NH18EE057 1NH18EE036 1NH18EE066
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	SELF STABILIZING PLATFORM FOR MERCHANT NAVY APPLICATIONS
7	Similar Content(%)identified	13%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	21.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Dr.B.GUNAPRIYA  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

## DECLARATION

We Mohammed Omer Ali, Nayrah M A, Tahoora Imtiyaz, Siddhartha Sunil Singh, students of New Horizon College of Engineering hereby declare that this project work entitled **“SELF STABILIZING PLATFORM FOR MERCHANT NAVY APPLICATIONS”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

MOHAMMED OMER ALI	1NH18EE031	M. Omer Ali
NAYRAH M.A	1NH18EE036	Nayrah M.A
TAHOORA IMTIYAZ	1NH18EE066	Tahoora
SIDHARTHA SUNIL	1NH18EE057	



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE78A Project - Phase II

Report on

## IMPLEMENTATION OF COLLABORATIVE ROBOT FOR SMALL AND MICRO LEVEL BUSINESSES IN RURAL KARNATAKA

Submitted in the partial fulfilment of the Final Year Project - Phase II


Submitted by

RACHANA R

1NH18EE044

VISHWA DEEPAK PANDEY

1NH18EE063

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. A Singaravalan	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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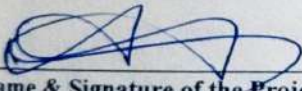
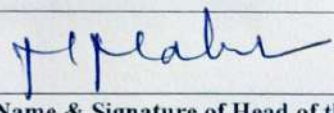
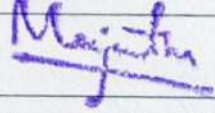
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

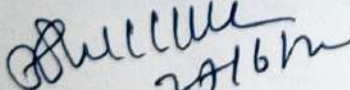
### CERTIFICATE

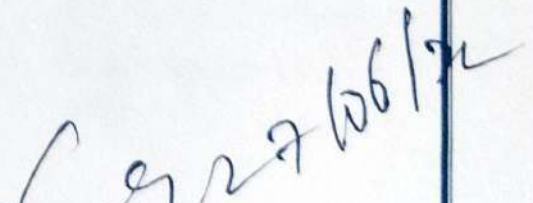
Certified that the Project work entitled **"IMPLEMENTATION OF COLLABORATIVE ROBOT FOR SMALL AND MICRO LEVEL BUSINESSES IN RURAL KARNATAKA"** carried out by **Rachana R (1NH18EE044)**, **Vishwa Deepak Pandey (1NH18EE063)**, Bonafede Student(s) of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. A Singaravelan	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



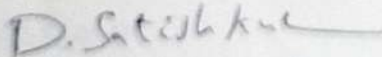
# NEW HORIZON COLLEGE OF ENGINEERING

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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	RACHANA R VISHWA DEEPAK PANDEY
2	USN	1NH18EE044 1NH18EE063
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	IMPLEMENTATION OF COLLABORATIVE ROBOT FOR SMALL AND MICRO LEVEL BUSINESSES IN RURAL KARNATAKA
7	Similar Content(%)identified	2%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	01.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Mr. Satish Kumar. D  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

## DECLARATION

We **Rachana R, Vishwa Deepak Pandey** students at New Horizon College of Engineering hereby declare that this project work entitled **“IMPLEMENTATION OF COLLABORATIVE ROBOT FOR SMALL AND MICRO LEVEL BUSINESSES IN RURAL KARNATAKA”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

**RACHANA R** **1NH18EE044 [ ]**

**VISHWA DEEPAK PANDEY** **1NH18EE063 [ ]**





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Outer Ring Road, Bellandur, Bengaluru – 560103

## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

## **SPEED CONTROL OF INDUCTION MOTOR USING FUZZY LOGIC INFERENCE SYSTEM**

Submitted in the partial fulfilment of the Final Year Project - Phase II

**Submitted by**

**PONNAPPA MM 1NH18EE040**

**SAGAR KULKARNI 1NH18EE049**

**SHIVA R V 1NH18EE055**

**Project Guide**

**Dr. S SUJITHA**

**Head of Department**

**Dr. MAHESH M**

**Principal**

**Dr. MANJUNATHA**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **"SPEED CONTROL OF INDUCTION MOTOR USING FUZZY LOGIC INFERENCE SYSTEM"** carried out by **PONNAPPA M M (1NH18EE040), SAGAR KULKARNI (1NH18EE049) & SHIVA R V (1NH18EE055)** bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswararajah Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

Name & Signature of the  
Project Guide

Dr. Sujitha S

Name & Signature of Head  
of the Department

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India

Dr. MAHESH M

Signature of Principal

Dr. MANJUNATHA

### SEMESTER END EXAMINATION

Internal Examiner

External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor, **Dr. S Sujitha**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 2

Place: Bengaluru



# NEW HORIZON COLLEGE OF ENGINEERING

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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	PONNAPPA M M SAGAR KULKARNI SHIVA R V
2	USN	1NH18EE040 1NH18EE049 1NH18EE055
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	SPEED CONTROL OF INDUCTION MOTOR USING FUZZY LOGIC INFERENCE SYSTEM
7	Similar Content(%)identified	22%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	06.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

Dr.B.GUNAPRIYA  
Plagiarism - Coordinator

Dr. M. Mahesh  
HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India

## DECLARATION

We Ponnappa MM, Sagar Kulkarni, Shiva R V, students of New Horizon College of Engineering hereby declare that this project work entitled "**SPEED CONTROL OF INDUCTION MOTOR USING FUZZY LOGIC INFERENCE SYSTEM**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

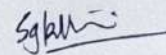
We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

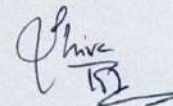
**PONNAPPA MM**      **1NH18EE040**

**SAGAR KULKARNI**      **1NH18EE049**

**SHIVA R V**      **1NH18EE055**









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Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### 20EEE84A Project - Phase II

#### Report on

## IOT BASED SOLAR AND WEATHER MONITORING SYSTEM

Submitted in the partial fulfilment of the Final Year Project - Phase II

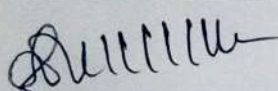
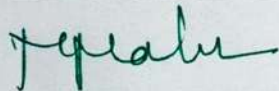
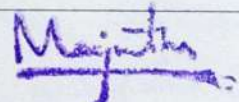
#### Submitted by

ABHISHEK KUMAR 1NH18EE001

ALLEN HARISH M 1NH18EE002

G SIVAKUMAR 1NH18EE016

NIRANJAN KUMAR 1NH18EE038

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. SUJITHA S	Dr. MAHESH M Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post. Bengaluru - 560103, Karnataka, India	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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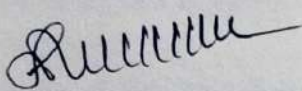
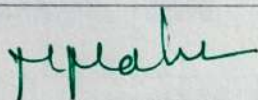
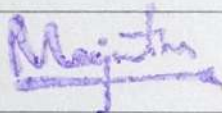
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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

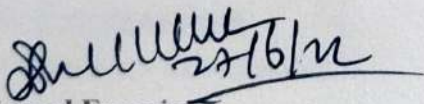
### CERTIFICATE

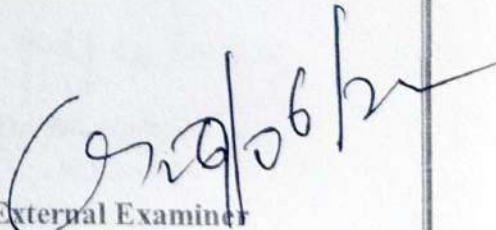
Certified that the Project work entitled **“IOT BASED SOLAR AND WEATHER MONITORING SYSTEM”** carried out by **Abhishek Kumar (1NH18EE001), Allen Harish M (1NH18EE002), G Sivakumar(1NH18EE016),Niranjan Kumar(1NH18EE038)**,bonafide Student(s)of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. SUJITHA S	Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post. Bangalore - 560103, Karnataka, India Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. Sujitha S**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase I would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru





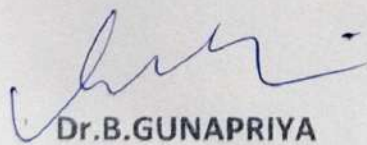
# NEW HORIZON COLLEGE OF ENGINEERING

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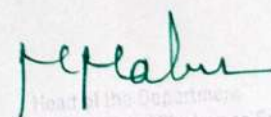
## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	ABHISHEK KUMAR ALLEN HARISH M G SIVAKUMAR NIRANJAN KUMAR
2	USN	1NH18EE001 1NH18EE002 1NH18EE016 1NH18EE038
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	IOT BASED SOLAR AND WEATHER MONITORING SYSTEM
7	Similar Content(%)identified	20%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Dr.B.GUNAPRIYA

Plagiarism - Coordinator

  
Head of the Department  
Department of Electronics and Electrical Engineering  
New Horizon College of Engineering  
Ring Road, K Bellandur Post,  
Bangalore - 560103, Karnataka, India  
HOD - EEE

# DECLARATION

We **Abhishek Kumar, Allen Harish M, G Sivakumar, Niranjana Kumar** students of New Horizon College of Engineering hereby declare that this project work entitled "**IOT BASED SOLAR AND WEATHER MONITORING SYSTEM**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>ABHISHEK KUMAR</b>	<b>1NH18EE001</b>	[ <i>Abhishek</i> ]
<b>ALLEN HARISH M</b>	<b>1NH18EE002</b>	[ <i>Allenharish</i> ]
<b>G SIVAKUMAR</b>	<b>1NH18EE016</b>	[ <i>G. Sivakumar</i> ]
<b>NIRANJANA KUMAR</b>	<b>1NH18EE038</b>	[ <i>Niranjana</i> ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## SMART TRAFFIC CONTROL SYSTEM BY USING ARTIFICIAL INTELLIGENCE

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

KIRAN K V

1NH19EE400

MANJUNATH GANAPATI NAIK


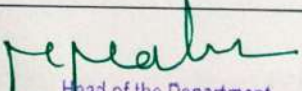
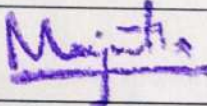
1NH19EE402

V SHARON

1NH19EE405

HARISH S N

1NH19EE406

	 Head of the Department	
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. R. MOHAN DAS	Dr. M. MAHESH	Dr. MANJUNATHA

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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Accredited by NAAC with 'A' Grade, Accredited by NBA

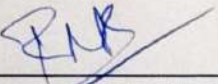
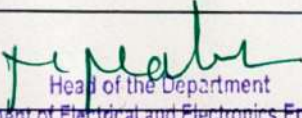
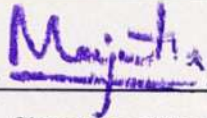
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

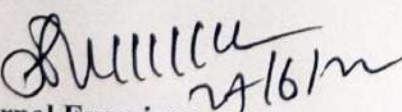
### CERTIFICATE

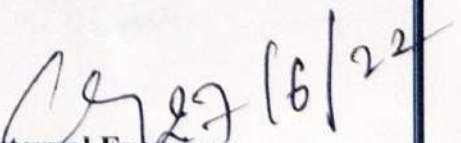
Certified that the Project work entitled **“SMART TRAFFIC CONTROL SYSTEM BY USING ARTIFICIAL INTELLIGENCE”** carried out by **KIRAN K V (INH19EE400), MANJUNATH GANAPATI NAIK (INH19EE402), V SHARON (INH19EE405), HARISH S N (INH19EE406)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

	 Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kacubaisanahalli, Bellandur Post. Bangalore - 560103, Karnataka, India	
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Dr. R. MOHAN DAS	Dr. M. MAHESH	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner

# ACKNOWLEDGMENT

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor & HOD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. R. Mohan Das**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase I would not have been successfully completed.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



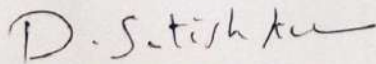
# NEW HORIZON COLLEGE OF ENGINEERING

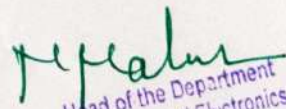
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Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	KIRAN K. V MANJUNATH GANAPATI NAIK V. SHARON HARISH S.N
2	USN	1NH19EE400 1NH19EE402 1NH19EE405 1NH19EE406
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	SMART TRAFFIC CONTROL SYSTEM BY USING ARTIFICIAL INTELLIGENCE
7	Similar Content(%)identified	17%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	13.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Mr. Satish Kumar. D  
Plagiarism - Coordinator

  
Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubel, Marathalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India  
HOD - EEE

# DECLARATION

We **Kiran K V, Manjunath Ganapati Naik, V Sharon, Harish S N**, students of New Horizon College of Engineering hereby declare that this project work entitled **"SMART TRAFFIC CONTROL SYSTEM BY USING ARTIFICIAL INTELLIGENCE"** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>KIRAN K V</b>	<b>1NH19EE400</b>	[ Kiran K.V ]
<b>MANJUNATH</b>	<b>1NH19EE402</b>	[ Mgl ]
<b>V SHARON</b>	<b>1NH19EE405</b>	[ V. Sharon ]
<b>HARISH S N</b>	<b>1NH19EE406</b>	[ Harish S.N ]



# **NEW HORIZON COLLEGE OF ENGINEERING**

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Outer Ring Road, Bellandur, Bengaluru – 560103

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

## **MODELING AND DESIGN OF A SOLAR POWERED DC REFRIGERATOR TO TRANSPORT VACCINE IN REMOTE AREAS**

Submitted in the Final Year Project - Phase II

**Submitted by**

<b>CHITRA S</b>	<b>1NH18EE010</b>
<b>E KAVIPRIYA</b>	<b>1NH18EE013</b>
<b>GREESHMA CHENNAREDDY</b>	<b>1NH18EE017</b>
<b>SAHANA B</b>	<b>1NH18EE050</b>

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22





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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### 20EEE84A Project - Phase II

Report on

## MODELING AND DESIGN OF A SOLAR POWERED DC REFRIGERATOR TO TRANSPORT VACCINE IN REMOTE AREAS

Submitted in the Final Year Project - Phase II

Submitted by

CHITRA S

1NH18EE010

E KAVIPRIYA

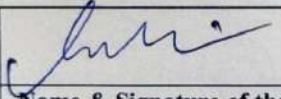
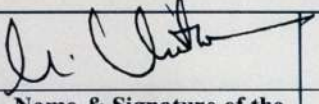
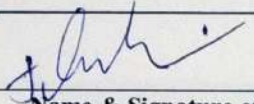
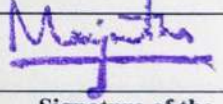
1NH18EE013

GREESHMA CHENNAREDDY

1NH18EE017

SAHANA B

1NH18EE050

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. GUNAPRIYA B	Dr. VINOTHKUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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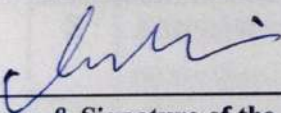
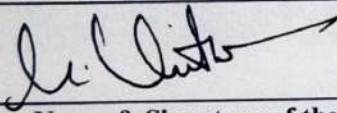
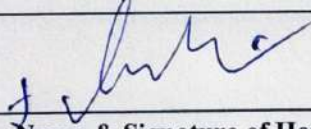
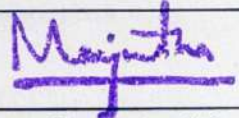
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **“MODELING AND DESIGN OF A SOLAR POWERED DC REFRIGERATOR TO TRANSPORT VACCINE IN REMOTE AREAS”** carried out by **Chitra S (1NH18EE010), E Kavipriya (1NH18EE013), Greeshma Chennareddy (1NH18EE017), Sahana B (1NH18EE050)** bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. GUNAPRIYA B	Dr. VINOTHKUMAR K	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



# NEW HORIZON COLLEGE OF ENGINEERING

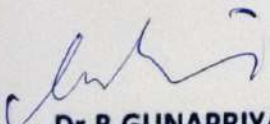
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Accredited by NAAC with 'A' Grade. Accredited by NBA


## LIBRARY & INFORMATION CENTER

### CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	Greeshma Chennareddy Chitra S E Kavipriya Sahana B
2	USN	1NH18EE017 1NH18EE010 1NH18EE013 1NH18EE050
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	MODELING AND DESIGN OF SOLAR POWERED DC REFRIGERATOR TO TRANSPORT VACCINE IN REMOTE AREAS
7	Similar Content(%)identified	23%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	07.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statements made above are true to the best of our knowledge and belief.

  
**Dr.B.GUNAPRIYA**  
Plagiarism - Coordinator

  
**Dr. M. Mahesh**  
Head of the Department  
HOD - EEE  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We Chitra S, E Kavipriya, Greeshma Chennareddy, Sahana B students of New Horizon College of Engineering hereby declare that this project work entitled "**MODELING AND DESIGN OF A SOLAR POWERED DC REFRIGERATOR TO TRANSPORT VACCINE IN REMOTE AREAS**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfilment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>CHITRA</b>	<b>1NH18EE010</b>	[ <i>Chitra S</i> ]
<b>E KAVIPRIYA</b>	<b>1NH18EE013</b>	[ <i>Kavi</i> ]
<b>GREESHMA CHENNAREDDY</b>	<b>1NH18EE017</b>	[ <i>Greeshma</i> ]
<b>SAHANA B</b>	<b>1NH18EE050</b>	[ <i>Sahana B</i> ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### 20EEE84A Project - Phase II

#### Report on

## POWER GENERATION ON HIGHWAY USING SOLAR VERTICAL AXIS WIND TURBINE WITH AIR POLLUTION INDICATOR

Submitted in the partial fulfilment of the Final Year Project - Phase II

#### Submitted by

BHARATH B	1NH18EE006
BHOOMIKA J KUMAR	1NH18EE008
DIVYASHREE N	1NH18EE012
K V NANDEESH	1NH18EE023

Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of the Head of the Department	Signature of the Post-Principal
Prof. ROOPA C	Dr. SUJITHA S	Dr. MANJUNATHA	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

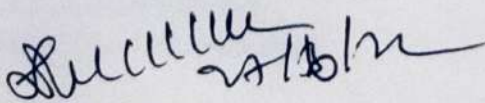
### CERTIFICATE

Certified that the Project work entitled **“POWER GENERATION ON HIGHWAY USING SOLAR VERTICAL AXIS WIND TURBINE WITH AIR POLLUTION INDICATOR”** carried out by **Bharath B (1NH18EE006), Bhoomika J Kumar (1NH18EE008), Divyashree N (1NH18EE012), K V Nandeesh (1NH18EE023)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

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Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of the Head of the Department	Signature of the Principal
Prof. ROOPA C	Dr. SUJITHA S	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Prof. ROOPA C**, Assistant Professor, **Dr. SUJITHA S**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase I would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

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Date:

Place: Bengaluru



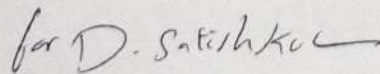
# NEW HORIZON COLLEGE OF ENGINEERING

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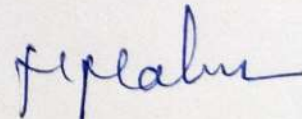
## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	BHARATH B BHOOMIKA J KUMAR DIVYASHREE N K V NANDEESH
2	USN	1NH18EE006 1NH18EE008 1NH18EE012 1NH18EE023
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	POWER GENERATION ON HIGHWAY USING SOLAR VERTICAL AXIS WIND TURBINE WITH AIR POLLUTION INDICATOR.
7	Similar Content(%)identified	7%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	25.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



**Dr.B.GUNAPRIYA**  
Plagiarism - Coordinator



**Dr. M. Mahesh**


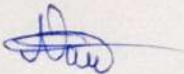
**HOD - EEE**  
Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India



# DECLARATION

We **Bharath B, Bhoomika J Kumar, Divyashree N, K V Nandeesh**, students of New Horizon College of Engineering hereby declare that this project work entitled **“POWER GENERATION ON HIGHWAY USING SOLAR VERTICAL AXIS WIND TURBINE WITH AIR POLLUTION INDICATOR”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>BHARATH B</b>	<b>1NH18EE006</b>			
<b>BHOOMIKA J KUMAR</b>	<b>1NH18EE008</b>		Bhoomika	
<b>DIVYASHREE N</b>	<b>1NH18EE012</b>		Divyashree .N	
<b>K V NANDEESH</b>	<b>1NH18EE023</b>			



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### 20EEE84A Project - Phase II

Report on

## PERFORMANCE EVALUATION OF INDUCTION MOTOR USED IN ELECTRICAL VEHICLES

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

KIRAN U                      1NH18EE026

NAVEEN KUMAR K R      1NH18EE035

ROHAN N                     1NH18EE046

SHREYSH BABU           1NH18EE056

Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of the Head of the Department	Signature of the Principal
Mr. Lithesh J	Dr. N. Prabhakaran	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018





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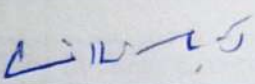

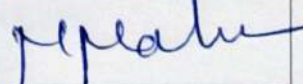

Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

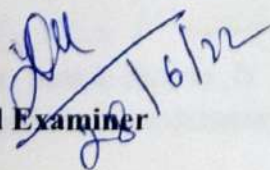
### CERTIFICATE

Certified that the Project work entitled **"PERFORMANCE EVALUATION OF INDUCTION MOTOR USED IN ELECTRICAL VEHICLES"** carried out by **Kiran U(1NH18EE026), Naveen Kumar K R(1NH18EE035), Rohan N(1NH18EE046), Shreysh Babu (1NH18EE056)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of the Project Co-Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Mr. Lithesh J	Dr. N. Prabhakar	Dr. MAHESH M Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, K. D. Marathalli, Bellandur Post Bengaluru - 560103, Karnataka, India	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

(Dr. Joshua D. Raj)

  
External Examiner

(Dr. Levy. M.)

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Mr. Lithesh J**, Senior Assistant Professor, **Dr. N. Prabhakaran**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

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We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 23/06/2022

Place: Bengaluru



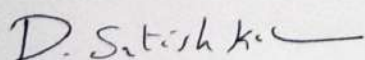
# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade, Accredited by NBA

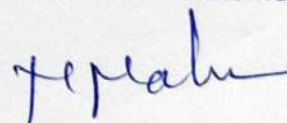
## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	KIRAN U NAVEEN KUMAR K R ROHAN N SHREYSH BABU
2	USN	1NH18EE026 1NH18EE035 1NH18EE046 1NH18EE056
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	PERFORMANCE EVALUATION OF INDUCTION MOTOR USED IN ELECTRICAL VEHICLES
7	Similar Content(%)identified	24%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	25.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



Mr. Satish Kumar. D  
Plagiarism - Coordinator



Dr. M. Mahesh  
HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bengaluru - 560103, Karnataka, India

# DECLARATION

We **Kiran U, Naveen Kumar K R, Rohan N, Shreysh Babu** students of New Horizon College of Engineering hereby declare that this project work entitled **“PERFORMANCE EVALUATION OF INDUCTION MOTOR USED IN ELECTRICAL VEHICLES”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

KIRAN U	1NH18EE026	<i>Kiran U</i>
NAVEEN KUMAR K R	1NH18EE035	<i>Naveen Kumar K R</i>
ROHAN N	1NH18EE046	<i>Rohan N</i>
SHREYSH BABU	1NH18EE056	<i>Shreysh Babu</i>



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## IOT BASED HYDROPONICS MONITORING AND CONTROL SYSTEM USING MICROCONTROLLER OR PLC

Submitted in the partial fulfilment of the Final Year Project - Phase II

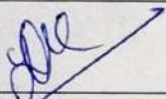
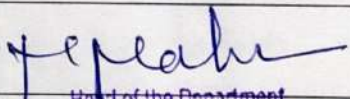
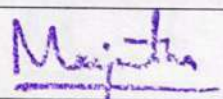
Submitted by

MANOJ KUMAR M B 1NH18EE028

RUTIK LAXMAN BELEKAR 1NH18EE048

SHEKAR V 1NH18EE054

VINAYAKA S DHULEHOLI 1NH18EE062

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur P. O. T. Bangalore - 560103, Karnataka, India Dr. MAHESH M	Signature of the Principal
Dr. J. Joshua Daniel Raj		Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
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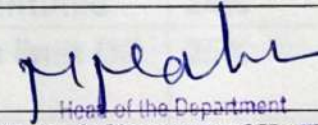
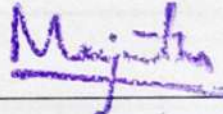
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **"IOT BASED HYDROPONICS MONITORING AND CONTROL SYSTEM USING MICROCONTROLLER OR PLC"** carried out by **Manoj Kumar M B(1NH18EE028), Rutik Laxman Belekar(1NH18EE048), Shekar V(1NH18EE054), Vinayaka S Dhuleholi(1NH18EE062)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

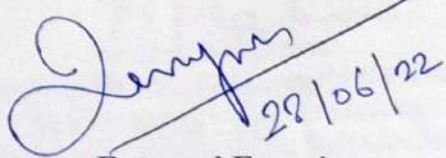
It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Dr. J. Joshua Daniel Raj	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

(Dr. Joshua D. Raj)

  
28/06/22  
External Examiner

Dr. Levy. M.





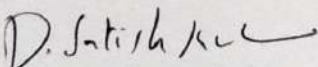
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	MANOJ KUMAR M B RUTIK LAXMAN BELEKAR SHEKAR V VINAYAKA S DHULEHOLI
2	USN	1NH18EE028 1NH18EE048 1NH18EE054 1NH18EE062
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	IOT BASED HYDROPONICS MONITORING AND CONTROL SYSTEM USING MICROCONTROLLER OR PLC
7	Similar Content(%)identified	24%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	01.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

for   
**Dr.B.GUNAPRIYA**  
Plagiarism - Coordinator

  
Head of the Department  
Department of Electrical & Electronics Engineering  
**Dr. M. Mahesh**  
HOD - EEE  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We **Manoj Kumar M B, Rutik Laxman Belekar, Shekar V, Vinayaka S Dhuleholi** students of New Horizon College of Engineering hereby declare that this project work entitled "**IOT BASED HYDROPONICS MONITORING AND CONTROL SYSTEM USING MICROCONTROLLER OR PLC**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>MANOJ KUMAR M B</b>	<b>1NH18EE028</b>	<i>Manoj</i>
<b>RUTIK LAXMAN BELEKAR</b>	<b>1NH18EE048</b>	<i>Rutik</i>
<b>SHEKAR V</b>	<b>1NH18EE054</b>	<i>Shekar</i>
<b>VINAYAKA S DHULEHOLI</b>	<b>1NH18EE062</b>	<i>Vinayaka</i>



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Accredited by NAAC with 'A' Grade. Accredited by NBA

Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### IOT BASED SMART AMBULANCE SYSTEM

Submitted in the partial fulfilment of the Final Year Project - Phase II

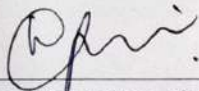
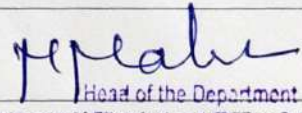

Submitted by

KARTHIK N                      1NH18EE025

LAKSHMIPATHI C              1NH18EE009

ANIRUDH KS                    1NH18EE003

SANJAY G                        1NH18EE052

		
Name & Signature of the Project Guide	Name & Signature of the Head of the Department of Engineering the Department of Engineering Ring Road, Kadubisanahalli, Bellandur Post. Bangalore - 560103, Karnataka, India	Signature of the Principal
Dr. N. PRABHAKARAN	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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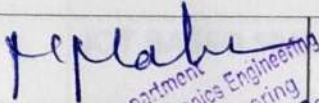
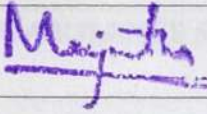
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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

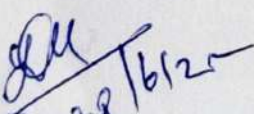
### CERTIFICATE

Certified that the Project work entitled **"IOT BASED SMART AMBULANCE SYSTEM"** carried out by **Karthik N(1NH18EE025)**, **Lakshmi pathi C(1NH18EE009)**, **Anirudh KS(1NH18EE003)**, **Sanjay G(1NH18EE052)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

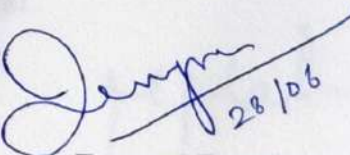
It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. N. PRABHAKARAN	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

(Dr. Joshua. D. Ray)

  
External Examiner  
Dr. Levy. M

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our Guide **Dr. N.Prabhakaran**, Senior Assistant Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 27/06/22  
Place: Bengaluru



# NEW HORIZON COLLEGE OF ENGINEERING

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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	KARTHIK N LAKSHMIPATHI C ANIRUDH KS SANJAY G
2	USN	1NH18EE025 1NH18EE009 1NH18EE003 1NH18EE052
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	IOT BASED SMART AMBULANCE SYSTEM
7	Similar Content(%)identified	22%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	21.06.2022
10	Checked by (Name with signature)	Dr. B.Gunapriya
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

**Dr. B. Gunapriya**  
Plagiarism - Coordinator

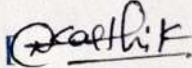
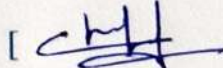


**Dr. M. Mahesh**  
HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We **Karthik N, Lakshmipathi C, Anirudh KS, Sanjay G**, students of New Horizon College of Engineering hereby declare that this project work entitled "**IOT BASED SMART AMBULANCE SYSTEM**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>KARTHIK N</b>	<b>1NH18EE025</b>	[  ]
<b>LAKSHMIPATHI C</b>	<b>1NH18EE009</b>	[  ]
<b>ANIRUDH KS</b>	<b>1NH18EE003</b>	[  ]
<b>SANJAY G</b>	<b>1NH18EE052</b>	[  ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## SWITCHED –CAPACITOR VOLTAGE BOOST CONVERTER FOR ELECTRIC VEHICLES

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

GAGANA C      1NH18EE015  
SUSHMA M      1NH19EE403  
SUSHMITHA TS      1NH19EE404

Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. ANITHA A	Dr. GUNAPRIYA B	Head of the Department Department of Electrical & Electronics Engineering Dr. MAHESH M New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post, Bengaluru - 560103, Karnataka, India	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22





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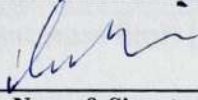
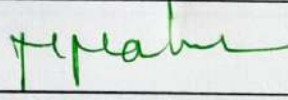

Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **“SWITCHED CAPACITOR VOLTAGE BOOST CONVERTER FOR ELECTRIC VEHICLES”** carried out by **Gagana C (1NH18EE015), Sushma.M(1NH19EE403), Sushmitha.TS(1NH19EE404)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of the Project Co-Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Prof. ANITHA A	Dr. GUNAPRIYA B	Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post. Bangalore - 560103, Karnataka, India Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

(Dr. Joshua D. Raj)

  
External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Anitha A**, Senior Assistant Professor, **Dr.Gunapriya B**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, HOD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



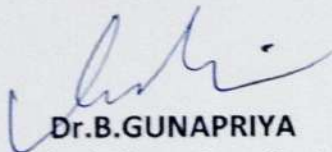
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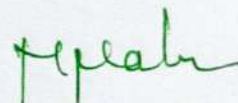
1	Name of the Student	GAGANA C SUSHMA M SUSHMITHA T S
2	USN	1NH18EE015 1NH19EE403 1NH19EE404
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	SWITCHED CAPACITOR VOLATGE BOOST CONVERTER FOR ELECTRIC VEHICLE
7	Similar Content(%)identified	14%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	21.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



Dr. B. GUNAPRIYA

Plagiarism - Coordinator



Dr. M. Mahesh

HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We Gagana C, Sushma M, Sushmitha T S, students of New Horizon College of Engineering hereby declare that this project work entitled **“SWITCHED CAPACITOR VOLTAGE BOOST CONVERTER FOR ELECTRIC VEHICLES”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

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GAGANA C	1NH18EE015	[ <i>Gagana C</i> ]
SUSHMA M	1NH19EE403	[ <i>Sushma M</i> ]
SUSHMITHA TS	1NH19EE404	[ <i>Sushmitha</i> ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### Hybrid Electric Vehicle Wireless Charging Station

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

MUHAMMAD NUMAN BHAT 1NH18EE065

PRABHATH RAJ M 1NH18EE041

MOHAMMED JILANI SAFI 1NH18EE030

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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20EEE84A Project - Phase II

Report on

### Hybrid Electric Vehicle Wireless Charging Station

Submitted in the partial fulfilment of the Final Year Project - Phase II

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MUHAMMAD NUMAN BHAT 1NH18EE065

PRABHATH RAJ M 1NH18EE041

MOHAMMED JILANI SAFI 1NH18EE030

Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Mr. SUNIL S K	Dr. GUNAPRIYA B	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade. Accredited by NBA


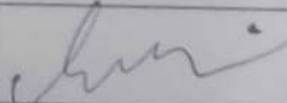
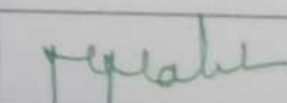
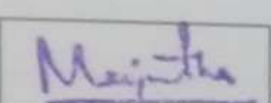
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled "**HYBRID ELECTRIC VEHICLE WIRELESS CHARGING STATION**" carried out by Muhammad Numan Bhat (INH18EE065), Prabhath Raj M (INH18EE041), Mohammed Jilani Safi (INH18EE030), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Mr. SUNIL S K	Dr. GUNAPRIYA B	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

Internal Examiner

External Examiner



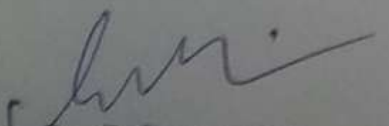
# NEW HORIZON COLLEGE OF ENGINEERING

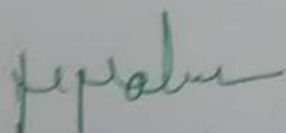
New Horizon Knowledge Park, Ring Road, Marathahalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade. Accredited by NBA

## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	MUHAMMAD NUMAN BHAT MOHAMMED JILANI SAFI PRABHATH RAJ M
2	USN	1NH18EE065 1NH18EE030 1NH18EE041
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	HYBRID ELECTRIC VEHICLE WIRELESS CHARGING STATION
7	Similar Content(%)identified	8%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	23.06.2022
10	Checked by (Name with signature)	Dr. B.Gunapriya
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Dr. B. Gunapriya  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE  
Department of Electrical Engineering  
New Horizon College of Engineering  
Ring Road, Marathahalli, Bengaluru Post  
Bangalore - 560075, Karnataka, India



# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Mr. Sunil S K**, Senior Assistant Professor, **Dr. Gunapriya B**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 25/06/2022

Place: Bengaluru

# DECLARATION

We Muhammad Numan Bhat, Prabhath Raj M, Mohammed Jilani safi students of New Horizon College of Engineering hereby declare that this project work entitled "HYBRID ELECTRIC VEICLE WIRELESS CHARGING STATION" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

MUHAMMAD NUMAN BHAT	1NH18EE065	[ <u>Numan</u> ]
PRABHATH RAJ M	1NH18EE041	[ <u>Prabhath</u> ]
MOHAMMED JILANI SAFI	1NH18EE030	[ <u>Jilani</u> ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

**ARDUINO BASED HAND GESTURE CONTROLLED ROBOT  
USING IOT**

Submitted in the partial fulfillment of the Final Year Project - Phase II

**Submitted by**

JIBRAN ZAIDI [ 1NH18EE022 ]

JAFFER SADIQ [ 1NH18EE020 ]

NIRUPAVARDAN [ 1NH18EE027 ]

VIKRAM.S [ 1NH18EE061 ]

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### 20EEE84A Project - Phase II

#### Report on

## ARDUINO BASED HAND GESTURE CONTROLLED ROBOT USING IOT

Submitted in the partial fulfilment of the Final Year Project - Phase II

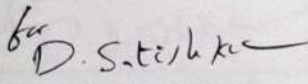
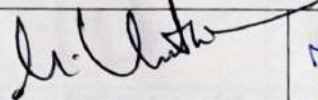
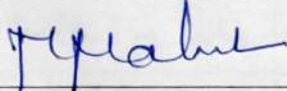

#### Submitted by

JIBRAN ZAIDI [ 1NH18EE022 ]

JAFFER SADIQ [ 1NH18EE020 ]

NIRUPAVARDAN [ 1NH18EE027 ]

VIKRAM.S [ 1NH18EE061 ]

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. GUNAPRIYA B	Dr. VINOTH KUMAR	Dr. MAHESH M Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post. Bangalore - 560103, Karnataka, India	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### BONAFIDE CERTIFICATE

Certified that the Project work entitled "**ARDUINO BASED HANDGESTURECONTROLLED ROBOT USING IOT**" carried out by **JIBRAN ZAIDI (1NH18EE022), JAFFER SADIQ (1NH18EE020), NIRUPAVARDAN (1NH18EE027), VIKRAM.S (1NH18EE061)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

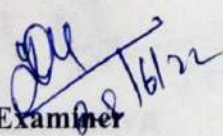
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Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
 Dr. GUNAPRIYA	 Dr. VINOTHKUMAR K	 Dr. MAHESH M	 Dr. MANJUNATHA

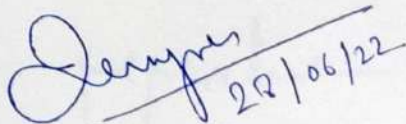
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bengaluru - 560103, Karnataka, India

### SEMESTER END EXAMINATION

Internal Examiner

  
(Dr. Joshua, D. Raj)

External Examiner

  
Dr. Levy. M

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. GUNAPRIYA B**, Associate Professor, **Dr. VINOTH KUMAR K**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and Head of Department, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



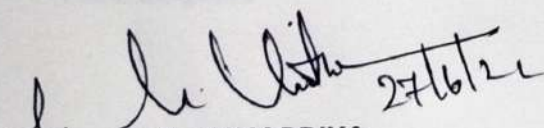
# NEW HORIZON COLLEGE OF ENGINEERING

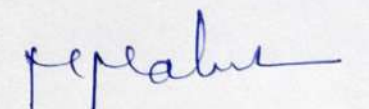
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	JIBRAN ZAIDI JAFER SADIQ NIRUPAVARDHAN VIKRAM S
2	USN	1NH18EE022 1NH18EE020 1NH18EE027 1NH18EE061
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	ARDUINO BASED HAND GESTURE CONTROLLED ROBOT USING IOT
7	Similar Content(%)identified	7%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	23.06.2022
10	Checked by (Name with signature)	Dr.B.GUNAPRIYA
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
27/6/22  
**Dr. B. GUNAPRIYA**  
Plagiarism - Coordinator

  
**Dr. M. Mahesh**  
Head of the Department  
HOD - EEE  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# DECLARATION

We **JIBRAN ZAIDI (1NH18EE022)**, **JAFFER SADIQ (1NH18EE020)**, **NIRUPAVARDAN (1NH18EE027)**, **VIKRAM.S (1NH18EE061)**, students of New Horizon College of Engineering hereby declare that this project work entitled "**ARDUINO BASED HANGESTURECONTROLLED ROBOT USING IOT**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>JIBRAN ZAIDI</b>	[ 1NH18EE022 ]	<u>C. Zub</u>
<b>JAFFER SADIQ</b>	[ 1NH18EE020 ]	Jaffer Sadiq
<b>NIRUPAVARDAN</b>	[ 1NH18EE027 ]	L-Nirupavardhan
<b>VIKRAM.S</b>	[ 1NH18EE061 ]	<u>Vikram.S</u>





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Outer Ring Road, Bellandur, Bengaluru – 560103

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

**OPTIMIZATION OF BATTERY PERFORMANCE IN ELECTRIC  
VEHICLES**

Submitted in the partial fulfillment of the Final Year Project - Phase II

**Submitted by**

<b>PRANAV R NAIK</b>	<b>1NH18EE735</b>
<b>R PUNEETH VENKAT SAI VARMA</b>	<b>1NH18EE736</b>
<b>R SUPRAJA</b>	<b>1NH18EE737</b>
<b>RAHUL VIJAY LINGADHAL</b>	<b>1NH18EE738</b>

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

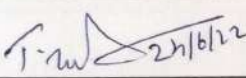
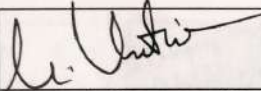
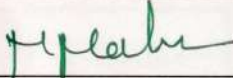
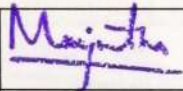
Report on

### PROJECT TITLE

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

PRANAV R NAIK	INH18EE735
R PUNEETH VENKAT SAI VARMA	INH18EE736
R SUPRAJA	INH18EE737
RAHUL VIJAY LINGADHAL	INH18EE738

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Mr. T MUNI PRAKASH	Dr. VINOTH KUMAR	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



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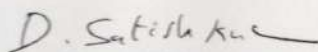
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## LIBRARY & INFORMATION CENTRE

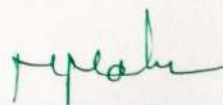
### CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	PRANAV R NAIK R PUNEETH VENKAT SAI VARMA R SUPRAJA RAHUL VIJAY LINGADHAL
2	USN	1NH18EE735 1NH18EE736 1NH18EE737 1NH18EE738
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	OPTIMIZATION OF BATTERY PERFORMANCE IN ELECTRIC VEHICLES
7	Similar Content(%)identified	16%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	22.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



Mr. Satish Kumar. D  
Plagiarism - Coordinator



Dr. M. Mahesh

HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Mr. T Muni Prakash**, Senior Assistant Professor, **Dr. Vinoth Kumar**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

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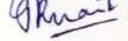

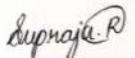
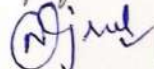
We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 28/06/22  
Place: Bengaluru

# DECLARATION

We Pranav R Naik, R Puneeth Venkat Sai Varma, R Supraja, Rahul Vijay Lingadhal students of New Horizon College of Engineering hereby declare that this project work entitled "**OPTIMIZATION OF BATTERY PERFORMANCE IN ELECTRIC VEHICLES**" is an original and bonafide work carried out by us at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

PRANAV R NAIK	1NH18EE735	[  ]
R PUNEETH VENKAT SAI VARMA	1NH18EE736	[  ]
R SUPRAJA	1NH18EE737	[  ]
RAHUL VIJAY LINGADHAL	1NH18EE738	[  ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

### **Integrated AI and IoT Application in Real Time Locating System for Energy Efficient Home Automation**

Submitted in the partial fulfilment of the Final Year Project - Phase II

**Submitted by**

**STUDENT 1 PAVAN R                      1NH18EE068**

**STUDENT 2 NIRANJAN K R            1NH18EE732**

**STUDENT 3 SHASHIDHAR P H      1NH18EE746**

**STUDENT 4 SHIVA PRASAD L P    1NH18EE747**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-2022



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### Integrated AI and IoT Application in Real Time Locating System for Energy Efficient Home Automation

Submitted in the partial fulfilment of the Final Year Project - Phase II

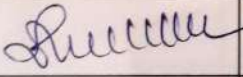
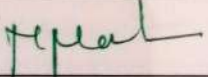
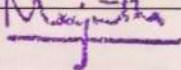
Submitted by

PAVAN R 1NH18EE068

NIRANJAN K R 1NH18EE732

SHASHIDHAR P H 1NH18EE746

SHIVA PRASAD L P 1NH18EE747

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr SUJITHA S	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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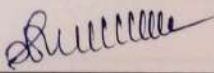
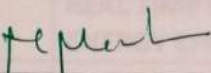
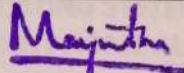
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

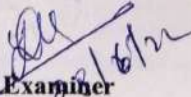
### CERTIFICATE

Certified that the Project work entitled **"INTEGRATED AI AND IoT APPLICATION IN REAL TIME LOCATING SYSTEM FOR ENERGY EFFICIENT HOME AUTOMATION"** carried out by PAVAN R (INH18EE068), NIRANJAN K R (INH18EE732), SHASHIDHAR P H (INH18EE746), SHIVA PRASAD L P (INH18EE747), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

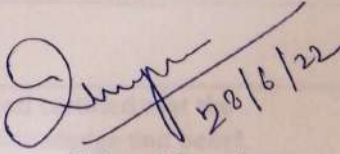
It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr SUJITHA S	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

(Dr. Joshua, D. Regi)

  
External Examiner

Dr. Laya H





# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
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## LIBRARY & INFORMATION CENTRE

### CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	PAVAN R NIRANJAN K R SHASHIDHAR P H SHIVA PRASAD L P
2	USN	1NH18EE068 1NH18EE732 1NH18EE746 1NH18EE747
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	INTEGRATED AI & IoT APPLICATION IN REAL TIME LOCATING SYSTEM FOR ENERGY EFFICIENT HOME AUTOMATION
7	Similar Content(%)identified	5%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	07.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

*D. Satish Kumar*

Mr. Satish Kumar. D  
Plagiarism - Coordinator

*M. Mahesh*

Dr. M. Mahesh

HOD - EEE  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560100, Karnataka, India

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr Sujitha S**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without her motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru

# DECLARATION

We PAVAN R, NIRANJAN K R, SHASHIDHAR P H, SHIVA PRASAD L P students of New Horizon College of Engineering hereby declare that this project work entitled "INTEGRATED AI AND IoT APPLICATION IN REAL TIME LOCATING SYSTEM FOR ENERGY EFFICIENT HOME AUTOMATION " is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

PAVAN R	1NH18EE068	[ Pavan ]
NIRANJAN K R	1NH18EE732	[ Niranjana K R ]
SHASHIDHAR P H	1NH18EE746	[ Shashidhar P.H ]
SHIVA PRASAD L P	1NH18EE747	[ Shiva Prasad ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

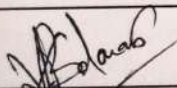
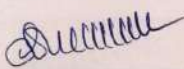
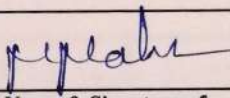
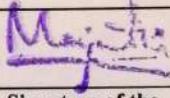
Report on

## MODIFICATION OF ELECTRONIC WARFARE (EW) SUITE ON JAGUAR FIGHTER AIRCRAFT

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

VISHNUPRIYA G G	1NH18EE757
SANKEERTHINI D	1NH18EE742
SARANYA S	1NH18EE743
SRINJANA CHOUDHURY	1NH18EE750

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. DEEPA V B Senior Assistant Professor	Dr. SUJITHA S Associate Professor	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

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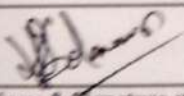
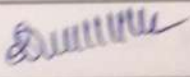
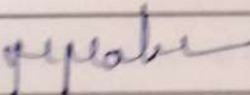
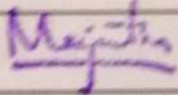
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

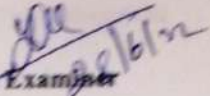
Certified that the Project work entitled **"MODIFICATION OF ELECTRONIC WARFARE (EW) SUITE ON JAGUAR FIGHTER AIRCRAFT"** carried out by Vishnupriya G G (INH18EE757), Sankeerthini D (INH18EE742), Saranya S (INH18EE743), Srisjana Choudhury (INH18EE750), bonafide students of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvarajah Technological University, Belgaum during the Year 2021-22.

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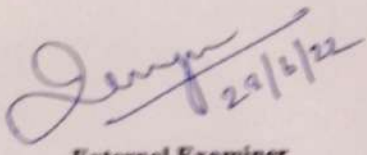
			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signatures of the Principal
Prof. DEEPA V B Senior Assistant Professor	Dr. SUJITHA S Associate Professor	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

Internal Examiner

  
Dr. Joshua D. Rej

External Examiner

  
Dr. Lasya

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Prof. Deepa V B**, Senior Assistant Professor, **Dr. Sujitha S**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

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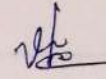
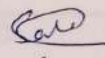
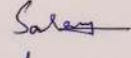
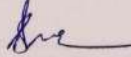
Date:

Place: Bengaluru

## DECLARATION

We Vishnupriya G G, Sankeerthini D, Saranya S, Srinjana Choudhury, students of New Horizon College of Engineering hereby declare that this project work entitled “**MODIFICATION OF ELECTRONIC WARFARE (EW) SUITE ON JAGUAR FIGHTER AIRCRAFT**” is an original and bonafide work carried out by us at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

VISHNUPRIYA G G	1NH18EE757			
SANKEERTHINI D	1NH18EE742			
SARANYA S	1NH18EE743			
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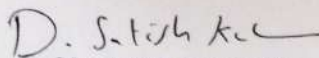
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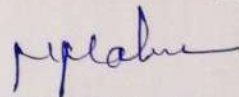
## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	VISHNUPRIYA G G SANKEERTHINI D SARANYA S SRINJANA CHOUDHURY
2	USN	1NH18EE757 1NH18EE742 1NH18EE743 1NH18EE750
3	Course	UG
4	Department	EEE
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7	Similar Content(%)identified	6%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	14.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



Mr. Satish Kumar. D  
Plagiarism - Coordinator



Dr. M. Mahesh  
HOD - EEE





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Outer Ring Road, Bellandur, Bengaluru – 560103

**20EEE84A Project - Phase II**

**Report on**

**SMART POWER THEFT DETECTION SYSTEM USING IOT**

Submitted in the partial fulfillment of the Final Year Project - Phase II

**Submitted by**

**S SHAWIN KRISHNA                      1NH18EE740**

**BELLAM SREEKANTH REDDY 1NH18EE706**

**JOANNA ALICIA D                      1NH18EE718**

**DEEPTHI D                              1NH18EE715**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### SMART POWER THEFT DETECTION SYSTEM USING IOT

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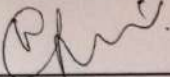
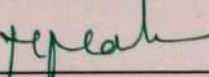
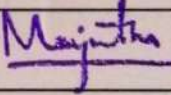
Submitted by

S SHAWIN KRISHNA 1NH18EE740

BELLAM SREEKANTH REDDY 1NH18EE706

JOANNA ALICIA D 1NH18EE718

DEEPTHI D 1NH18EE715

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. N PRABHAKARAN	Dr. MAHESH M Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Pooje Bengaluru - 560103, Karnataka, India	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belgaum: 590018



2021-22



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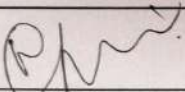
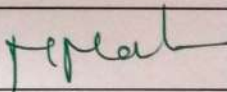
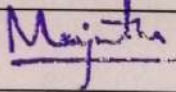
Outer Ring Road, Bellandur, Bengaluru - 560103

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### CERTIFICATE

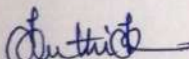
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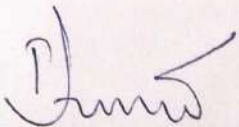
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Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. N PRABHAKARAN	Dr. MAHESH	Dr. MANJUNATHA

Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubesanahalli Post,  
Bellandur, Bengaluru - 560103, Karnataka, India

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner  
27/6/22



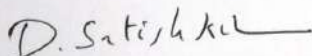
# NEW HORIZON COLLEGE OF ENGINEERING

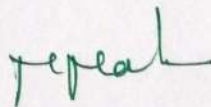
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1	Name of the Student	S SHAWIN KRISHNA BELLAM SREEKANTH REDDY JOANNA ALICIA D DEEPTHI D
2	USN	1NH18EE740 1NH18EE706 1NH18EE718 1NH18EE715
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Final Year Project Report
6	Title of the Document	SMART POWER THEFT DETECTION SYSTEM USING IOT
7	Similar Content(%)identified	20%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	21.06.2022
10	Checked by (Name with signature)	Mr. Sathish Kumar .D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Mr. Sathish Kumar .D  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

# ACKNOWLEDGMENT

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Date:22-06-2022

Place: Bengaluru

# DECLARATION

We S Shawin krishna, Bellam Sreekanth Reddy, Joanna Alicia D, Deepthi D, students of New Horizon College of Engineering hereby declare that this project work entitled "SMART POWER THEFT DETECTION SYSTEM USING IOT" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

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BELLAM SREEKANTH REDDY	1NH18EE706	[ <i>Sreekanth</i> ]
JOANNA ALICIA D	1NH18EE718	[ <i>Joanna</i> ]
DEEPTHI D	1NH18EE715	[ <i>Deepthi</i> ]



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Outer Ring Road, Bellandur, Bengaluru – 560103.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE784A

Project - Phase II

Report on

### ELECTRONIC WARFARE SYSTEM BASED ON ELECTROMAGNETIC PULSE

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

K. ABISHEK 1NH18EE719

K. AJAY 1NH18EE720

SANDESH VANTAGODI 1NH19EE408

DHEEPAK BAALAJI 1NH17EE712

	 Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur Post, Bengaluru - 560 103, India	
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. JOSHUA DANIEL RAJ J	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-2022



# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade. Accredited by NBA

Outer Ring Road, Bellandur, Bengaluru – 560103.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled **“ELECTRONIC WARFARE SYSTEM BAESD ON ELECTROMAGNETIC PULSE”** carried out by K. Abishek (1NH18EE719), K. Ajay (1NH18EE720), Sandesh Vantagodi (1NH19EE408), Dheepak Baalaji.I (1NH17EE712) bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswaraiah Technological University, Belgaum during the Year 2020-21.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

Name & Signature of  
the Project Guide

Dr. JOSHUA DANIEL  
RAJ

Head of the Department  
Name & Signature of Head  
of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bengaluru - 560103, Karnataka, India  
Dr. MAHESH M

Signature of Principal

Dr. MANJUNATHA

### SEMESTER END EXAMINATION

Internal Examiner

External Examiner

27/6/22





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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	K ABISHEK K AJAY SANDESH VANTAGODI DHEEPAK BAALAJI I
2	USN	1NH18EE719 1NH18EE720 1NH19EE408 1NH17EE712
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	ELECTRONIC WARFARE SYSTEM BASED ON ELECTROMAGNETIC PULSE
7	Similar Content(%)identified	17%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	25.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

Mr. Satish Kumar. D  
Plagiarism - Coordinator

Dr. M. Mahesh  
Head of Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bengaluru - 560103, Karnataka, India

## DECLARATION

We **K.Abishek, K.Ajay, Sandesh Vantagodi, Dheepak Baalaji.I**, students of New Horizon College of Engineering hereby declare that this project work entitled "**ELECTRONIC WARFARE SYSTEM BASED ON ELECTROMAGNETIC PULSE**" is an original and bonafide work carried out by us at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>K. ABISHEK</b>	<b>1NH18EE719</b>	[ <i>K.A</i> ]
<b>K. AJAY</b>	<b>1NH18EE720</b>	[ <i>Ajay K.</i> ]
<b>SANDESH VANTAGODI</b>	<b>1NH19EE408</b>	[ <i>Sandesh Vantagodi</i> ]
<b>DHEEPAK BAALAJI.I</b>	<b>1NH117EE712</b>	[ <i>Dheepak</i> ]

## ACKNOWLEDGEMENT

I take this opportunity to convey my gratitude to all those who have been kind enough to offer their advice and provide assistance when needed which has led to the successful completion of the project.

I would like to express my immense gratitude to **Dr. Mohan Manghnani**, Chairman, NHCE, **Dr. Manjunatha**, Principal, NHCE and **Dr. Mahesh M.**, Prof. & Head of the department for their constant support and motivation that has encouraged me to come up with this project and also for providing the right ambience for carrying out the work and the facilities provided to me.

I express my warm thanks to my project guide **Dr. Joshua Daniel Raj.J.**, Sr. Assistant Professor, Dept. of Electrical and Electronics Engineering, New Horizon College of Engineering for his/her skilful guidance, constant supervision, timely suggestion and constructive criticism in successful completion of my project in time.

I wish to thank all the faculty of Electrical and Electronics Engineering department for providing required support throughout the project.

I would like to thank my parents for supporting and helping in the completion of the project.

Last but not the least I would like to thank all my friends without whose support and co-operation the completion of project would not have been possible.

K.Abishek	1NH18EE719
K.Ajay	1NH18EE720
Sandesh Vantagodi	1NH19EE408
Dheepak Baalaji.I	1NH17EE712



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Outer Ring Road, Bellandur, Bengaluru – 560103

## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

### **Solar Based Energy Efficient Hybrid SLBLDC Motor for Agriculture**

Submitted in the partial fulfilment of the Final Year Project - Phase II

**Submitted by**

<b>MD SAGAR KHAN</b>	<b>1NH18EE727</b>
<b>ASHWINI B LOKARE</b>	<b>1NH18EE725</b>
<b>KULSHRESTHA UTKARSH ALOK</b>	<b>1NH18EE724</b>
<b>VIVEK RANJAN</b>	<b>1NH18EE069</b>

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama", Belgaum: 590018**



2021-2022



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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

20EEE84A Project - Phase II

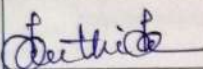
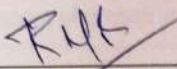
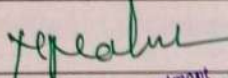
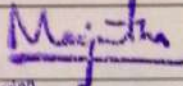
Report on

## **Solar Based Energy Efficient Hybrid SLBLDC Motor for Agriculture**

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

MD SAGAR KHAN	1NH18EE727
ASHWINI B LOKARE	1NH18EE725
KULSHRESTHA UTKARSH ALOK	1NH18EE724
VIVEK RANJAN	1NH18EE069

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. KARTHIKA M	Dr. MOHAN DAS R	Dr. MAHESH W	Dr. MANJUNATHA

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama", Belgaum: 590018**



2021-2022



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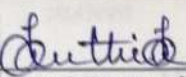
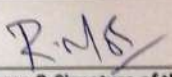
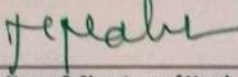
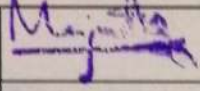
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

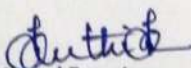
### CERTIFICATE

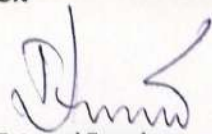
Certified that the Project work entitled "SOLAR BASED ENERGY EFFICIENT HYBRID SLBLDC MOTOR FOR AGRICULTURE" carried out by Md Sagar Khan(1NH18EE727), Ashwini B Lokare(1NH18EE725), Kulshrestha Utkarsh Alok(1NH18EE724), Vivek Ranjan(1NH18EE069), bonafide Student(s) of New Horizon College of Engineering submitted report in the partial fulfillment for the award of Bachelor of Engineering in Department of Electrical and Electronics Engineering, New Horizon College of Engineering of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

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Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. KARTHIKA M	Dr. MOHAN DAS R	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner  
27/6/22

## DECLARATION

I Md Sagar Khan, Ashwini B Lokare, Kulshrestha Utkarsh Alok, Vivek Ranjan, students of New Horizon College of Engineering hereby declare that, this project work entitled **"SOLAR BASED ENERGY EFFICIENT HYBRID SLBLDC MOTOR FOR AGRICULTURE"** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

I also declare that, to the best of my knowledge and belief, the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion by any student.

2	Name	Md Sagar Khan	1NH18EE727	[ <i>Md Sagar</i> ]
3	Name	Ashwini B Lokare	1NH18EE725	[ <i>Ashwini</i> ]
4	Name	Kulshrestha Utkarsh Alok	1NH18EE724	[ <i>Utkarsh</i> ]
5	Name	Vivek Ranjan	1NH18EE069	[ <i>Vivek Ranjan</i> ]
6	Specific remarks, if any			

We have verified the contents as summarized above and certify that the statements made above are true to the best of our knowledge and belief.

Dr. Sushil Kumar  
Mr. Sushil Kumar, D  
Professor - Coordinator



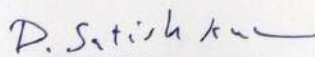
# NEW HORIZON COLLEGE OF ENGINEERING

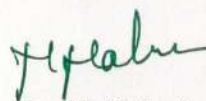
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	MD SAGAR KHAN ASHWINI B LOKARE KULSHRESTHA UTKARSH ALOK VIVEK RANJAN
2	USN	1NH18EE727 1NH18EE725 1NH18EE724 1NH18EE069
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	SOLAR BASED ENERGY EFFICIENT HYBRID SLBLDC MOTOR FOR AGRICULTURE
7	Similar Content(%)identified	6%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

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Mr. Satish Kumar. D  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD, EEE Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India



## ACKNOWLEDGEMENT

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Md Sagar Khan 1NH18EE727

Ashwini B Lokare 1NH18EE725

Kulshrestha Utkarsh Alok 1NH18EE724

Vivek Ranjan 1NH18EE069



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

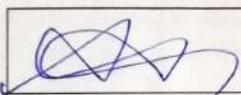
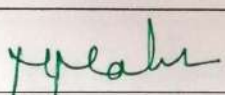
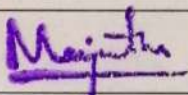
Report on

## IMPLEMENTATION AND DESIGN OF COBOTS IN FLORICULTURE

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

NIRANJAN C	1NH18EE731
ABHIMANYU IYER	1NH18EE700
DHANUSH L	1NH18EE716
RAMESHARAJA URSU K R	1NH19EE407

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. A SINGARAVELAN	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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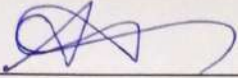
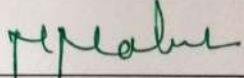
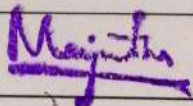
Outer Ring Road, Bellandur, Bengaluru - 560103

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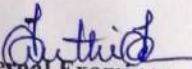
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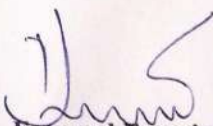
Certified that the Project work entitled "**IMPLEMENTATION AND DESIGN OF COBOTS IN FLORICULTURE**" carried out by **NIRANJAN C (INH18EE731)**, **ABHIMANYU IYER (INH18EE700)**, **DHANUSH L (INH18EE716)**, **RAMESHARAJA URSU K R (INH19EE407)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

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Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. A SINGARAVELAN	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

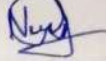

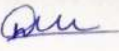
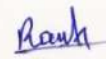
  
External Examiner  
22/6/22

## DECLARATION

---

We **NIRANJAN C, ABHIMANYU IYER, DHANUSH L, RAMESHRAJA USRU KR**, students of New Horizon College of Engineering hereby declare that this project work entitled **"IMPLEMENTATION AND DESIGN OF COBOTS IN FLORICULTURE"** is an original and bonafide work carried out by us at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>NIRANJAN C</b>	<b>1NH18EE731</b>	
<b>ABHIMANYU IYER</b>	<b>1NH18EE700</b>	
<b>DHANUSH L</b>	<b>1NH18EE716</b>	
<b>RAMESHARAJA USRU KR</b>	<b>1NH19EEE407</b>	

## ACKNOWLEDGENT

---

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. A SINGARAVELAN**, Senior Assistant Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this mini project would not have been successfully completed.

We grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

NIRANJAN C	1NH18EE731
ABHIMANYU IYER	1NH18EE700
DHANUSH L	1NH18EE716
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2	USN	1NH18EE731 1NH18EE700 1NH18EE716 1NH19EE407
3	Course	UG
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6	Title of the Document	IMPLEMENTATION AND DESIGN OF COBOTS IN FLORICULTURE
7	Similar Content(%)identified	7%
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9	Date of Verification	01.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

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*D. Satish Kumar*

Mr. Satish Kumar. D  
Plagiarism - Coordinator

*Dr. M. Mahesh*

Dr. M. Mahesh  
HOD - EEE



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## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

20EEE84A Project - Phase 2

Report on

### **Accident Identification and**

### **Alerting System by using Raspberry Pi**

Submitted in the partial fulfillment of the Final Year Project - Phase 2

Submitted by

VENKAN GOUDA

1NH18EE754

VISHWANATH PATIL

1NH18EE758

P.MD. MUTHAHIR KHAN

1NH18EE733

BHARATESH SHIRADONI

1NH18EE707

## **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE78A Project - Phase 2

Report on

### Accident Identification and Alerting System by using Raspberry Pi

Submitted in the partial fulfillment of the Final Year Project - Phase 2

Submitted by

VENKAN GOUDA

1NH18EE754

VISHWANATH PATIL

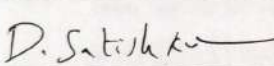

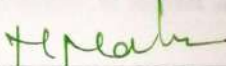
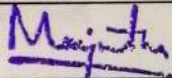
1NH18EE758

P.MD. MUTHAHIR KHAN

1NH18EE733

BHARATESH SHIRADONI

1NH18EE707

			
NAME AND SIGNATURE OF PROJECT GUIDE	NAME AND SIGNATURE OF PROJECT CO-GUIDE	NAME AND SIGNATURE OF HEAD OF DEPARTMENT	SIGNATURE OF THE PRINCIPLE
SATISH KUMAR D	MOHAN DAS R	Dr. MAHESH M New Department of Electrical and Electronics Engineering Ring Road, Kadubisanahalli, Bellandur Post Bengaluru - 560103, Karnataka, India	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018







# NEW HORIZON COLLEGE OF ENGINEERING

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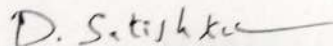
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

Certified that the Project work entitled "**Accident Identification and Alerting System by using Raspberry Pi**" carried out by VENKAN GOUDA (INH18EE754), VISHWANATH PATIL (INH18EE758), P.MD.MUTHAHIR KHAN (INH18EE733) and BHARATESH SHIRADONI (INH18EE707) bonafide Students of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswaraiah Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.



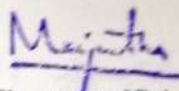
Name & Signature of the  
Project Guide

Satish Kumar. D



Name & Signature of Head  
of the Department


Head of the Department  
Department of Electrical and Electronics Engineering  
Dr. MANJESH M  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bengaluru - 560103, Karnataka, India



Signature of Principal

Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner

27/6/22

## DECLARATION

We Venkan gouda, Vishwanath patil, P.MD.Muthahir khan, Bharatesh shiradoni, students of NewHorizon College of Engineering hereby declare that this project work entitled "Accident Identification and Alerting System by using Raspberry Pi" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

VENKAN GOUDA	1NH18EE754	<i>Hats</i>
VISHWANATH PATIL	1NH18EE758	<i>Patil</i>
P.MD.MUTHAHIR KHAN	1NH18EE733	<i>P. Muthahir</i>
BHARATESH SHIRADONI	1NH18EE707	<i>Shiradoni</i>



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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	VENKAN GOUDA VISHWANATH PATIL P.MD. MUTHAHIR KHAN BHARATESH SHIRADONI
2	USN	1NH18EE754 1NH18EE758 1NH18EE733 1NH18EE707
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	ACCIDENT IDENTIFICATION AND ALERTING SYSTEM BY USING RASPBERRY PI
7	Similar Content(%)identified	21%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

Mr. Satish Kumar. D  
Plagiarism - Coordinator

Dr. M. Mahesh  
Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India

## ACKNOWLEDGMENT

We would like to thank everyone who supported us during this entire period of making of this project. It would not have been possible without the kind support and help of many individuals and professors. We would like to extend our sincere gratitude to all of them. In performing this mini project, we had to take the help and guideline of some respected persons, who deserve our greatest gratitude. The completion of this project gives us much pleasure and satisfaction. We would like to show our gratitude to Mr. **Satish Kumar. D, Senior Assistant Professor Department of Electrical Engineering** for giving us a good guideline and helping for project throughout numerous consultations and guidance. We would also like to thank **Dr.M.Mahesh, Professor and Head of the Department of Electrical Engineering** for guiding us. I am thankful to other professors also for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of our major project. We would also like to expand our deepest gratitude to all those who have directly and indirectly guided us in preparing this report for this major project.

Many people, especially our own classmates and team members itself, have made valuable comment suggestions on this proposal which gave us an inspiration and hope to improve and complete the major project. We were very excited in doing this. We thank all the people for their help directly and indirectly to complete our project successfully.



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## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

20EEE84A Project - Phase II

Report on

## **UNINTERRUPTED AUTONOMOUS POWER DISTRIBUTION SYSTEM FOR RESIDENTIAL LOADS**

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

SAYANTH P V

1NH18EE067

ADITHYA HEGDE

1NH18EE701

VISHAL SURESH

1NH18EE756

NAHUSH S

1NH18EE739

## **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**"Jnana Sangama", Belgaum: 590018**



2021-22



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## UNINTERRUPTED AUTONOMOUS POWER DISTRIBUTION SYSTEM FOR RESIDENTIAL LOADS

Submitted by

SAYANTH P V

1NH18EE067

ADITHYA HEGDE

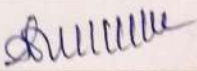
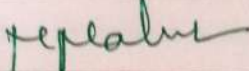
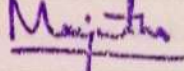
1NH18EE701

VISHAL SURESH

1NH18EE756

NAHUSH S

1NH18EE739

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. SUJITHA S	Dr. MAHESH M	Dr. MANJUNATHA

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
560103, Bengaluru, Karnataka, India

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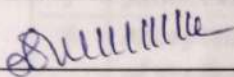
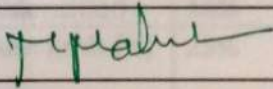
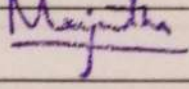
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

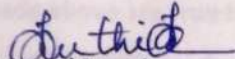
### CERTIFICATE

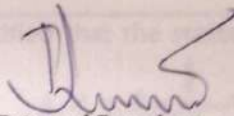
Certified that the Project work entitled **"UNINTERRUPTED AUTONOMOUS POWER DISTRIBUTION SYSTEM FOR RESIDENTIAL LOADS"** carried out by SAYANTH P V (1NH18EE067), ADITHYA HEGDE (1NH18EE701), VISHAL SURESH (1NH18EE756), NAHUSH S (1NH18EE739) Bonafide Students of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering of Visveswaraiah Technological University, Belgaum** during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. SUJITHA S	Dr. MAHESH M	Dr. MANJUNATHA

Head of the Department  
Department of Electrical and Electronics Engineering  
**SEMESTER END EXAMINATION**  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India

  
Internal Examiner

  
External Examiner

27/6/22



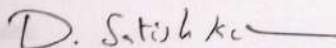
# NEW HORIZON COLLEGE OF ENGINEERING

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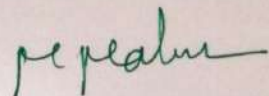
## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	ADITHYA HEGDE VISHAL SURESH SAYANTH PV NAHUSH S
2	USN	1NH18EE701 1NH18EE756 1NH18EE067 1NH18EE739
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	UNINTERRUPTED AUTONOMOUS POWER DISTRIBUTION SYSTEM FOR RESIDENTIAL LOADS
7	Similar Content(%)identified	14%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.



Mr. Satish Kumar. D  
Plagiarism - Coordinator



Dr. M. Mahesh  
HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Marathalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India



## ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisors, **Dr. Sujitha**, Associate Professor Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase I would not have been successfully completed.

We grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We would also be thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express my sincere thanks to **Dr. M. Mahesh**, Professor and HoD , Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend my profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

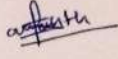



Date:

Place: Bengaluru

## DECLARATION

We **ADITHYA HEGDE, VISHAL SURESH, SAYANTH PV, NAHUSH S** students of New Horizon College of Engineering hereby declare that this project work entitled **“UNINTERRUPTED AUTONOMOUS POWER DISTRIBUTION SYSTEM FOR RESIDENTIAL LOADS”** is an original and Bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visveswaraiah Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>SAYANTH PV</b>	<b>1NH18EE067</b>		
<b>NAHUSH S</b>	<b>1NH18EE739</b>		
<b>ADITHYA HEGDE</b>	<b>1NH18EE701</b>		
<b>VISHAL SURESH</b>	<b>1NH18EE756</b>		



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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84 Project - Phase II**

**Report on**

## **AUTOMATIC SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI**

Submitted in the partial fulfilment of the Final Year Project - Phase II

**Submitted by**

**T HARSHAVARDHAN REDDY      1NH18EE751**

**SHIVAM                                      1NH18EE748**

**SHIVANGI PANDEY                      1NH18EE749**

**CHANDAN N                                1NH18EE711**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84 Project - Phase II Report on

## AUTOMATIC SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI

Submitted in the partial fulfilment of the Final Year Project - Phase II

Submitted by

T HARSHAVARDHAN REDDY 1NH18EE751

SHIVAM 1NH18EE748

SHIVANGI PANDEY 1NH18EE749

CHANDAN N 1NH18EE711

Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
RAMAKRISHNAN S	DR. JOSHUA DANIEL RAJ	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belgaum: 590018



2021-22



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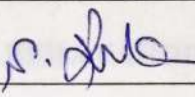

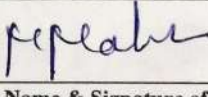

Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

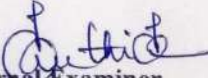
### CERTIFICATE

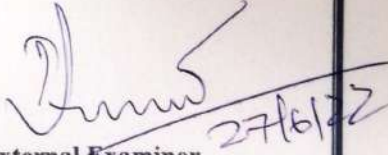
Certified that the Project work entitled "**AUTOMATIC SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI**" carried out by **T Harshavardhan Reddy (1NH18EE751)**, **Shivam (1NH18EE748)**, **Shivangi Pandey (1NH18EE749)**, **Chandan N (1NH18EE711)** bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfillment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visveswaraiah Technological University, Belgaum during the Year 2021-22.

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Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
RAMAKRISHNAN S	DR. JOSHUA DANIEL RAJ	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

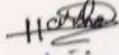
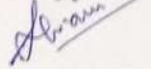
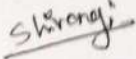

  
Internal Examiner

  
External Examiner 27/6/22

## DECLARATION

We T Harshavardhan Reddy, Shivam, Shivangi Pandey, Chandan N students of New Horizon College of Engineering hereby declare that this project work entitled "AUTOMATIC SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

T HARSHAVARDHAN REDDY	1NH18EE751			
SHIVAM	1NH18EE748			
SHIVANGI PANDEY	1NH18EE749			
CHANDAN N	1NH18EE711			



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## BONAFIDE CERTIFICATE


This is to Certify that the Final Year Project Phase-II work entitled "**AUTOMATIC SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI**" carried out by T Harshavardhan Reddy (INH18EE751), Shivam (INH18EE748), Shivangi Pandey (INH18EE749), Chandan N (INH18EE711) a bonafide student(s) of New Horizon College of Engineering in partial fulfillment for the award of **Bachelor of Engineering** in Electrical and Electronics Engineering of the Visveswaraiah Technological University, Belgaum during the year 2021-2022. It is certified that he/she has completed the project satisfactorily.

  
Ramakrishnan S

Signature of the Guide

  
Dr. M. Mahesh

Signature of the Head of department

  
Dr. Manjunatha

Signature of the Principal



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### CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	T.HARSHAVARDHAN REDDY
2	USN	1NH18EE751
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	SPEED CONTROL OF AN ELECTRIC VEHICLE USING RASPBERRY PI
7	Similar Content(%)identified	23%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	25.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

*D. Satish k.*

Mr. Satish Kumar. D  
Plagiarism - Coordinator

Dr. M. Mahesh  
HOD - EEE





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Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### IoT BASED WATER LEVEL AND WATER QUALITY MONITORING SYSTEM

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

B. SAI BHARATH REDDY	1NH18EE705
CHANDRASHEKAR C	1NH18EE712
D. SIVA PRASAD	1NH18EE714
SHAIK MAHAMMAD ADIL	1NH18EE745

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belgaum: 590018



2021-22



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

### IoT BASED WATER LEVEL AND WATER QUALITY MONITORING SYSTEM

Submitted in the partial fulfilment of the Final Year Project - Phase II

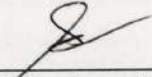
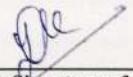
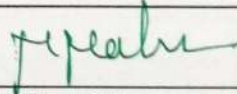
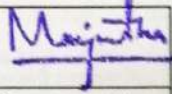
Submitted by

B. SAI BHARATH REDDY 1NH18EE705

CHANDRASHEKAR C 1NH18EE712

D. SIVA PRASAD 1NH18EE714

SHAIK MAHAMMAD ADIL 1NH18EE745

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Mr. INBASAKARAN S	Dr. J. JOSHUA DANIEL RAJ	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



# NEW HORIZON COLLEGE OF ENGINEERING

New Horizon Knowledge Park, Ring Road, Marathalli  
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Accredited by NAAC with 'A' Grade. Accredited by NBA


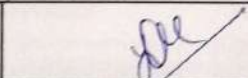
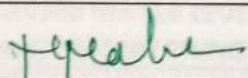
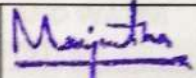
Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

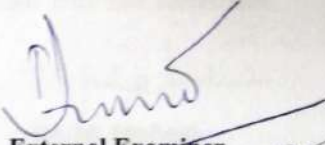
Certified that the Project work entitled **"IoT Based Water Level and Water Quality Monitoring System"** carried out by B. Sai Bharath Reddy (INH18EE705), Chandrashekar C (INH18EE712), D. Siva Prasad (INH18EE714), Shaik Mahammad Adil (INH18EE745), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Mr. INBASAKARAN S	Dr. J. JOSHUA DANIEL RAJ	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner  
27/6/22



# NEW HORIZON COLLEGE OF ENGINEERING

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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	B. SAI BHARATH REDDY CHANDRASHEKAR C D. SIVA PRASAD SHAIK MAHAMMAD ADIL
2	USN	1NH18EE705 1NH18EE712 1NH18EE714 1NH18EE745
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	IoT BASED WATER LEVEL AND WATER QUALITY MONITORING SYSTEM
7	Similar Content(%)identified	13%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

*D. Satish Kumar*

Mr. Satish Kumar. D  
Plagiarism - Coordinator

*Dr. M. Mahesh*

Dr. M. Mahesh  
HOD - EEE

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Mr. Inbasakaran S**, Senior Assistant Professor, **Dr. J. Joshua Daniel Raj**, Senior Assistant Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, Professor & HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru

# DECLARATION

We **B. Sai Bharath Reddy, Chandrashekar C, D. Siva Prasad, Shaik Mahammad Adil** students of New Horizon College of Engineering hereby declare that this project work entitled **“IoT Based Water Level and Water Quality Monitoring System”** is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

<b>B. Sai Bharath Reddy</b>	<b>1NH18EE705</b>	[ <i>B. Bh</i> ]
<b>Chandrashekar C</b>	<b>1NH18EE712</b>	[ <i>Chandras</i> ]
<b>D. Siva Prasad</b>	<b>1NH18EE714</b>	[ <i>D. Siva Prasad</i> ]
<b>Shaik Mahammad Adil</b>	<b>1NH18EE745</b>	[ <i>Shaik</i> ]



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Outer Ring Road, Bellandur, Bengaluru - 560103

20EEE84A Project - Phase II

Report on

## ELECTRIC BICYCLE FABRICATION USING SPLIT CHARGING TECHNOLOGY

Submitted in the partial fulfillment of the Final Year Project - Phase II

Submitted by

BHAVANA YC            INH18EE708

BINDHU V             INH18EE709

C BHAVANA SINGH   INH18EE710

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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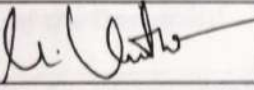
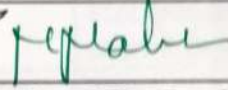
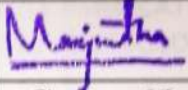
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### CERTIFICATE

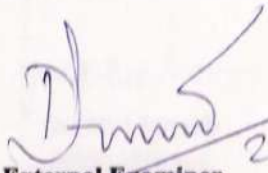
Certified that the Project work entitled "**ELECTRIC BICYCLE FABRICATION USING SPLIT CHARGING TECHNOLOGY**" carried out by Bhavana YC (INH18EE708), Bindhu V (INH18EE709), C Bhavana Singh (INH18EE710), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

		
Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. Vinoth Kumar K	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner 27/6/22





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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	BHAVANA Y C BINDHU V BHAVANA SINGH
2	USN	1NH18EE708 1NH18EE709 1NH18EE710
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	ELECTRIC BICYCLE FABRICATION USING SPLIT CHARGING TECHNOLOGY
7	Similar Content(%)identified	20%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	17.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

*D. Satish Kumar*

Mr. Satish Kumar. D  
Plagiarism - Coordinator

*Dr. M. Mahesh*

Dr. M. Mahesh

HOD - EEE

Head of the Department  
Department of Electrical and Electronics Engineering  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post.  
Bangalore - 560103, Karnataka, India

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. Vinoth Kumar K**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, HoD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 10-06-2022

Place: Bengaluru

# DECLARATION

We Bhavana Y C, Bindhu V, C Bhavana Singh students of New Horizon College of Engineering hereby declare that this project work entitled "**ELECTRIC BICYCLE FABRICATION USING SPLIT CHARGING TECHNOLOGY**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

**BINDHU V 1NH18EE709**

[ *Bindhu* ]

**BHAVANA YC 1NH18EE708**

[ *Bhavana* ]

**C BHAVANA SINGH 1NH18EE710**

[ *Bhavana* ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

20EEE84A Project - Phase II

Report on

## DESIGN AND IMPLEMENTATION OF ELECTRIC BIKE

Submitted in the partial fulfilment of the Final Year Project - Phase II

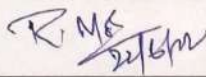
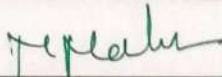
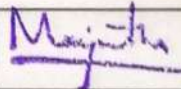
Submitted by

VARUN SHAM KUMAR K S    INH18EE753

A TEEQ UR RAHAMAN        INH18EE704

SRIDHARSHINI S            INH18EE743

S V PAVAN KUMAR         INH18EE744

		
<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Dr. Mohan Das R	Dr. MAHESH M	Dr. MANJUNATHA

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belgaum: 590018



2021-22



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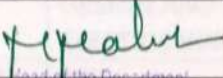
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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

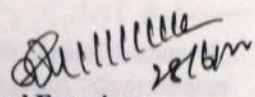
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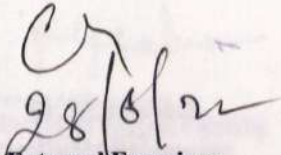
Certified that the Project work entitled **"DESIGN AND IMPLEMENTATION OF ELECTRIC BIKE"** carried out by Varun Sham Kumar KS (INH18EE753), Ateeq Ur Rahaman (INH18EE704), Sridharshini S (INH18EE741), S V Pavan Kumar (INH18EE744), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

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<b>Name &amp; Signature of the Project Guide</b>	<b>Name &amp; Signature of Head of the Department</b>	<b>Signature of the Principal</b>
Dr. Mohan Das R	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



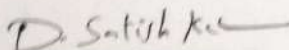
# NEW HORIZON COLLEGE OF ENGINEERING

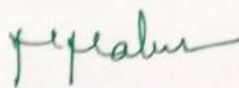
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	VARUN SHAM KUMAR K S SRIDHARSHINI SARAVANAN ATEEQ UR RAHAMAN S V PAVAN KUMAR
2	USN	1NH18EE753 1NH18EE741 1NH18EE704 1NH18EE744
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	DESIGN AND CONSTRUCTION OF ELECTRIC BIKE
7	Similar Content(%)identified	22%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	10.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Mr. Satish Kumar. D  
Plagiarism - Coordinator

  
Head of the Department  
Dr. M. Mahesh  
Department of Electrical and Electronics Engineering  
HOD - EEE  
New Horizon College of Engineering  
Ring Road, Kadubisanahalli, Bellandur Post,  
Bangalore - 560103, Karnataka, India

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor **Dr. Mohan Das R**, Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

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We express our sincere thanks to **Dr. M. Mahesh**, PROFESSOR & HOD, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 10-06-2022

Place: Bengaluru

# DECLARATION

We **Varun Sham Kumar K S, Ateeq Ur Rahaman, Sridharshini S, S V Pavan Kumar** students of New Horizon College of Engineering hereby declare that this project work entitled "**DESIGN AND IMPLEMENTATION OF ELECTRIC BIKE**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

**VARUN SHAM KUMAR K S 1NH18EE753**

[  ]


**ATEEQ UR RAHAMAN 1NH18EE704**

[  ]

**SRIDHARSHINI S 1NH18EE741**

[  ]

**S V PAVAN KUMAR 1NH18EE744**

[  ]





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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

**LORA BASED SMART CITIES AND HOME AUTOMATION USING  
THE IOT**

Submitted in the partial fulfillment of the Final Year Project - Phase II

**Submitted by**

**ANANDA. M. A INH18EE702**

**K. PRASANNA INH18EE722**

**KIRAN. P. GOWDA INH18EE723**

**PRAJWAL RAIKAR INH18EE734**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-2022



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20EEE84A Project - Phase II

Report on

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Submitted in the partial fulfilment of the Final Year Project - Phase II

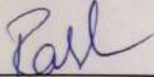
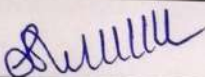
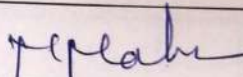
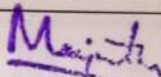
Submitted by

ANANDA. M. A 1NH18EE702

K. PRASANNA 1NH18EE722

KIRAN. P. GOWDA 1NH18EE723

PRAJWAL RAIKAR 1NH18EE734

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof. RASHMI N	Dr. SUJITHA.S	Dr. MAHESH M	Dr. MANJUNATHA

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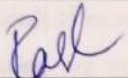
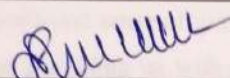
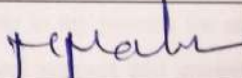
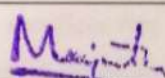
Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

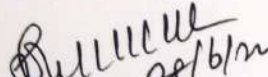
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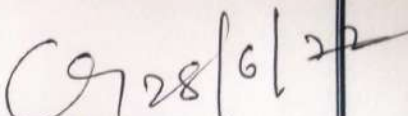
Certified that the Project work entitled "**LORA BASED SMART CITIES AND HOME AUTOMATION USING THE IOT**" carried out by ANANDA.M.A.(INH18EE702), K.PRASANNA(INH18EE722),KIRAN.P.GOWDA(INH18EE723),PRAJWALRAIKAR(INH18EE734), bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

It is certified that all the corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for said Degree.

			
Name & Signature of the Project Guide	Name & Signature of the Project Co-Guide	Name & Signature of Head of the Department	Signature of the Principal
Prof .RASHMI.N	Dr. SUJITHA.S	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
28/6/22  
Internal Examiner

  
28/6/22  
External Examiner

# ACKNOWLEDGMENT

With immense pleasure and deep sense of gratitude, we wish to express sincere thanks to our supervisor Prof. **RASHMI N**, Assistant Professor, **Dr. SUJITHA S**, Senior Associate Professor, Department of Electrical and Electronics Engineering, New Horizon College of Engineering, without his motivation and continuous encouragement, this Final Year Project - Phase II would not have been successfully completed.

We are grateful to the Chairman of New Horizon Educational Institution, **Dr. Mohan Manghnani** for motivating us to carry out research in the NHCE and for providing with infrastructural facilities and many other resources needed for our project work.

We are also thankful to our principal **Dr. Manjunatha** of NHCE for providing all the required facilities in completion of this project.

We express our sincere thanks to **Dr. M. Mahesh**, Professor & Head of the Department, Department of Electrical and Electronics Engineering, New Horizon College of Engineering for his kind words of support and encouragement.

We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date:

Place: Bengaluru



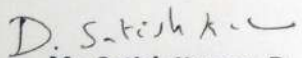
# NEW HORIZON COLLEGE OF ENGINEERING

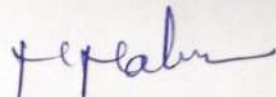
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Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	ANANDA.M. A K. PRASANNA KIRAN.P. GOWDA PRAJWAL RAIKAR
2	USN	1NH18EE702 1NH18EE722 1NH18EE723 1NH18EE734
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
6	Title of the Document	LORA BASED SMART CITIES AUTOMATION USING THE IoT
7	Similar Content(%)identified	14%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	23.06.2022
10	Checked by (Name with signature)	Mr. Satish Kumar. D
11	Specific remarks, if any :	No

We have verified the contents as summarized above and certified that the statement made above are true to the best of our knowledge and belief.

  
Mr. Satish Kumar. D  
Plagiarism - Coordinator

  
Dr. M. Mahesh  
HOD - EEE

# DECLARATION

We ANANDA.M.A, K.PRASANNA, KIRAN.P.GOWDA, PRAJWAL RAIKAR students of New Horizon College of Engineering hereby declare that this project work entitled "LORA BASED SMART CITIES AND HOME AUTOMATION USING THE IOT" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

We also declare that, to the best of our knowledge and belief, the work reported herein does not form part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion by any student.

ANANDA.M. A	1NH18EE702	[ Ananda MA ]
K. PRASANNA	1NH18EE722	[ K.prasanna ]
KIRAN.P. GOWDA	1NH18EE723	[ Kiranpgowda ]
PRAJWAL RAIKAR	1NH18EE734	[ Prajwal ]



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Outer Ring Road, Bellandur, Bengaluru – 560103

## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**20EEE84A Project - Phase II**

**Report on**

### **DESIGN OF SMART VEHICLE PARKING SYSTEM USING WIRELESS SENSOR NETWORKS FOR OFF-STREET PARKING**

Submitted in the partial fulfillment of the Final Year Project - Phase II

**Submitted by**

<b>MOHAMMAD USMAN KHAN</b>	<b>1NH18EE728</b>
<b>VISHAL GUPTA</b>	<b>1NH18EE755</b>
<b>FARHANULLAH SHARIEF</b>	<b>1NH18EE729</b>
<b>MOHAMMED SUFIYAN</b>	<b>1NH18EE730</b>

## **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“Jnana Sangama”, Belgaum: 590018**



2021-22



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Outer Ring Road, Bellandur, Bengaluru - 560103

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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MOHAMMED SUFIYAN 1NH18EE730

 Head of the Department Department of Electrical and Electronics Engineering New Horizon College of Engineering Ring Road, Kadubisanahalli, Bellandur, Bengaluru - 560103, Karnataka	 Name & Signature of the Project Guide Dr. MAHESH M	 Name & Signature of Head of the Department Dr. MAHESH M	 Signature of the Principal Dr. MANJUNATHA
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## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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2021-22





# NEW HORIZON COLLEGE OF ENGINEERING

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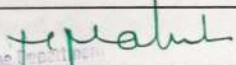
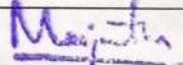
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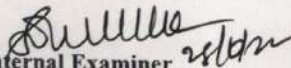
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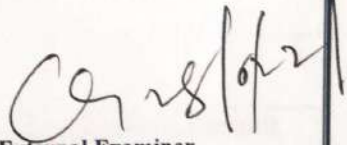
Certified that the Project work entitled **"Design of Smart Vehicle Parking System Using Wireless Sensor Networks for OFF-STREET Parking"** carried out by **Mohammad Usman Khan(1NH18EE728)**, **Vishal Gupta(1NH18EE755)**, **Farhanullah Sharif(1NH18EE729)**, **Mohammed Sufiyan(1NH18EE730)**, bonafide Student(s) of New Horizon College of Engineering submitted the report in the partial fulfilment for the award of Bachelor of Engineering in **Department of Electrical and Electronics Engineering, New Horizon College of Engineering** of Visvesvaraya Technological University, Belgaum during the Year 2021-22.

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Name & Signature of the Project Guide	Name & Signature of Head of the Department	Signature of the Principal
Dr. MAHESH M	Dr. MAHESH M	Dr. MANJUNATHA

### SEMESTER END EXAMINATION

  
Internal Examiner

  
External Examiner



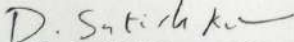
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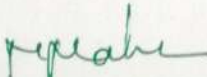
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## LIBRARY & INFORMATION CENTRE CERTIFICATE ON PLAGIARISM CHECK

1	Name of the Student	MOHAMMAD USMAN KHAN FARHANULLAH SHARIEF MOHAMMAD SUFIYAN VISHAL GUPTA
2	USN	1NH18EE728 1NH18EE729 1NH18EE730 1NH18EE755
3	Course	UG
4	Department	EEE
5	Mini Projects/Project Reports/ Ph.D Synopsis/ Ph.D Thesis/ Paper Publication (N/I)	Project – Phase 2 Report
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7	Similar Content(%)identified	15%
8	Acceptable maximum limit (%) of similarity	25%
9	Date of Verification	23.06.2022
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HOD - EEE

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We wish to extend our profound sense of gratitude to my parents for all the sacrifices they made during our project and providing us with moral support and encouragement whenever required.

Date: 20-06-2022

Place: Bengaluru

# DECLARATION

## TABLE OF CONTENTS

We **Mohammad Usman Khan, Vishal Gupta, Farhanullah Sharif, Mohammed Sufiyan** students of New Horizon College of Engineering hereby declare that this project work entitled "**DESIGN OF SMART VEHICLE PARKING SYSTEM USING WIRELESS SENSOR NETWORK FOR OFF STREET PARKING**" is an original and bonafide work carried out by me at New Horizon College of Engineering in partial fulfillment of Bachelor of Engineering in Electrical and Electronics Engineering of Visvesvaraya Technological University, Belgaum.

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MOHD USMAN KHAN INH18EE728

[  ]

VISHAL GUPTA INH18EE755

[ Vishal Gupta ]

FARHANULLAH SHARIF INH18EE729

[  ]

MOHD SUFIYAN INH18EE730

[ M. Sufiyan ]