FIELD VISIT REPORT

ON

"AC CONSTRUCTION "

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

Roll No. 01-21

Under the Guidance of

Prof. Rashmi Pantawane

Education to Eternity

Department of Civil Engineering

JD College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year 2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**AC Construction** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

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Forwarded to: HoD

Internship Coordinator, CE

HoD, Civil

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SR NO	UNIQUE CODE	STUDENTS NAME
1	JBE17693	SAURABH RAJKUMAR RAUT
2	JBTECH18334	NISHANK SUNIL KARARE
3	JBTECH19001	HARSHAL PRAVEEN CHOUDHARY
4	JBTECH19002	SHILPA MILIND GAJBHIYE
5	JBTECH19003	BADAL PRADIP BANSOD
6	JBTECH19004	PRAFULL BHISHMADAS VAISHNAV
7	JBTECH19005	SAYAL KHUSHABRAO SHENDE
8	JBTECH19006	MANISH NAMUDEO NAGPURE
9	JBTECH19007	VAIBHAV BHIMESH MESHRAM
10	JBTECH19008	ROHIT ASHOK DEKATE
11	JBTECH19009	SHUBHAM RAJKUMAR LONARE
12	JBTECH19010	PRASHIK SUNIL MESHRAM
13	JBTECH19061	ANUSHKA SUDHIR BAGDE
14	JBTECH19064	SAGAR ASHOK RAHANGDALE
15	JBTECH19099	PRATIK HEMANT LADE
16	JBTECH19101	SAURABH ASHOK DONGRE
17	JBTECH19119	VINIT PRUTHVIRAJ GHATBANDHE
18	JBTECH19120	GANESH RAVINDRA HIREKHAN
19	JBTECH19121	GURUCHARAN YOGRAJ GAUTAM
20	JBTECH19122	TUSHAR YOGRAJ FUNDE
21	JBTECH19123	TUSHAR VINOD VAIDYA

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FIELD VISIT REPORT

ON

"SB CONSTRUCTION"

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

Roll No. 22-42

Under the Guidance of

Prof. Atika Ingole

Education to Eternity

Department of Civil Engineering

JD College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**SB Construction**"in the subject **Civil Engineering** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

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HoD, Civil

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SR NO	UNIQUE CODE	STUDENTS NAME
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23	JBTECH19151	HARSH BABBI MATHIYA
24	JBTECH19185	BHOJRAJ NILKANTH ZATALE
25	JBTECH19189	SHREYA ARVIND RAMTEKE
26	JBTECH19190	SEJAL SUGAT NARANJE
27	JBTECH19191	PRACHI HANMANTRAO KURHADE
28	JBTECH19192	DHANSHREE BHAGWAT NANHE
29	JBTECH19193	AKANKSHA RAMDAS WASNIK
30	JBTECH19194	SHUBHAM RAMDAS DHORE
31	JBTECH19195	KHUSHI NARENDRA MESHRAM
32	JBTECH19196	PRADNYA YADAV KAPGATE
33	JBTECH19197	PRINCE ANIL YADAV
34	JBTECH19198	PALAK RAJESH SHENDE
35	JBTECH19199	ARPAN PRASHANT DAFAR
36	JBTECH19200	SAMIR GUNIRAM RAHANGADALE
37	JBTECH19201	SHREYASH CHANDRASHEKHAR HADGE
38	JBTECH19202	CHETAN RAJBHUSHAN YERPUDE
39	JBTECH19203	PRADNYA GANPAT GADMADE
40	JBTECH19204	VISHVADIP KHAMDEO BADOLE
41	JBTECH19222	GIRISH NIRANJAN CHAVHAN
42	JBTECH19223	PRAJWAL ARUN GAWATE

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FIELD VISIT REPORT

ON

"VT ENTERPRISES"

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

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Under the Guidance of

Prof. Nilesh Pal

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Year2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**Vt Enterprises**"in the subject **Civil Engineering** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

Supervisor/Manager/Incharge
Forwarded to: HoD

Internship Coordinator, CE

HoD, Civil

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SR NO	UNIQUE CODE	STUDENTS NAME
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44	JBTECH19265	YASH MANOJ NANDEKAR
45	JBTECH19309	ABHISHEK SUDARSHAN GONDNE
46	JBTECH19361	KUNAL JITENDRA AMBULKAR
47	JBTECH19413	KUNAL RAJENDRA RAKHUNDE
48	JBTECH19418	PAVAN RAMESH NAGTHANE
49	JBTECH20499	SHUBHAM ARUNRAO KHADSE
50	JBTECH20503	KUNAL GANESH CHOPADE
51	JBTECH20508	ANKIT SURAJ KHOBRAGADE
52	JBTECH20512	POOJA SANJAAY SONKUSALE
53	JBTECH20523	KEWAL DAMODAR GULABE
54	JBTECH20524	YASIR HUSSAIN ABID HUSSAIN
55	JBTECH20527	HIMANSHU GAUTAM MUNJEWAR
56	JBTECH20528	TEJAS RUPESH KADE
57	JBTECH20531	PRATIK ANILRAO DHAWALE
58	JBTECH20534	ROHIT DILIP DONGRE
59	JBTECH20535	FAYEZA ANAM RIYAZ MOHAMMAD KHAN
60	JBTECH20538	JITESH RAJENDRA BURADKAR
61	JBTECH20540	SUNISH GOPAL VERMA
62	JBTECH20541	ADITYA UMRESH SAHU
63	JBTECH20543	KISHAN ASHOK WATWANI
64	JBTECH20545	SHIVANI MANOJ CHAHANDE

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FIELD VISIT REPORT

ON

"Gaurav Construction "

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

Roll No. 01-21

Under the Guidance of

Prof. Atika Ingole

Education to Eternity

Department of Civil Engineering

JD College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year 2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**Gaurav Construction** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

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Internship Coordinator, CE

HoD, Civil

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SR NO	UNIQUE CODE	STUDENTS NAME
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3	JBTECH18413	ANIKET KARTARAM CHAUDHARI
4	JBTECH18048	ANIKET VISHNU MARBATE
5	JBTECH19168	ANKIT NASHIK MOTGHARE
6	JBTECH18098	APEKSHIT KIRTIKUMAR CHAVHAN
7	JBTECH18016	ASHISH GOPAL SAKHARWADE
8	JBE17030	ASHISH INDRARAJ HARINKHEDE
9	JBTECH18150	ASHWINI SHILWAN DOKE
10	JBTECH18088	ATIT ANIL RAGHUWANSHI
11	JBTECH18077	CHAITANYA BHASHKAR KAPGATE
12	JBTECH18196	CHAITANYA PRITHVIRAJ SAHARE
13	JBTECH18002	CHHAYA GAJANAN KORAM
14	JBE17084	DIPAK KISHOR KURZEKAR
15	JBTECH18296	DIVYA RAMESH KANNURI
16	JBTECH18285	DRAVID CHANDRAPRAKASH SHENDE
17	JBTECH18262	HARSHA MORESHWAR DOYE
18	JBTECH19156	HARSHAL AVINASH GAIDHANE
19	JBTECH19373	HIMANSHU VINOD RAMTEKKAR
20	JBTECH18003	HRITIK RAMBHAU BAGDE
21	JBTECH19368	HRITIKA VILAS DESHBHRATAR

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FIELD VISIT REPORT

ON

"BRIGHT MONEY TECHNOLOGY"

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

Roll No. 22-42

Under the Guidance of

Prof. Atul Gautam

Education to Eternity

Department of Civil Engineering

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Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**Bright Money Technology**"in the subject **Civil Engineering** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

Supervisor/Manager/Incharge
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SR NO	UNIQUE CODE	STUDENTS NAME
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23	JBTECH18052	KUNAL RITIKUMAR SHENDE
24	JBTECH18010	LOCHAN ABHIMAN DIWATE
25	JBTECH18290	MAHESH JAYDEEP RATHOD
26	JBTECH19283	MAHESH SAOJI MESHRAM
27	JBTECH18186	MAYUR MANOJ SURYAWANSHI
28	JBTECH18008	NEEL DINESH PATEL
29	JBTECH19186	NIKHIL ARVIND RAMTEKKAR
30	JBTECH18001	NIKHIL ASHOK MISHRA
31	JBTECH18295	NIKHIL JAYANT MESHRAM
32	JBTECH19323	NIKHIL RAJKISHOR SHENDE
33	JBTECH18342	NIKHITA NARENDRA BARAPATRE
34	JBTECH18183	NIKHITA TILAKCHAND KHANDWAYE
35	JBE17292	NIKIL DUDHRAM KOTANGALE
36	JBTECH18006	PALLAVI SHANKAR DANDARE
37	JBTECH18057	PAYAL MALOJI RAMTEKE
38	JBTECH18011	PAYAL VASANTA NAGPURE
39	JBTECH18202	PRACHI MORESHWAR WASNIK
40	JBTECH19396	PRADNYA PRAKASH SONONE
41	JBTECH18095	PRAJWAL BIHARI LANDGE
42	JBTECH18097	PRAJWAL MAHENDRA KAPSE

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FIELD VISIT REPORT

ON

"MANWANI BUILDERS"

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Civil Engg

Submitted by

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Under the Guidance of

Prof. Shakil Khan

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Year2020-21

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CERTIFICATE

This is to certify that the field visit report on, "**Manwani Builders**"in the subject ***Civil Engineering*** in the faculty of Science and Technology submitted by following students to DBATU ,Lonere for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision.

Supervisor/Manager/Incharge
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HoD, Civil

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SR NO	UNIQUE CODE	STUDENTS NAME
43	JBTECH18188	PRAJWAL MANOHAR VIDHATE
44	JBTECH18009	PRAKASH GOPICHAND MADAME
45	JBTECH18190	PRANJALI PRAMODRAO GOTE
46	JBTECH18287	PUNYA CHARAN PRADHAN
47	JBTECH18377	RAJ KAILAS SAHARE
48	JBTECH18005	RAKSHA DEVESH SWAMI
49	JBTECH19429	RENU SHRIKRISHNA SAHANI
50	JBTECH18292	RIDDHI BHOJRAJ HATWAR
51	JBTECH18096	RITIK SHANKAR TUPE
52	JBTECH19286	ROSHANI ASHOK DAKHARE
53	JBE17112	ROSHANI RAJESH DHURVE
54	JBTECH18050	SAHIL PURUSHOTTAM RODGE
55	JBTECH19287	SANTOSH RAMDASHJI BHADE
56	JBTECH18343	SHAILESH YASHWANT LADE
57	JBTECH18094	SHARAD GOPINATH GABHANE
58	JBTECH18289	SHEKHAR MAHESH SHIWANKAR
59	JBTECH18330	SHIVANI YASHAWANT TADAM
60	JBE17688	SHRIKANT PANDHARI GAIKWAD
61	JBTECH18144	SHUBHAM SACHIN SHEVDE
62	JBTECH18291	SIDDHI BHOJRAJ HATWAR
63	JBE17703	SONALI MORESHWAR DHOKE
64	JBTECH18338	SUJIT DUDHARAM AKARE
65	JBTECH18293	SUKHADAS PANDIT CHAVHAN
66	JBTECH19285	SURAJ MUKESH SHAMBHARKAR
67	JBTECH19377	TANMAY PANKAJ MOOL
68	JBE17629	UJJWAL ANIL CHOUDHARY
69	JBTECH19179	VAISHALI MAHADEO DESHPANDE
70	JBE15630	VIJAY BHIMRAO MUJMULE
71	JBE16517	VISHAL DNYANESHWAR BHENDE

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CASE STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH COAL FLY ASH IN SELF COMPACTING CONCRETE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Specialization

1. ROHIT SANJAY TUMANE
2. NIKITA TEJRAM JANBANDHU
3. RUPALI RAMTEKE
4. SANDHYA SURYAWANSHI
5. POOJA GADEKAR

Dr. Babasaheb Ambedkar Technological University

Under the Guidance of

DR. SNEHAL ABHYANKAR

Education to Eternity

CIVIL ENGINEERING DEPARTMENT

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

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DECLARATION

We hereby declare that the work presented in this project report entitled, **"CASE STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH COAL FLY ASH IN SELF COMPACTING CONCRETE"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of DR. SNEHAL ABHYANKAR, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Name of Students

1. Rohit Sanjay Tumane
2. Nikita Tejram Janbandhu
3. Rupali Ramteke
4. Sandhya Suryawanshi
5. Pooja Gadekar

Place: Nagpur

Date: 10/08/2021

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CERTIFICATE

This is to certify that the project report entitled, **"CASE STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH COAL FLY ASH IN SELF COMPACTING CONCRETE"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by Rohit Tumane, Nikita Janbandhu, Rupali Ramteke, Sandhya Suryawanshi, Pooja Gadekar to **Dr. Babasaheb Ambedkar Technological University, Lonere.** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Dr. Snehal Abhyankar
(Project Guide)
Department of Civil Engineering

Forwarded to:

Dr. Snehal Abhyankar
(Project Cordinator)
Department of Civil Engineering

Prof. Atika Ingole
(Head of The Department)
Department of Civil Engineering

Dr. S.V. Sonekar
(Principal)
JDCOEM, NAGPUR

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **CASE STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH COAL FLY ASH IN SELF COMPACTING CONCRETE** is approved work

1. **ROHIT SANJAY TUMANE**
2. **NIKITA TEJRAM JANBANDHU**
3. **RUPALI RAMTEKE**
4. **SANDHYA SURYAWANSHI**
5. **POOJA GADEKAR**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University**, Lonere during the academic year 2020-2021.

Dr. Snehal Abhyankar
(Project Guide)
Department of Civil Engineering

Prof. Atika Ingole
(Head of The Department)
Department of Civil Engineering

Project Examination held on 30/06/2021

Dr. Snehal Abhyankar
(Internal Examiner)
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Prof. Atika Ingole
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Department of Civil Engineering

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INDEX

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CONTENTS AT GLANCE

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ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We express our sincere gratitude towards **Dr. S.V. Sonekar**, Principal, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. Atika Ingole**, Head, Department of **Civil Engineering** J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to express a deep sense of gratitude and thanks profusely to our Guide and Project coordinator **Dr. Snehal Abhyankar** Department of **Civil Engineering**, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of **Civil Department**, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

1. ROHIT SANJAY TUMANE
2. NIKITA TEJRAM JANBANDHU
3. RUPALI RAMTEKE
4. SANDHYA SURYAWANSHI
5. POOJA GADEKAR

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LIST OF FIGURES

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LIST OF TABLES

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ABBREVIATIONS

OPC	Ordinary Portland cement
SF	Silica fume
SCMs	Supplementary cementitious materials
ACI	American Concrete Institute
PPC	Portland Pozzolana cement
IS	Indian Standards
CSH	Calcium Silicate Hydrate
CH	Calcium Hydrate
N	Newton
FA	Fine Aggregate
w/c	Water cement ratio
cu.m	Cubic meter

SYMBOLS

C	Compressive strength
S	Splitting tensile strength
F	Flexural strength
P	Load in Newton
l	Length of specimen
fck	Characteristic compressive strength at 28 days
d	Diameter of specimen
b	Breadth of specimen
h	Height of specimen
W	Amount of Water absorbed in gm
A	Area of specimen in contact with water
t	Time in seconds
V	Total volume of specimen
G	Specific Gravity
f'ck	Target average compressive strength at 28 days
s	Standard Deviation

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APPENDIX

CONVERSION FACTORS	
1 inch	2.54 cm
1 foot	0.305 m
1 pound	0.436 kg
1 ton	0.907 tons
1 psi	6.895 kPa
1 psf	0.475 kPa

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ABSTRACT

This project covered major aspect of concrete mix design as the quality control measure of concrete production, as per the Indian Standard Code IS: 10262-1982. It is aimed at highlighting the important of designed concrete as compared to an ordinary ratio analysed concrete in concrete production for any civil/structural concrete work. It equally include the whole laboratory test analysis, to determine the physical and geotechnical properties of the materials needed for the mix design in order to attain the required data for the design procedure, in accordance to the parent material types and location, and the specific density of the designed concrete, that will be suitable, adoptable, durable, economical, workable and generally safe for the structural design objective of the weather condition in any specified locality. The design covered concrete grade 20N/mm2, and were designed to attain the required strength grade after 7days, 14 days and 28 days of curing specially with water as the minimum strength. Basically the designs were done by replacing glass powder as cement with different percentage by 10%, 20%, 30%, 40%. It was equally considered as a factor that all the grade of concrete designed for, should achieve 65% strength after been cured for seven days in water. The individual result of the design mix were adequately presented and have shown that generally mix design of concrete before production as measure of quality control of concrete work is very important in any civil project either for Government and individual. Quality control should be applicable, to control structural failure.

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VALORIZATION OF WASTE PLASTIC IN CONCRETE MIX (VWPCM)

A Project report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Civil Engineering.

SUBMITTED BY: -

Abhay Ohekar

Pranay Borkar

Deepika Kathoute

Achal Wadhai

Chandan Masram

Shubham Mankar

UNDER THE GUIDANCE OF

Prof. Atika Ingole

Education to Eternity

Department of Civil Engineering

J D College of Engineering & Management, Nagpor-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

At: Khandala, Post- Valni, Kalmeshwar Road, Near Fetri, Nagpur

YEAR 2020-21

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DECLARATION

We hereby declare that the work presented in this project report entitled, **"VALORIZATION OF WASTE PLASTIC IN CONCRETE MIX (VWPCM)"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Atika Ingole** Department of Civil Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: NAGPUR

Date: 05/08/2021

Name of Students

Abhay Ohekar

Pranay Borkar

Deepika Kathoute

Achal Wadhai

Chandan Masram

Shubham Mankar

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CERTIFICATE

This is to certify that the project report entitled, **"VALORIZATION OF WASTE PLASTIC IN CONCRETE MIX (VWPCM)"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by Abhay Ohekar, Pranay Borkar, Deepika Kathoute, Achal Wadhai, Chandan Masram, Shubham Mankar, to **Dr. Babasaheb Ambedkar Technological University Lonere.** the award of the degree of **Bachelor in Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Atika Ingole)

Department of Civil Engineering

Forwarded to:

for, Sanghai

(Dr. Snehal Abhayankar)

Project Coordinator

(Prof. Atika Ingole)

Head of the Department

Civil Engineering

(Dr. S. V. Sonekar)

Principal

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Principal
J.D. College of Engineering & Management
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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"VALORIZATION OF WASTE PLASTIC IN CONCRETE MIX (VWPCM)"** is approved work done by

Abhay Ohekar
Pranay Borkar
Deepika Kathoute
Achal Wadhai
Chandan Masram
Shubham Mankar

in partial fulfillment of the requirements for the award of the degree of **Bachelor in Technology** in **Civil Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere.** during the academic year 2020-2021

Prof. Atika Ingole
Guide

Prof. Atika Ingole
Head of the Department

Project Examination held on 30/6/2021

Internal Examiner/ Guide

T.S. Jungare
External Examiner

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ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Atika Ingole**, Head, Department of **Civil Engineering** J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Dr. Snehal Abhayankar** Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Atika Ingole,** Department of civil Engineering, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the Civil Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Abhay Ohekar
Pranay Borkar
Deepika Kathoute
Achal Wadhai
Chandan Masram
Shubham Mankar

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INDEX

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Content at glance

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List of figures

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ABBREVATION

ABS	Acrylonitrile butadiene styrene
BBP	Benzylbutyl phthalate
DBP	Di-n-butyl phthalate
DEHP	Di(2-ethylhexyl) phthalate
DIDP	Diisodecyl phthalate
DNIP	Diisononyl phthalate
DnOP	Di(n-octyl) phthalate
HDPE	High Density Polyethylene
HIPS	High impact polystyrene
LDPE	Low Density Polyethylene
PA	Polyamides
PC	Polycarbonate
PC/ABS	Polycarbonate/Acrylonitrile Butadiene Styrene
PCA	Plastic Coarse Aggregate
PE	Polyethylene
PE/ABS	Polyethylene/Acrylonitrile Butadiene Styrene
PET	Polyethylene terephthalate
PES	Polyester
PP	Polypropylene
PS	Polystyrene
PU	Polyurethanes
PVC	Polyvinyl Chloride
PVDC	Polyvinylidene chloride
NCA	Natural Coarse Aggregate
W/C	Water Cement Ratio

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ABBREVATION

ABS	Acrylonitrile butadiene styrene
BBP	Benzylbutyl phthalate
DBP	Di-n-butyl phthalate
DEHP	Di(2-ethylhexyl) phthalate
DIDP	Diisodecyl phthalate
DNIP	Diisononyl phthalate
DnOP	Di(n-octyl) phthalate
HDPE	High Density Polyethylene
HIPS	High impact polystyrene
LDPE	Low Density Polyethylene
PA	Polyamides
PC	Polycarbonate
PC/ABS	Polycarbonate/Acrylonitrile Butadiene Styrene
PCA	Plastic Coarse Aggregate
PE	Polyethylene
PE/ABS	Polyethylene/Acrylonitrile Butadiene Styrene
PET	Polyethylene terephthalate
PES	Polyester
PP	Polypropylene
PS	Polystyrene
PU	Polyurethanes
PVC	Polyvinyl Chloride
PVDC	Polyvinylidene chloride
NCA	Natural Coarse Aggregate
W/C	Water Cement Ratio

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ABSTRACT

This study is especially concerned with conducting an experimental investigation for testing the suitability of plastic waste as a partial replacement in a concrete mix. within the present scenario, no construction activity is often imagined without using concrete. Concrete is that the most generally used artifact in the housing industry. because it is widely used for the construction of varied structures, the economy depends upon the value of fabric utilized in making concrete. On the opposite hand, thanks to rapid urbanization and industrialization everywhere on the planet, huge quantities of plastic waste are being generated. The disposal of those wastes may be a very significant issue because it requires huge space and also it causes environmental pollution. during this situation, the housing industry requires finding cost-effective materials for increasing the strength of concrete. So, this project it's addressed the likelihood of using plastic waste because of the partial replacement of fine aggregate in the concrete mix. during this perspective, it's aimed toward comparing the properties of conventional concrete mix with the concrete mix prepared using Shredded plastic waste. Concrete with 0.5%, 1.0%, 2%, 4% and 6 June 1944 shredded plastic is ready. relative density, fineness, setting time, sieve analysis, fineness modulus tests on cement, coarse and fine aggregates are performed during this study. Cubes and beams are forged for M20 grade concrete with and while not sliced plastics and tests on concrete are conducted. As per IS 10262-2009 mix design code, mix design is completed. the quality mechanical properties of concrete like compressive strength, flexural land strength is tested and compared with the results of an ordinary specimen. Higher compressive and flexural strength were observed on a replacement of fine aggregate with shredded plastic.

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UTILIZATION OF PLASTIC WASTE (PET) AS PARTIAL REPLACEMENT OF COARSE AGGREGATES IN CONCRETE

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology
In
Civil Engineering

Submitted by

Rohit Khobragade

Krunal Nikose

Sonam Kale

Sandhya Ilame

Akshay Chakole

Prajjwal Munne

Under the Guidance of

Prof. Shital Navghare

Education to Eternity

Department of Civil Engineering
J D College of Engineering and Management, Nagpur-441501
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

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DECLARATION

We hereby declare that the work presented in this project report entitled, "**Utilization of Plastic Waste (PET) as Partial Replacement of Coarse Aggregates in concrete**" in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Shital Navghare**, Civil Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of Students

Rohit Khobragade
Krunal Nikose
Sonam Kale
Sandhya Ilame
Akshay Chakole
Prajjwal Munne

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CERTIFICATE

This is to certify that the project report entitled **"Utilization of Plastic Waste (PET) as Partial Replacement of Coarse Aggregates in concrete"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted By **Rohit Khobragade, Krunal Nikose, Sandhya Ilame, Sonam Kale Akshay Chakole, Prajjwal Munne** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Shital Navghare
Department of Civil Engineering

Forwarded to:

Dr. Snehal Abhyankar
Project Coordinator

Prof. Atika Ingole
Head of the Department
Department of Civil Engineering

Dr. Shrikant V. Sonekar
Principal

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report **"Utilization of Plastic Waste (PET) as Partial Replacement of Coarse Aggregates in concrete"** is approved work done by

Name of students
Rohit Khobragade
Krunal Nikose
Sandhya Ilame
Sonam Kale
Akshay Chakole
Prajjwal Munne

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering Branch** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Shital Navghare
Guide

Prof. Atika Ingole
Head of Department

Project Examination held on

Prof. Shital Navghare
Internal Examiner/ Guide

External Examiner

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INDEX

CONTENTS AT GLANCE

Scanned with OKEN Scanner

Scanned with OKEN Scanner

Scanned with OKEN Scanner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. Shrikant V. Sonekar** , Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. Shrikant V. Sonekar**, Vice Principal, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. Atika Ingole**, Head, Department of Civil Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Dr. Snehal Abhyankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shital Navghare**, Department of Civil Engineering, J D College of Engineering & Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of Civil Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

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Rohit Khobragade
Krunal Nikose
Sandhya Ilame
Sonam Kale
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LIST OF FIGURES

Scanned with OKEN Scanner

LIST OF TABLES

Scanned with OKEN Scanner

ABBREVIATIONS AND SYMBOLS

PET	Polyethelyne Terepthlete
LDPE	Low Density Polythylene
HDPE	High Density Polyethylene
PMC	Polymer Modified Concrete
SG	Specific Gravity
MSW	Municipal Solid Waste
ACI	American Concrete Institute
PPCC	Polymer Portland Cement Concrete
LMC	Latex Modified Concrete
PMMA.	Polymethyl Methacrylate

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ABSTRACT

In the recent years, usage of plastic in various forms has presented the huge challenge for protection and conversation of environment. The plastic consumed in various forms becomes waste after the use. It requires a huge area of land to accommodate and process such a huge amount of waste as it cannot be recycled fully in one go. The solution which can reduce the effect of plastic waste material over the ecological problems and saving the environment is it partial utilization. The use of plastic waste will not only reduce the aggregate cost but will also provide the enhanced strength for various structures and roads. It will also reduce the cost for storing the waste and will help in saving the energy. Plastic waste (PET) is a semi crystalline resin which is colorless and highly flexible in its original form. It can be semi rigid too rigid on the basis of process adopted for its recycling. It shows resistance to impact, has minimal effect of moisture, alcohols and solvents and has good dimensional stability. Usually these wastes are non-biodegradable and cab be a partial replacement of the coarse or fine aggregates. In this paper we present the study on the utilization of PET waste particles as fine and coarse aggregates in concrete with a certain replacement percentage. Compressive strength, Tensile strength and Flexural strength Concrete with and without E- waste plastic as aggregates was observed which exhibits a good strength

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Study on Use of Ground Granulated Blast Furnace Slag by partially replacing cement in concrete

A Project Report was submitted in partial fulfilment of the requirements for the award

Of the degree of

Bachelor of Technology

In

Specialization

Submitted by

Mr. Boaz Barve
Mr. Shashank Moon
Mr. Aman Rangari
Miss. Pooja Bansod
Miss. Nikita Tembhurne

Dr. Babasaheb Ambedkar Technological University

Under the Guidance of
Prof. Tejaswini Junghare

Education to Eternity

Department of Civil Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Year 2020 - 2021

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DECLARATION

We hereby declare that the work presented in this project report entitled, **Study on Use of Ground Granulated Blast Furnace Slag by partially replacing cement in concrete** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Tejaswini Junghare** Department of Civil, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 27/07/2021

Name of Students

Mr. Boaz Barve
Mr. Shashank Moon
Mr. Aman Rangari
Miss. Pooja Bansod
Miss. Nikita Tembhurne

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CERTIFICATE

This is to certify that the project report entitled, **"Study on Use of Ground Granulated Blast Furnace Slag by partially replacing cement in concrete"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by t o Mr. **Boaz Barve, Mr. Aman Rangari, Mr. Shashank Moon, Miss. Pooja Bansod, Miss. Nikita Tembhurne to Dr. Babasaheb Ambedkar Technological University, Lonare.** For the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of degree.

(Prof. Tejaswini Junghare)
Guide of Project

Forwarded to:

(Dr. Snehal Abhayankar)
Project Coordinator

(Prof. Atika Ingole)
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J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Study on Use of Ground Granulated Blast Furnace Slag by partially replacing cement in concrete** is approved work done by

1. Mr. Boaz Barve
2. Mr. Shashank Moon
3. Mr. Aman Rangari
4. Miss. Pooja Bansod
5. Miss. Nikita Tembhurne

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Technology University, Nagpur during** the academic year 2020_- 2021

Prof. Tejaswini Junghare
Guide of Project

Prof Atika Ingole
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Project Examination held on 29/06/2021.

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Scanned with OKEN Scanner

INDEX

Scanned with OKEN Scanner

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ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Atika Ingole** Head of Department of **Civil Engineering** J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Dr. Snehal Abhayankar,** Project Coordinator, J D College of Engineering & Management, and Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Tejaswini Junghare,** Department of **Civil Engineering**, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Civil Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

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Mr. Boaz Barve
Mr. Shashank Moon
Mr. Aman Rangari
Miss. Pooja Bansod
Miss. Nikita Tembhurne

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LIST OF FIGURES

Scanned with OKEN Scanner

LIST OF TABLES

Scanned with OKEN Scanner

ABBREVIATIONS

GGBS	Ground Granulate Blast Furnace Slag
OPC	Ordinary Portland Cement
ACI	American Concrete Institute
PCC	Plain Cement Concrete
RCC	Reinforced Cement Concrete
CSH	Calcium Silicate Hydrate
UPM	Universal Testing Machine

SYMBOLS

CO_2	Calcium Oxide
Fc	Compressive Strength
Fb	Flexural Strength

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ABSTRACT

One of the most important components in concrete manufacturing is ordinary Portland cement, which is made of natural raw materials such as lime stone, chalk, and clay. In highly developed countries, infrastructure projects, including construction, large-scale irrigation, and road construction, are underway, constructed or completed, and we need a lot of cement. Unfortunately, cement production is related to the large amount of carbon dioxide released into the atmosphere, which is a major factor in the greenhouse effect and global warming. It is the main component of concrete, and it is inevitable to find another material or partially replace it with another material, which is very useful in concrete manufacturing. Ground granulated blast furnace slag GGBS is an astringent material that can be added to cement concrete as a partial cement substitute without compromising its strength and durability, thereby reducing cement production and reducing carbon dioxide emissions. The use of GGBS in concrete cannot only reduce the environmental impact of consuming materials that are generally considered waste, but also reduce construction costs. This article describes the use of slag sand (GGBS) in concrete as a partial cement substitute.

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CONSTRUCTION USING LIME AND FLY ASH MORTAR AND COMPARING IT WITH PCC

A Project Report submitted in partial fulfilment of the requirements

for the award of the degree of

Bachelor of Technology

In

Civil Engineering

Submitted by

Ayush Chuckerbutty

Nikhil Gahukar

Aman Chaure

Pooja Gavhare

Under the Guidance of

Prof. Shahrukh Z. Kureshi

Education to Eternity

Department of Civil Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

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DECLARATION

We hereby declare that the work presented in this project report entitled, **"Construction Using Lime and Fly Ash Mortar and Comparing It with PCC"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Shahrukh Z. Kureshi, Department of Civil Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 05/08/2021

Name of Students

Ayush Chuckerbutty

Nikhil Gahukar

Aman Chaure

Pooja Gavhare

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CERTIFICATE

This is to certify that the project report entitled, **"Construction Using Lime and Fly Ash Mortar and Comparing It with PCC"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by **Ayush Chuckerbutty, Nikhil Gahukar, Aman Chaure** and **Pooja Gavhare** to **Dr Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **CONSTRUCTION USING LIME AND FLY ASH MORTAR AND COMPARING IT WITH PCC** is approved work done by

I. Ayush Chuckerbutty

II. Nikhil Gahukar

III. Aman Chaure

IV. Pooja Gavhare

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Shahrukh Z. Kureshi
Guide

Prof. Atika Ingole
Department of Civil Engineering

Project Examination held on 30/06/2021

Internal Examiner/ Guide

External Examiner

Scanned with OKEN Scanner

INDEX

CONTENTS AT GLANCE

Scanned with OKEN Scanner

Scanned with OKEN Scanner

Scanned with OKEN Scanner

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D Collegeof Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from Prof. Atika Ingole, Head, Department of Civil Engineering, J D College of Engineering & Management,Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Dr. Snehal Abhyankar, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Shahrukh Z. Kureshi, Department of Civil Engineering, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Civil Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

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LIST OF FIGURES

Scanned with OKEN Scanner

LIST OF TABLES

Scanned with OKEN Scanner

ABSTRACT

The advent of 21st century has brought with it a huge incease in the demand for advanced and modern infrastrucre at a very quick rate. The demand for such infrastructure has also led to a increase in the manufacture of construction materials. But this rapid increase has led the increase of pollution at a very alarming rate. The amount of CO^2 generated from the manufacture and use of such materials is a very big concern.

In order to reduce this dangerous effect, an alternative method of construction is needed. The solution to this can be found in the construction of old ancient structures which used lime mortar as a construction material. These structures were extremely durable and can be found still standing till this date which indicates the quality of the material used. Hence it can be implied that if this lime mortar is modified to be used in our modern construction, then it can serve as a viable replacement to cement in structures without much trouble. To modify it and reduce its well-known disadvantages the use of fly ash can be employed.

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EFFECT OF POLYPROPYLENE FIBER AND GLASS FIBER ON CONCRETE.

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Civil Engineering

Submitted By:-

Laxman Kulsange
Harsh Satpude
Nikita Padole
Amogh Bawankule
Avinash Narnaware

Under the Guidance:-

Prof. Tejaswini Junghare

Education to Eternity

Civil Engineering Department
J D College of Engineering and Management, Nagpur-441501
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

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DECLARATION

We hereby declare that the work presented in this project report entitled, **"Effect of Polypropylene Fiber and Glass Fiber in Concrete"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Tejaswini Junghare**, Civil Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 5/08/2021

Name of Students:-

Laxman Kulsange
Harsh Satpude
Nikita Padole
Amogh Bawankule
Avinash Narnaware

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CERTIFICATE

This is to certify that the project report entitled, **"Effect of Polypropylene fiber and Glass Fiber in Concrete"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by **Laxman Kulsange, Harsh Satpude, Nikita Padole, Amogh Bawankule, Avinash Narnaware** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Tejaswini Junghare
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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Effect of Polypropylene Fiber and Glass Fiber in Concrete** is approved work done by

Laxman Kulsange

Harsh Satpude

Nikita Padole

Amogh Bawankule

Avinash Narnaware

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering Branch** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Tejaswini Junghare
Guide

Prof. Atika Ingole
Head of the Department

29/06/2021

Project Examination held on

Prof. Tejaswini Junghare
Internal Examiner/ Guide

External Examiner

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INDEX

CONTENTS

Scanned with OKEN Scanner

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ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. Shrikant Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Atika Ingole**, Head, Department of Civil Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Dr. Snehal Abhyankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Tejaswini Junghare**, Department of Civil Engineering, J D College of Engineering &Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of Civil Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the Students:-

Laxman Kulsange

Harsh Satpude

Nikita Padole

Amogh Bawankule

Avinash Narnaware

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LIST OF FIGURES

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ABSTRACT

Concrete could be a material and wide utilized in everywhere the globe sort of a stone with fascinating durability and high compressive strength. Concrete is employed as a construction material however it's a drawback that's bearableness suggests that concrete has the comparatively low enduringness and poor resistance to crack gap and propagation and weak intension.

Fiber is such a reinforcing material. Fibers are tiny items of reinforcing material possessing sure characteristics and properties. Fibers are thought of as a construction material to reinforce the flexural and tensile strength. Fibers are typically used in concrete to regulate cracking due to plastic shrinkage and to drying shrinkage. They conjointly cut back the porosity of concrete and therefore reduce hurt of water. Some varieties of fibers manufacture larger impact, abrasion, and shatter resistance in concrete.

FRC is being employed for the development and repair of dams and alternative hydraulic structures to produce resistance to cavitations and severe erosion caused by the impact of huge Waterboro Debris. These embody machine frames, lighting poles, water and oil tanks and concrete repairs. Fiber-reinforced concrete is usually used for Ground-level applications, into to sidewalk sand building floors, basement foundations, building pillars, support beams.

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PLANNING OF RESIDENTIAL TOWNSHIP

A Project Report submitted in partial fulfilment of the requirements

for the award of the degree of

Bachelor of Technology

In

Civil engineering

Submitted by

1) **Mr. Aniruddh Bambole**
2) **Ms. Ekta Meshram**
3) **Mr. Udaykumar Guttal**
4) **Mr. Saurabh Kinnake**
5) **Mr. Satyafulesh Rangari**

Under the Guidance of

Prof. Shital Navghare

Education to Eternity

Civil Department

J D College of Engineering and Management, Nagpur-441501 Affiliated to Dr. Babasaheb Ambedkar Technology University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Planning of Residential Township"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Shital Navghare, Civil Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 28/06/2021

Name of Students
1) Mr. Aniruddh Bambole
2) Ms. Ekta Meshram
3) Mr. Udaykumar Guttal
4) Mr. Saurabh Kinnake
5) Mr. Satyafulesh Rangari

CERTIFICATE

This is to certify that the project report entitled, **"Planning of Residential Township"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by **Mr. Aniruddh Bambole, Ms. Ekta Meshram, Mr. Udaykumar Guttal, Mr. Saurabh Kinnake, Mr. Satyafulesh Rangari** to **DBATU, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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This is to certify that the Project Report on **Planning of Residential Township** is approved work done by

1) Mr. Aniruddh Bambole
2) Ms. Ekta Meshram
3) Mr. Udaykumar Guttal
4) Mr. Saurabh Kinnake
5) Mr. Satyafulesh Rangari

in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering at** J D College of Engineering & Management, Nagpur affiliated to **DBATU, Lonere** during the academic year 2020-2021.

Prof. Shital Navghare
Guide

Prof. Atika Ingole
Head of the department

Project Examination held on 29/06/2021

Prof. Shital Navghare
Internal Examiner/ Guide

Prof. Tejaswini Jungare
29/06/21
External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B. TECH

We owe our sincerest gratitude towards **Dr. S. V. Sonekar,** Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S.V. Sonekar**, Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from Prof. Shital Navghare, Head, Department of Prof. Atika Ingole J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Dr. Snehal Abhayankar, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Shital Navghare, Department of Civil, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Civil Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

1) Mr. Anirudh Bambole
2) Ms. Ekta Meshram
3) Mr. Udaykumar Guttal
4) Mr. Saurabh Kinnake
5) Mr. Satyafulesh Rangari

ABSTRACT

Most of the Developers across India have adopted the New Township Modal. Township on the metro cities taking an advantage of globalization. Residential apartment is a part of housing, which has encouraging scope or development. House is a very complex term. The definition of the same has varied country to country and time to time. Housing being one of the three basic needs of life always remains in the top priorities of any person, society and economy. As a human being an individual need has own space and privacy, which can be provided by ownership of house. Thus, housing deserves significant attention in the context of developing policies and strategies for human development. A developing nation like India must focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth. The housing sector has been globally used as an engine to propel the economic growth as it generates employment and demand in the market. It is a trend that has played an essential role in opening the new ways for the private investors to invest in residential development through township that offers quality lifestyle. This study is an attempt to Providing Amenity like medical facility, education institute open park area waste water treatment plant, solid waste management, commercial building and residential building, playground Town planning is the process concerned with the development and use of land and design of the urban environment, infrastructure, transportation and distribution networks in which the final product is the habitat for a wide variety of people with diverse wants and needs. The site we have chosen for development into a township, lies 13 km away from Nagpur city. The township has been planning drainage system. Wastewater treatment plant and solid waste management. And estimate of residential building.

Keyword: town planning, estimation of residential Building, wastewater treatment unit, solid waste management, drainage system, rainwater harvesting.

SYMBOL

Q	Discharge (m^3/s)
C	Runoff Coefficient
I	Rainfall intensity (mm/hr)
A	Area of catchment (Km^2)
S	Slope hydraulic Gradient
D	Internal Diameter of Pipeline (mm)
R	Hydraulic radius (m)
V	Velocity (m/s)
N	Manning's coefficient of roughness
V_s	Setting Velocity
D_p	Size of particle
G_s	Specific Gravity
Q	Flow Rate
A_s	Surface area
V_h	Horizontal Velocity
T	Detention time
S_0	Influent BOD
F	Recirculation Factor
A	Area rooftop (sq. m)
R	Average annual rainfall (mm)
C	Coefficient Runoff
V	Volume of Tank (litre)
t	Length of the dry season (day)
n	Number of People Using the Tank
q	Consumption per Capita per Day (litre)
et	Evaporation Loss During The dry period

LIST OF FIGURES

LIST OF TABLES

ABBREVATION

BHK	Bed Room Hall Kitchen
MSW	Municipal Solid Waste
CPCB	Central Pollution Control Board
RMC	Ranchi Municipal Corporation
MSWM	Municipal Solid Waste Methodology
AQP	Air Quality Index
PM	Particulate Mater
MLD	Million Litre Per Day
TWD	Total Water Demand
RWH	Rainwater Harvesting
RCC	Reinforce Cement Concrete
OLR	Organic Loading Rate

TO ANALYZE TENSILE AND BONDING BEHAVIOR OF BAMBOO REINFORCEMENT IN CONCRETE BEAM USING DIFFERENT METHODS

A Project Report submitted in partial fulfilment of the requirements

For the award of the degree of

Bachelor of Technology

In

Civil Engineering

Submitted by:

Suraj Sarkar
Jayesh Bawane
Diksha Chandanbatwe
Jaya Mourya
Krishna Jadhav
Vikas Rathod

Under the Guidance of:-

Prof. Atika Ingole

Education to Eternity

Civil Engineering Department

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Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"To analyze tensile and bonding behavior of bamboo reinforcement in concrete beam using different methods"** in the subject **Civil Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Atika Ingole** Civil Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

Name of Students:-

Suraj Sarkar

Jayesh Bawane

Diksha Chandanbatwe

Jaya Mourya

Krishna Jadhav

Vikas Rathod

CERTIFICATE

This is to certify that the project report entitled, **"To analyze tensile and bonding behavior of bamboo reinforcement in concrete beam using different methods"** in the subject **Civil Engineering** in the faculty of Science and Technology submitted by the group to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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Civil Engineering Department

Forwarded to:

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Project Coordinator

Prof. Atika Ingole
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Dr .S. V. Sonekar
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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on, **To analyze tensile and bonding behavior of bamboo reinforcement in concrete beam using different methods** is approved work done by

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Jayesh Bawane

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In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Civil Engineering Department** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

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INDEX

CONTENTS

LIST OF FIGURES

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Atika Ingole**, Head, Department of Civil Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank **Dr. Snehal Abhyankar**, Project Coordinator, J D College of Engineering & Management, and Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of Civil Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

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ABSTRACT

Bamboo which is fast growing and ecologically friendly material for structural applications and is being considered as quite appropriate. The tensile strength of bamboo is high and can reach up to 125 to 150 Mpa. This makes bamboo an pretty alternative to steel in reinforcement loading applications. The bamboo reinforced concrete composite elements can be used as alternate for concrete, steel and wood used in housing and other products required in the day to day applications. In this study it has been attempted to develop engineered bamboo structural elements for use in low cost housing or G+1 structures.

It completes its growth within month's time and gets mature within 3 years. In Maharashtra it is commonly named as "velu". Species of bamboo change as per topography and climatic conditions. It has good tensile and compression strength. As per review dendrocalamus strictus, bambusa vulgaris schard are species of bamboo which has highest value of tensile and compression strength. Problems faced in using bamboo as construction material are water absorption and moisture content. To avoid this problems proper seasoning or treatment should be given to bamboo. In this paper test results on mechanical, physical properties as well a bamboo reinforced column & beams are reviewed. Tensile strength test of bamboo specimens, compressive strength test on concrete cubes and flexural strength test on bamboo reinforced beams of were casted and compared with the steel reinforced conventional beam. The results displayed significant nonlinearity, representing that the bamboo has the capacity to absorb energy to some extent. Bamboo concrete composite structural members can provide tailored solutions to the eco-housing initiatives at cheaper costs. The results obtained accrue the advantage obtained by the composite members when compared that to conventional reinforced concrete.

Key Words: Velu, Experimental Investigation, Bamboo Reinforced Concrete, UTM, Tensile Strength, Compression Strength, Flexural Strength.

FIELD PROJECT REPORT

on

“Big Data / IoT Analytics in Networking”

Submitted in partial fulfilment of the requirement for the award of the degree of

Bachelor of Technology

In

Computer Science &

Engineering

Submitted by:

Roll no. 1-66

Under the Guidance of

Prof. Mrudula

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Year 2020-21

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This is to certify that the filed visit report on, **"Big Data / IoT Analytics in Networking"** in the subject **Computer Science & Engineering** in the faculty of Science and Technology submitted by following students to **DBATU, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision.

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17	SEJAL LAXMIPRASAD SANODIYA	49	ROHIT NITIN SALUNKE
18	SHAIKH RUQUAIYA PARVEEN MOHD.	50	SIDDHANT MANOJ DASHMUKHE
19	SIDDHIKA SIDHARTH RAUT	51	SAMYAK PREETAM MESHRAM
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28	BHUSHAN RAM AGASHE	60	PRAGYA DHARAMPAL BAGDE
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32	GIRISH GANGADHAR ZARBADE	64	NEELAM SURENDRA THAKUR
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		RAMTEKE	
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51	BT190117CS	SAMYAK PREETAM MESHRAM	
52	BT190226CS	SAURABH BHAGWAN BORGHARE	
53	BT190029CS	SNEHAL BALIRAMJI SHENDE	
54	BT190068CS	SUDARSHAN SHANKAR KAPALE	
55	BT190039CS	SUHAG MANGARU MOHINKAR	
56	BT190212CS	TOSHAL SUNIL GABHANE	
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58	BT190130CS	VAIBHAV PRABHAKAR GHUGASE	
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ACKNOWLEDGEMENT

I express our sincere gratitude, for giving us the opportunity to work in the industry. I owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

I express our sincere gratitude towards **Dr. S. L. Haridas** Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and guidance.

The constant guidance and encouragement received from **Prof. Mrudula Nimbarte**, Head, Department **of Computer Science & Engineering,** J D College of Engineering & Management, Nagpur, has been of great help in carrying out during the internship and is acknowledged with reverential thanks. I would like to thank **PROF. MERAJUL HAQUE**, Departmental Internship Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of internship.

Without his wise counsel and able guidance, it would have been impossible to complete the internship in this manner.

I would like to thank **Ankit K. Kshirsagar Big Data / IoT Analytics in Networking** for giving me the opportunities to work in the industry/company.

I express gratitude to other faculty members of **Department of Computer Science & Engineering** J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

FIELD PROJECT REPORT

on

"Remote Sensing and Geographic Information Systems."

Submitted in partial fulfillment of the requirement

for the award of the degree of

Bachelor of Technology

In

Computer Science &

Engineering

Submitted by:

Roll no. 1-74

Under the Guidance of

Prof. Mrudula

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Affiliated to DBATU ,Lonere

Year 2020-21

CERTIFICATE

This is to certify that the filed visit report on, **"Remote Sensing and Geographic Information Systems."** in the subject **Computer Science & Engineering** in the faculty of Science and Technology submitted by following students to **DBATU, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision.

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8	AKSHAYKUMAR VISHWANATH TALANJE	45	PAYAL HIRAJI PAUNIKAR
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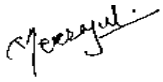
11	AMISHA PRASHANT DHABEKAR	48	PRADNYA DEVANAND JADHAV
12	ANIKET SUNIL JAISWAL	49	PRAGATI RAMESH KOKATE
13	ANKIT KAMESHWAR SHAH	50	PRAVEEN CHANDRAPRATAP SHUKLA
14	ARTI NANDKUMAR BHIMTE	51	PREM SANJAY JAWANE
15	ARYA GANESH BHAVATE	52	PUNAM SURENDRA MADAVI
16	ASHISH RAMDAS UMREDKAR	53	RAJAT KAILAS GAJBHIYE
17	ASLAM ANWARHUSEN GHODKE	54	RITIK UMESH ZILPE
18	BHAGYASHRI GUNESHWAR TEKADE	55	SAMYAK GAUTAM GAIKWAD
19	CHITISHA SATISH BARBATE	56	SANKET CHANDRAKUMAR MESHRAM
20	DHANANJAY KISHOR PIMPALKAR	57	SATISH TARACHAND DHAKATE
21	DHANASHRI MOHAN GULHANE	58	SEJAL VILAS DHENGE
22	DIKSHA RAJKUMAR DONGRE	59	SHASHANK CHANDRAHAS VERMA
23	DIKSHA RAMCHANDRA GOKHULE	60	SHOAIB AKHTAR SHEIKH
24	DIVYA RAJKUMAR LANJEWAR	61	SHREYA DNYANESHWAR SONARE
25	GANESH KUSAN NANHE	62	SIDDHESH AVINASH UPADHYE
26	GEETA ASHOK BHANDARKAR	63	SONALI DIGAMBAR WAKODIKAR
27	HARSH ASHOK BAGDE	64	SONALI KAMLESH SHENDE
28	HARSHAD DARSHAN NIKHARE	65	SONAM VILAS HEMANE
29	JAGDISH UMESH KORE	66	SUDHANSHU MILIND PURUSHE
30	KARAN WASUDEO GHORMARE	67	SUJATA DUDHARAM SARDARE
31	KAUSTUB RAJENDRA CHARDE	68	TANMAY VINDO SAKHARKAR
32	KAVISH KAVISH HUMANE	69	TANUJA LAKHANSINGH BAIS
33	KISHORI VISHWASRAO KOTANGALE	70	TINA CHANDRASHEKHAR NAIR
34	KOMAL BALWANT BAGDE	71	VAISHNAVI PARESHRAM BHAD
35	KUNDANKUMAR DURYODHAN RAHANGDALE	72	VEDANT DILIP MOHOD
36	MANISHA KESHAV DHARMIK	73	YOGESH TUKADIDAS ASUTKAR

37	MAYUR DNYANESHWAR NANDESHWAR	74	ANAND KRISHNARAO JICHKAR



PROF. MERAJUL HAQUE
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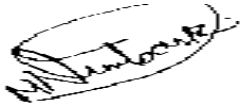

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12	JBTECH18043	ANIKET SUNIL JAISWAL	
13	JBTECH18320	ANKIT KAMESHWAR SHAH	
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20	JBTECH18061	DHANANJAY KISHOR PIMPALKAR	
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22	JBE16272	DIKSHA RAJKUMAR DONGRE	
23	JBTECH18238	DIKSHA RAMCHANDRA GOKHULE	
24	JBTECH18062	DIVYA RAJKUMAR LANJEWAR	
25	JBTECH18046	GANESH KUSAN NANHE	
26	JBTECH19153	GEETA ASHOK BHANDARKAR	
27	JBE17055	HARSH ASHOK BAGDE	
28	JBTECH18353	HARSHAD DARSHAN NIKHARE	
29	JBTECH18084	JAGDISH UMESH KORE	
30	JBTECH18389	KARAN WASUDEO GHORMARE	
31	JBTECH18209	KAUSTUB RAJENDRA CHARDE	
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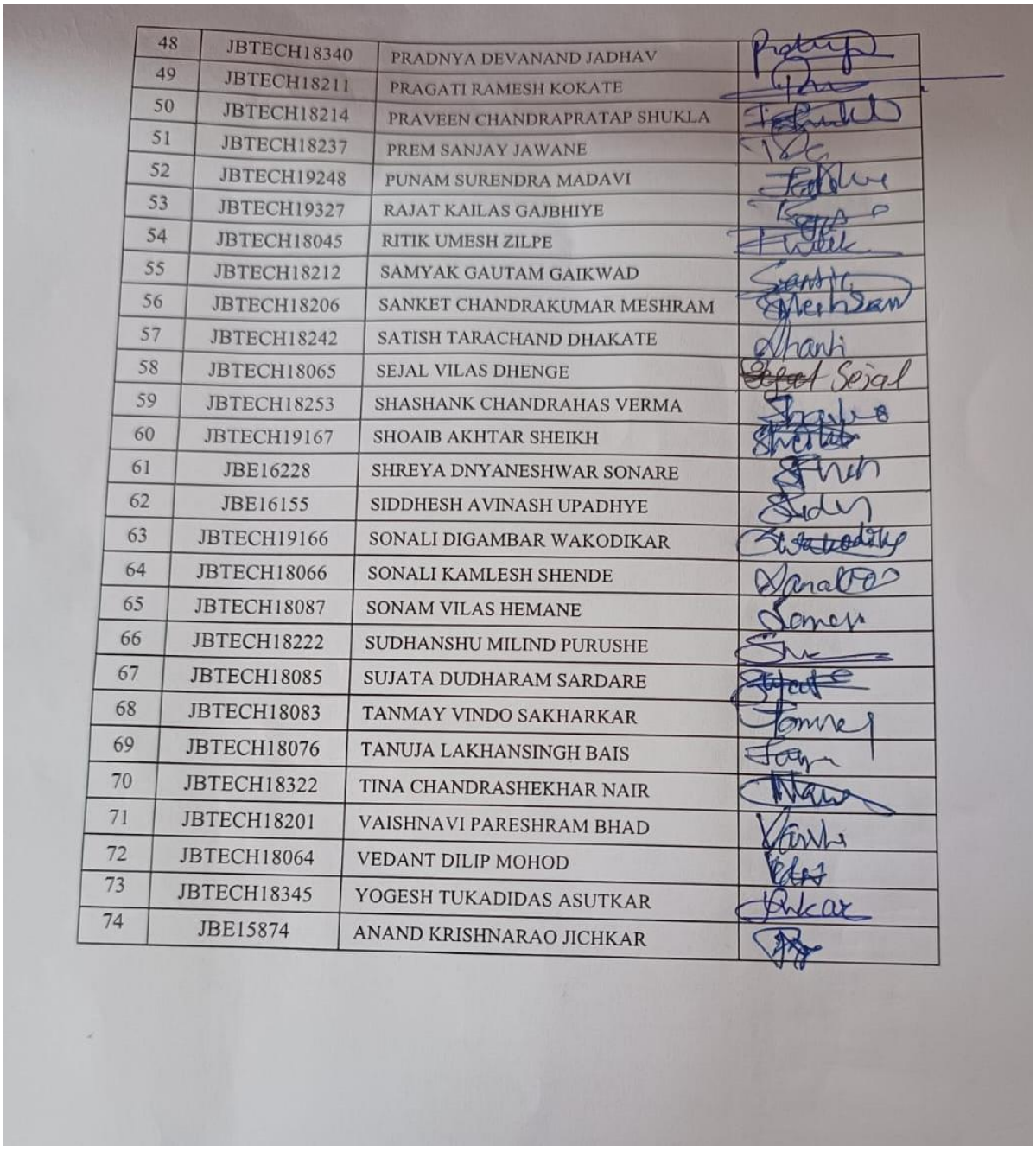
33	JBTECH18122	KISHORI VISHWASRAO KOTANGALE	
34	JBTECH19326	KOMAL BALWANT BAGDE	
35	JBTECH18341	KUNDANKUMAR DURYODHAN RAHANGDALE	
36	JBTECH19369	MANISHA KESHAV DHARMIK	
37	J017465	MAYUR DNYANESHWAR NANDESHWAR	
38	JBE15162	MAYURI PRAFULLA KHOBRAGADE	
39	JBTECH19367	MOHINI SANDIP LAD	
40	JBTECH18319	NACHIKET VIJAY GONDANE	
41	JBTECH18060	NANDINI NARENDRA AGRAWAL	
42	JBTECH18268	NAYAN INDRADEO JAMBHULKAR	
43	JBTECH18321	NIKHIL GAYAPRASAD MISHRA	
44	JBTECH18086	PALLAVI SANJAY BANSOD	
45	JBTECH19279	PAYAL HIRAJI PAUNIKAR	
46	JBTECH18228	PAYAL SUDHAKAR FUKE	
47	JBTECH18204	PIYUSH DILIP HEDAOO	
48			



48	JBTECH18340	PRADNYA DEVANAND JADHAV
49	JBTECH18211	PRAGATI RAMESH KOKATE
50	JBTECH18214	PRAVEEN CHANDRAPRATAP SHUKLA
51	JBTECH18237	PREM SANJAY JAWANE
52	JBTECH19248	PUNAM SURENDRA MADAVI
53	JBTECH19327	RAJAT KAILAS GAJBHIYE
54	JBTECH18045	RITIK UMESH ZILPE
55	JBTECH18212	SAMYAK GAUTAM GAIKWAD
56	JBTECH18206	SANKET CHANDRAKUMAR MESHRAM
57	JBTECH18242	SATISH TARACHAND DHAKATE
58	JBTECH18065	SEJAL VILAS DHENGE
59	JBTECH18253	SHASHANK CHANDRAHAS VERMA
60	JBTECH19167	SHOAIB AKHTAR SHEIKH
61	JBE16228	SHREYA DNYANESHWAR SONARE
62	JBE16155	SIDDHESH AVINASH UPADHYE
63	JBTECH19166	SONALI DIGAMBAR WAKODIKAR
64	JBTECH18066	SONALI KAMLESH SHENDE
65	JBTECH18087	SONAM VILAS HEMANE
66	JBTECH18222	SUDHANSHU MILIND PURUSHE
67	JBTECH18085	SUJATA DUDHARAM SARDARE
68	JBTECH18083	TANMAY VINDO SAKHARKAR
69	JBTECH18076	TANUJA LAKHANSINGH BAIS
70	JBTECH18322	TINA CHANDRASHEKHAR NAIR
71	JBTECH18201	VAISHNAVI PARESHRAM BHAD
72	JBTECH18064	VEDANT DILIP MOHOD
73	JBTECH18345	YOGESH TUKADIDAS ASUTKAR
74	JBE15874	ANAND KRISHNARAO JICHKAR

ACKNOWLEDGEMENT

I express our sincere gratitude, for giving us the opportunity to work in the industry. I owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

I express our sincere gratitude towards **Dr. S. L. Haridas** Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and guidance.

The constant guidance and encouragement received from **Prof. Mrudula Nimbarte**, Head,**Department of Computer Science & Engineering**, J D College of Engineering & Management, Nagpur, has been of great help in carrying out during the internship and is acknowledgedwith reverential thanks.

I would like to thank Prof. **PROF. MERAJUL HAQUE**, Departmental Internship Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of internship. Without his wise counsel and able guidance, it would have been impossible to complete the internship in this manner.

I would like to thank **Mr. Ankit Gupta**, for giving me the opportunities to work in the industry/company.

I express gratitude to other faculty members of **Department of Computer Science & Engineering,**JD College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

A REAL TIME MULTI-FACETED MINI ROVER BASED ON OPEN CV-PYTHON USING RASPBERRY PI

A thesis submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Computer Science and Engineering

Submitted by

Bhargav J. Ditani

Sneharsh R. Shende

Swami R. Shende

Jay P. Patel

Jeevan H. Khadse

Under the Guidance of

Dr. Shrikant V. Sonekar

Education to Eternity

Department of Computer Science and Engineering

J D COLLEGE OF ENGINEERING & MANAGEMENT,

NAGPUR-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"A Real Time Multi-Faceted Mini Rover Based on Open CV-Python using Raspberry Pi"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Dr. Shrikant V. Sonekar**, Computer Science and Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of Students

Bhargav Ditani

Sneharsh Shende

Swami Shende

Jay Patel

Jeevan Khadse

CERTIFICATE

This is to certify that the thesis entitled "**A Real Time Multi-Faceted Mini Rover Based on Open CV-Python using Raspberry Pi**" submitted by **Bhargav Ditani, Sncharsh Shende, Swami Shende, Jay Patel, Jeevan Khadse** to the **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

Dr. Shrikant V. Sonekar
Department of Computer Science and Engineering

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

for Rohan

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science and Engineering

Dr. Shrikant. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the project titled "**A REAL TIME MULTI-FACETED MINI ROVER BASED ON OPEN CV-PYTHON USING RASPBERRY PI**" is a bonafide record of the work done by

Bhargav Ditani

Snehansh Shende

Swami Shende

Jay Patel

Jeevan Khadse

in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere**, during the academic year 2020-2021

Dr. Shrikant V. Sonekar
Guide

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

for

Prof. Supriya Sawwashere
Head of Department

Project Viva-voce held on _____

Internal Examiner /Guide

External Examiner

An Efficient Attribute Based Multi Keyword Search Scheme In Encrypted Keyword

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering

In

Computer Science Engineering

Submitted by

MINAKSHI NIRMAL

SUHANI BANSOD

SNEHA BARSAGADE

SHRADHA ADIKANE

Under the Guidance of

Prof. M.M. Baig

Education to Eternity

Department of CSE – IT

J D College of Engineering and Management, Nagpur-441501

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur

YEAR- 2020 -2021

PROJECT REPORT

The arrangement of parts of B.E. Final Year Project Report

The sequence in which the project report material should be arranged and bound should be as follows:

1. Cover Page
2. Inside Cover Page
3. Declaration Page
4. Certificate
5. Certificate of Approval
6. Index
7. Acknowledgement
8. List of Figures
9. List of Table
10. Abbreviation and Symbols
11. Abstract
12. All Chapters
13. References
14. Annexure
15. List of Papers Published Based on Project
16. Copyright Certificate
17. Plagiarism Report
18. Photo Gallery
19. Bibliography

DECLARATION

We hereby declare that the work presented in this project report entitled, **"An Efficient Attribute Based Multi Keyword Search Scheme In Encrypted Keyword"** in the subject **Computer Science of Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. M .M Baig**, Name of the Department, J D College Of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or certificate course.

Name of Student/ Students

MINAKSHI NIRMAL
SUHANI BANSOD
SNEHA BARSAGADE
SHARADHA ADIKANE

Place: **J D College of Engineering and Management, Nagpur, 441501.**

Date:

Template 4

CERTIFICATE

This is to certify that the project report entitled. **"An Efficient Attribute Based Multi Keyword Search Scheme In Encrypted Keyword"** in the subject **Computer Science of Engineering** in faculty of Science and Technology submitted by**Minakshi Nirmal, Suhani Bansod, Sneha Barsagade, Shradha Adhikane** to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** for the award of thedegree of **Bachelor Of Engineering** is a bonafide recorded of work carried out by them under project report. In full or in part, have not been submitted or published toany other Institute or University for the award of any degree or diploma.

Prof. M. M. Baig
(Name of the Guide)
Computer Science
and Engineering

Forwarded to:

Prof. Supriya Sawwashere
(Name of the Project Coordinator)
Project Coordinator

Prof. Supriya Sawwashere
(Name of the HOD)

Dr. S. V. Sonekar
(Name of the Principal)
Principal
J.D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Template 5

CERTIFICATE OF APPROVAL

This is to be certify that the Project Report on **"An Efficient Attribute Based multi Keyword Search Scheme in Encrypted Keywords"** is approved work done by **Minakshi Nirmal , Suhani Bansod , Sneha Barsagade , Shradha Adhikane** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering in Computer Science Engineering at J D College Of Engineering and Management , Nagpur** affiliated to **Rashtrasant Tukadoji Maharaj Nagpur University , Nagpur** during this academic year 2020-2021.

Prof. M .M Baig
Name of Guide

Prof. Supriya Sawwashrere
Name of
Head of the Department

Project Examination held on _____

Internal Examiner/ Examiner

External Examiner

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We own our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal JD college of engineering and management, Nagpur, for providing the platforms and necessary faculties.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere** Head, Department of Computer Science and Engineering, JD College Of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank, **Prof. Supriya Sawwashere,** project Coordinator, J D College of Engineering and Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. M.M. Baig,** Department of Computer Science and Engineering, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thanks the members of the Departmental Research Committee and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Computer Science and Engineering Department, J D College of Engineering and Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the Students

Minakshi Nirmal
Suhani Bansod
Sneha Barsagade
Sharadha Adikane

Design and Development of Multifaceted and Intelligent Spectacle Based on Deep Learning for Avoiding Road Accidents Due to Intensified Headlights of Motile Automobile

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Specialization

Submitted by

Gaurav Habad

Kruti Sontakke

Gaurav Kshirsagar

Harshal Bhoyar

Abhishek Barve

Under the Guidance of

Dr. S. V. Sonekar

Education to Eternity

Department of Computer Science and Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Development of Multifaceted and Intelligent Spectacle Based on Deep Learning for Avoiding Road Accidents Due to Intensified Headlights of Motile Automobile"** in the subject **Computer Science** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr. S. V. Sonekar, Department of Computer Science and Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 4-12-2021

Gaurav Habad
Kruti Sontakke
Gaurav Kshirsagar
Harshal Bhoyar
Abhishek Barve

CERTIFICATE

is is to certify that the project report entitled, **"Design and Development of Multifaceted and telligent Spectacle Based on Deep Learning for Avoiding Road Accidents Due to Intensified eadlights of Motile Automobile"** in the subject **Computer Science** in the faculty of Science and echnology submitted by **Gaurav Habad, Kruti Sontakke, Gaurav Kshirsagar, Harshal hoyar, Abhishek Barve** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for e award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them nder my supervision. The contents of this Project Report, in full or in parts, have not been submitted r published to any other Institute or University for the award of any degree or diploma.

Dr. S. V. Sonekar
Department of Computer Science

orwarded to:

Prof. Rohan Kokate
Project Coordinator
Department of Information Technology

Prof. Supriya Sawwashere
Head of the Department
Department of Information Technology

Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DESIGN AND DEVELOPMENT OF MULTIFACETED AND INTELLIGENT SPECTACLE BASED ON DEEP LEARNING FOR AVOIDING ROAD ACCIDENTS DUE TO INTENSIFIED HEADLIGHTS OF MOTILE AUTOMOBILE** is approved work done by

Gaurav Habad

Kruti Sontakke

Gaurav Kshirsagar

Harshal Bhoyar

Abhishek Barve

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Dr. S. V. Sonekar
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

Design of an Intelligent Face Recognition System Using VGGNET CNN Architecture

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Computer Science

Submitted by

Rohan S. Lade

Harshal K. Meshram

Prashik S. Ramteke

Aditya Badale

Ankit Kulkarni

Under the Guidance of

Prof. Sonali Zunke

Education to Eternity

Department of Computer Science and Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design of An Intelligent Face Recognition System Using VGGNET CNN Architecture"** in the subject **Computer Science** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Sonali Zunke,** Department of Computer Science and Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place :- Nagpur
Date :-

Rohan S. Lade
Harshal K. Meshram
Prashik S. Ramteke
Aditya Badale
Ankit Kulkarni

CERTIFICATE

This is certify that the project report entitled, **"Design of An Intelligent Face Recognition System Using VGGNET CNN Architecture"** in the subject **Computer Science** in the faculty of Science and Technology submitted by **Rohan S. Lade, Harshal K. Meshram, Prashik S. Ramteke, Aditya Badale, Ankit Kulkarni** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Sonali Zunke
Department of Computer Science

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science

Dr. S.V. Sonekar
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Design of An Intelligent Face Recognition System Using VGGNET CNN Architecture** is approved work done by

Rohan S. Lade
Harshal K. Meshram
Prashik S. Ramteke
Aditya Badale
Ankit Kulkarni

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021

Prof. Sonali Zunke
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar,** Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from Prof. **Supriya Sawwashere,** Head, Department of Computer Science J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate,** Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Sonali Zunke,** Department of the Computer Science, J D College of Engineering & Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Computer Science Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Rohan S. Lade

Harshal K. Meshram

Prashik S. Ramteke

Aditya Badale

Ankit Kulkarni

Developing an Artificial Read and Learn System by Using Natural Language Processing for smart coding

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Computer Science and Engineering

Submitted by

Sagar S. Kadwe

Nakul G. Gopal

Tejas S. Jaiswal

Mithun G. Chide

Yash H. Paunikar

Under the Guidance of

Prof. Supriya Sawwashere

Education to Eternity

Department of Computer Science And Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonare.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Developing an Artificial Read and Learn System by using Natural Language Processing for smart coding"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Supriya Sawwashere, Department of CSE-IT, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 04|12|2021

Sagar S. kadwe
Nakul G. Gopal
Tejas S. Jaiswal
Mithun G. Chide
Yash H. Paunikar

CERTIFICATE

This is to certify that the project report entitled, **"Developing an Artificial Read and Learn System by using Natural Language Processing for smart coding"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology submitted by **Sagar S. Kadwe, Nakul G. Gopal, Tejas S. Jaiswal, Mithun G. Chide, Yash H. Paunikar** to **Dr. Babasaheb Ambedkar Technological University, Lonare** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Supriya Sawwashere
Department of Information Technology

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science

Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DEVELOPING AN ARTIFICIAL READ AND LEARN SYSTEM BY USING NATURAL LANGUAGE PROCESSING FOR SMART CODING** is approved work done by

Sagar S. Kadwe

Nakul G. Gopal

Tejas S. Jaiswal

Mithun G. Chide

Yash H. Paunikar

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonare** during the academic year 2020-2021.

Prof. Supriya Sawwashere
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

IOT Based On-Road Vehicle Breakdown Assistance

A thesis submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Computer Science and Engineering

Submitted by

Megha Dongre

Shalini Verma

Kalyani Dhote

Achal Dighore

Sanjeevani Tumdam

Under the Guidance of

Prof. Milind Tote

Education to Eternity

Department of Computer Science and Engineering

J D COLLEGE OF ENGINEERING & MANAGEMENT,NAGPUR-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IOT Based On-Road Vehicle Breakdown Assistance"** in the subject **Computer Science and Engineering** in the facultyof Science and Technology is the original contribution carried out by us under the Technology is the original contribution carried out by us under the guidance of **Prof. Milind Tote,** Computer Science and Engineering, J.D. College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree ordiploma or certificate course.

Place : Nagpur

Date :

Name of Students

Megha Dongre

Shalini Verma

Kalyani Dhote

Achal Dighore

Sanjeevani Tumdam

CERTIFICATE

This is to certify that the thesis entitled **"IOT Based On Road Vehicle Breakdown Assistance"** submitted by **Megha Dongre, Shalini Verma, Achal Dighore, Kalyani Dhote, Sanjeevani Tumdam** to the **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

Prof. Milind Tote
Department of Computer Science and Engineering

Forwarded to :

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science and Engineering

Dr. Shrikant V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the project titled **"IOT Based On Road Vehicle Breakdown Assistance"** is a bonafide record of the work done by

Megha Dongre

Shalini Verma

Kalyani Dhote

Achal Dighore

Sanjeevani Tumdam

in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at J. D. College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere**, during the academic year 2020-2021.

Prof. Milind Tote
Guide

Prof. Supriya Sawwashere
Head of Department

Project Viva-voce held on _____

Internal Examiner/Guide

External Examiner

IOT Based Real Time Android Application For Fire Monitoring, Detection and Extinguishing System using GSM

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor Of Technology

In

Computer Science & Engineering

Submitted by

Dipali Chakole

Naina Mahile

Nikita Kotangale

Mitali Charde

Triveni Pendam

Under the Guidance of

Prof. Supriya Sawwashere

Education to Eternity

Computer Science & Engineering

J D College of Engineering and Management, Nagpur-441501

DECLARATION

We hereby declare that the work presented in this project reportentitled,**"IOT Based Real Time Android Application For Fire Monitoring, Detection and Extinguishing System using GSM"** in the subject **Computer Science** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Supriya Sawwashere ,Computer Science, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree ordiploma or certificate course.

Place:Nagpur

Dipali Chakole

Naina Mahile

Nikita Kotangale

Mitali Charde

Triveni Pendam

Date:

CERTIFICATE

This is to certify thatthe project report entitled, **"IOT Based Real Time Android Application For Fire Monitoring, Detection and Extinguishing System using GSM"** in the subject **Computer Science** in the faculty of Science and Technology submitted by **Dipali Chakole, Nina Mahile, Nikita Kotangale, Mitali Charade, Triveni Pendamto Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of Bachelor of Technologyis a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Supriya Sawwashere)
Computer Science & Engineering

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. Supriya Sawwashere)
Head of the Department
Computer Science & Engineering

Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IOT Based Real Time Android Application For Fire Monitoring, Detection and Extinguishing System using GSM** is approved work done by

Dipali Chakole
Naina Mahile
Nikita Kotangale
Mitali Charde
Triveni Pendam

in partial fulfillment of the requirements for the award of the degree of **Bachelor Of Technology** in **Computer Science & Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Supriya Sawwashere
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination heldon_____

InternalExaminer/ Guide

External Examiner

IoT Based Smart Energy Meter and Billing System

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology In

Information Technology

Submitted by

Shubham Thulkar

Praful Ikhankar

Rahul Wadhai

Mrunali Meshram

Triveni Tekam

Under the Guidance of

Prof.Rohan Kokate

Education to Eternity

Department of Information Technology

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonare

Year 20-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, "IoT Based Smart Energy Meter and Billing System" in the subject Information Technology **in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Rohan Kokate, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.**

Place: Nagpur
Date:

Mr. Shubham Thulkar
Mr. Praful Ikhankar
Mr. Rahul Wadhai
Miss. Mrunali Meshram
Miss. Triveni Tekam

CERTIFICATE

This is to certify that the project report entitled, **"IoT Based Smart Energy Meter and Billing System"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Shubham Thulkar, Praful Ikhankar, Rahul Wadhai, Mrunali Meshram , Triveni Tekam** to **Dr. Babasaheb Ambedkar Technological University, Lonare.**

For the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof.Rohan Kokate)
Information Technology

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. Supriya Sawashere)
Head of the Department
Information Technology

(Dr. S. V. Sonekar)
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IoT Based Smart Energy Meter and Billing System** is approved work done by

Mr. Shubham Thulkar

Mr. Praful Ikhankar

Mr. Rahul Wadhai

Miss.Mrunali Meshram

Miss. Triveni Tekam

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonare** during the academic year 2020-2021.

Prof. Rohan Kokate
Guide

Prof. Supriya Sawashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Exam

A

PROJECT REPORT

ON

"MONITORING AND CONTROLLING THE CROPS FROM DISEASES BY DESIGNING SMART IRRIGATION AND GREEN AGRICULTURE FARM SYSTEM USING MACHINE LEARNING TECHNIQUES"

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology in Specialization

Submitted By

CHITRA BHUJADE

DIKSHITA TAMBE

HARSHADA MOHINKAR

PRATIKSHA TANDEKAR

VANASHREE MOHURLE

Under the Guidance of

PROF. M. M. BAIG

Education to Eternity

Department Of Computer Science & Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Monitoring And Controlling The Crops From Diseases By Designing Smart Irrigation And Green Agriculture Farm System Using Machine Learning Techniques** "in the subject **Science Computer &Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. M. M. Baig**, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: NAGPUR
Date: 13/12/21

Name of Student/Students

Chitra Bhujade Chitra

Dikshita Tambe Dtambe

Harshada Mohinkar H P Mohinkar

Pratiksha Tandekar

Vanashri Mohurle V Mohurle

CERTIFICATE

This is to certify that the project report entitled, **"Monitoring And Controlling The Crops From Diseases By Designing Smart Irrigation And Green Agriculture Farm System Using Machine Learning Techniques "** in the subject **Science Computer & Engineering** in the faculty of Science and Technology submitted by **chitra Bhujade, Dikshita Tambe, Harshada Mohinkar, Pratiksha Tandekar ,Vanashree Mohurle** to **Dr. Babasaheb Ambedkar Technological University, Lonere.**
for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof .M. M. Baig
Department of Computer Science & Engineering

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science & Engineering

Principal
Dr. S. V. Sonekar

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **MONITORING AND CONTROLLING THE CROPS FROM DISEASES BY DESIGNING SMART IRRIGATION AND GREEN AGRICULTURE FARM SYSTEM USING MACHINE LEARNING TECHNIQUES**

is approved work done by

Chitra Bhujade

Dikshita Tambe

Harshada Mohinkar

Pratiksha Tandekar

Vanshree Mohurle

in partial fulfillment of the requirements for the award of the degree of Bachelor Of Technology in computer Science & Engineering at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere during the academic year 2020-2021.

Prof. M. M. Baig
Guide

Prof. Supriya Sawwashere
computer science & Engineering

Project Examination held on_____

Internal Examiner/ Guide

External Examiner

My Purse Magic Purse : A Safety Gadget

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor Of Technology

In

Computer Science & Engineering

Submitted by

Mona Chaware

Dipali Itankar

Diksha Dharale

Divya Borkar

Shraveenkumar Pendyala

Under the Guidance of

Prof. Madhuri B. Babar

Education to Eternity

Computer Science & Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled,“ **My Purse Magic Purse : A Safety Gadget”** in the subject **Computer Science** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Madhuri Babar, Computer Science, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:Nagpur

Mona Chaware

Dipali Itankar

Diksha Dharale

Divya Borkar

Shraveenkumar Pendyala

Date: 20 - 1 - 2022

CERTIFICATE

This is to certify thatthe project report entitled, **"My Purse Magic Purse : A Safety Gadget"** in the subject **Computer Science** in the faculty of Science and Technology submitted by **Mona Chaware,Dipali Itankar,Diksha Dharale,Divya Borkar,Shraveenkumar Pendyala** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Madhuri B. Babar)
Computer Science & Engineering

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. Supriya Sawwashere)
Head of the Department
Computer Science & Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Principal
Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **My Purse Magic Purse : A Safety Gadget** is approved work done by

Mona Chaware

Dipali Itankar

Diksha Dharale

Divya Borkar

Shraveenkumar Pendyala

in partial fulfillment of the requirements for the award of the degree of **Bachelor Of Technology** in **Computer Science & Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Madhuri B. Babar
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on 29 - 6 - 2021

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Officiating Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from, Head, Department of –Prof. Madhuri B. Barbar J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thanks Prof. Rohan Kokate , Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Madhuri B. Barbar, Department of Computer Science, J D College of Engineering &Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thanks the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of Computer Science Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Mona Chaware
Dipali Itankar
Diksha Dharale
Divya Borkar
Shraveenkumar Pendyala

Proactive Aquatic Floating Garbage Collecting Boat Operating by Android Application

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor Of Technology In

Computer Science Engineering

Submitted by

Ashwini Bhave **AnkitaThakre**

Payal Ashtikar **Mayuri Jambhulkar**

Apurva Vishwakarma

Under the Guidance of

Prof. Sonali Zunke

Education to Eternity

Department of Computer Science And Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonare

Year 20-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Proactive Aquatic Floating Garbage Collecting Boat Operating by Android Application"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Sonali Zunke, Computer science and Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificatecourse.

Place:Nagpur
Date: 30|10|2021

Miss. Ashwini Bhave
Miss. Ankita Thakre
Miss. Payal Ashtikar
Miss. Mayuri Jambhulkar
Miss. Apurva Vishwakarma

CERTIFICATE

This is to certify that the project report entitled, **"Proactive Aquatic Floating Garbage Collecting Boat Operating by Android Application"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology submitted by **Ashwini S. Bhave, Ankita A. Thakre, Payal D. Ashtikar, Mayuri B. Jambhulkar , Apurva R. Vishwakarma** to **Dr. Babasaheb Ambedkar Technological University, Lonare.**

For the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree ordiploma.

(Prof. Sonali Zunke)
Computer Science and Engineering

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. SupriyaSawwashere)
Head of the Department
Computer Science and Engineering

(Dr. S. V. Sonekar)
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **PROACTIVE AQUATIC FLOATING GARBAGE COLLECTING BOAT OPERATING BY ANDROID APPLICATION** is approved work done by **Miss. Ashwini Bhave, Miss. Ankita Thakre, Miss. Payal Ashtikar, Miss. Mayuri Jambhulkar, Miss. Apurva Vishwakarma**

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonare** during the academic year 2020-2021.

Prof.Sonali Zunke
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination heldon_____

Internal Examiner/Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year ofB.TECH.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere**, Head, Department of CSE-IT, J D College of Engineering & Management Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, and Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Sonali Zunke**, Department of CSE-IT, J D College of Engineering and Management Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of CSE-IT Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of thiswork.

Miss. Ashwini S. Bhave
Miss. Ankita A. Thakre
Miss.Payal D. Ashtikar
Miss.Mayuri B. Jambhulkar
Miss. Apurva R. Vishwakarma

Self -Driving Car Using Artificial Intelligence And Image Processing

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Computer Science And Engineering

Submitted by

Shrutika Bhonde

Sakshi Bhonde

Aboli Padole

Kishori Kshirsagar

Pragita Bagde

Under the Guidance of

Prof. Manoj Titre

Education to Eternity

Department of Computer Science And Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Self-Driving Car Using Artificial Intelligence And Image Processing"** in the subject **Computer Science Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Manoj Titre, Department of CSE, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place : NAGPUR
Date: 17/12/2021

Shrutika Bhonde S.S.Bhonde.
Sakshi Bhonde S.R.Bhonde
Aboli Padole Apadole
Kishori Kshirsagar K.P. Kshirsagar
Pragita bagde Bagde

CERTIFICATE

This is to certify that the project report entitled, **"Self-Driving Car Using Artificial Intelligence And Image Processing"** in the subject **Computer Science And Engineering** in the faculty of Science and Technology submitted by **Shrutika Bhonde, Sakshi Bhonde, Aboli Padole, Kishori Kshirsagar, Pragita Bagde** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Manoj Titre
Department of Computer Science and Engineering

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science and Engineering

Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **SELF-DRIVING CAR USING ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING** is approved work done by

Shrutika Bhonde

Sakshi Bhonde

Aboli Padole

Kishori Kshirsagar

Pragita Bagde

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science And Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Manoj Titre
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

Traffic Signal Management for Ambulance Using Radar with Medical History Card Through Biometric

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Specialization

Submitted by

Asmita Das

Ayushi Agashe

Divya Pathak

Prajwal Jambhulkar

Under the Guidance of

Prof. Supriya Sawwashere

Education to Eternity

Department of Computer Science

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Traffic Signal Management for Ambulance Using Radar with Medical History Card Through Biometric"** in the subject **Computer Science** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Supriya Sawwashere**, Department of CSE-IT, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

Asmita Das

Ayushi Agashe

Divya Pathak

Prajwal Jambhulkar

CERTIFICATE

This is to certify that the project report entitled, **"Traffic Signal Management For Ambulance Using Radar With Medical History Card Through Biometric"** in the subject **Computer Science** in the faculty of Science and Technology submitted by **Asmita Das, Ayushi Agashe, Divya Pathak, and Prajwal Jambhulkar** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Supriya Sawwashere
Department of Computer Science

Forwarded to:

Prof. Rohan Kokate
Project Incharge

Prof. Supriya Sawwashere
Head of the Department
Department of Information Technology

Dr. S.V. Sonekar
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Traffic Signal Management For Ambulance Using Radar With Medical History Card Through Biometric** is approved work done by

Asmita Das

Ayushi Agashe

Divya Pathak

Prajwal Jambhulkar

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Rohan Kokate
Project Incharge

Prof. Supriya Sawwashere
Guide and
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

Transmission Line multiple fault detection and data collection of level of fault using Internet of Things and analysis of system.

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Engineering

In

Computer Science and Engineering

Specialization

Submitted by

Anagha V. Wandhe

Manali B. Chahande

Under the Guidance of

Prof. Merajul H.

Farooqi

Education to Eternity

Department of Computer Science and Engineering

J D COLLEGE OF ENGINEERING & MANAGEMENT, NAGPUR-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

CERTIFICATE

This is to certify that the thesis entitled "**Transmission Line Multiple Fault detection and data collection of level of fault using IoT**" submitted by **Anagha Wandhe, Manali Chahande** to the **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carriedout by them under my supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

Prof. Merajul H. Farooqi
Department of Computer Science and Engineering

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of Computer Science and Engineering

Principal
Dr. S. V. Sonekar

BONAFIDE CERTIFICATE

This is to certify that the project titled "**Transmission Line Multiple Fault detection and data collection of level of fault using IoT**" is a bonafide record of the work done by **Anagha Wandhe, Manali Chahande** in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere**, during the academic year 2020-2021

Prof. Merajul H. Farooqi
Guide

Prof. Supriya Sawwashere
Head of Department

Project Viva-voce held on _____

Internal Examiner

External Examiner

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. Srikant V. Sonkar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S.V. Sonekar**, Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere**, Head, Department of Computer Science and Engineering J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged withreverential thanks.

We would like to thank **Prof. Supriya Sawwashere**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. M .H. Farooqi**, Department of Computer Science and Engineering, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Computer Science and Engineering Department, JD College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Anagha V. Wandhe

Manali B. Chahande

FIELD PROJECT REPORT

on

“Seimens Virtual Industrial Tour”

Submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by:

Students of 2nd & 3rd

Year (EE)

Under the Guidance of

Prof. Pratiksha

Panchbhai

Education to Eternity

Department Of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

(An Autonomous Institute, with NAAC "A" Grade)
Affiliated to DBATU ,Lonere

Year 2020-21

CERTIFICATE

This is to certify that the filed visit report on, **"Seimens ,Pune "** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by the students of 2nd & 3rd year to **DBATU ,Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision.

Prof. P.P.Panchbhai
Internship Coordinator, EE

Forwarded to:

Dr. S.R.Vaishnav
Head of Department
Electrical Engineering **Date:24/04/2020**

ACKNOWLEDGEMENT

I express our sincere gratitude, for giving us the opportunity to work in the industry. I owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Dr. S.R.Vaishnav**, Head, **Department of Electrical Engineering**, J D College of Engineering & Management, Nagpur, has been of great help in carrying out during the internship and is acknowledgedwith reverential thanks.

I would like to thank **Prof. Mandar S. Isasare**, Departmental Internship Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of internship.

Without his wise counsel and able guidance, it would have been impossible to complete the internship in this manner.

I would like to thank **Mr. S.A.Halmare**, **Seimens ,Pune** for giving me the opportunities to work in the industry/company.

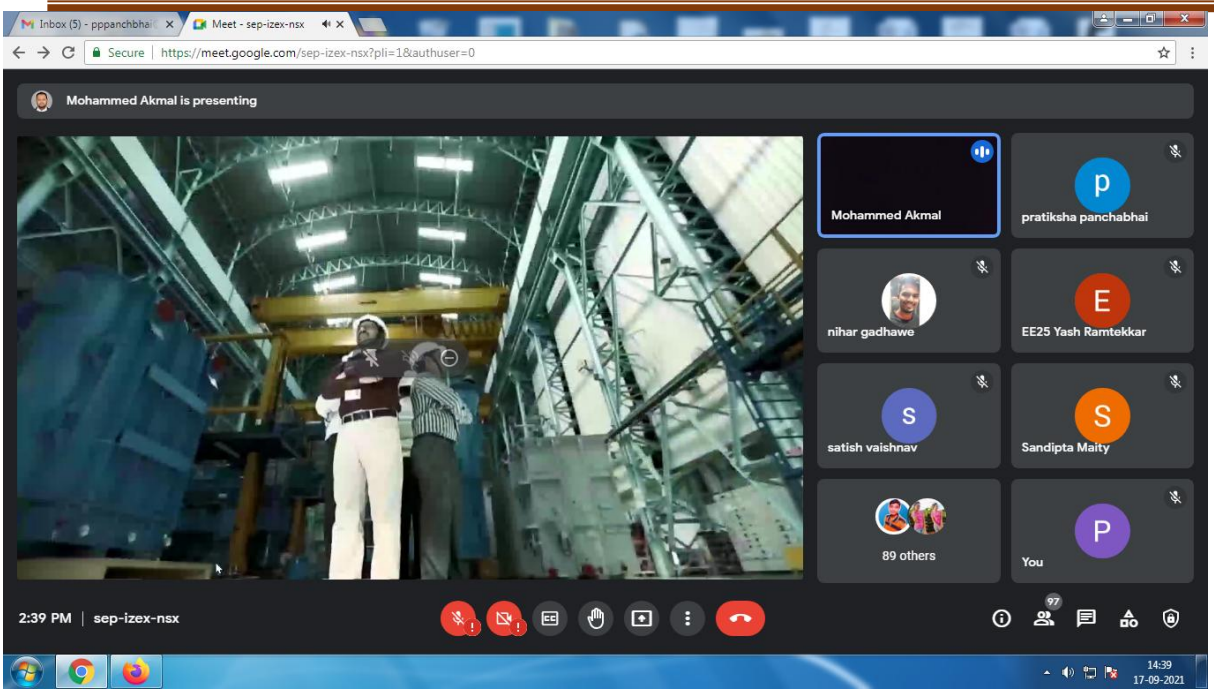
I express gratitude to other faculty members of **Department of Electrical Engineering**, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

VIRTUAL INDUSTRIAL TOUR OF SEIMENS PUNE UNIT

The Department of Electrical Engineering at J D College of Engineering and Management, Nagpur organized a virtual industrial tour to Seimens Pune Unit on 17/04/2021 for the students of 4th SEM Electrical Engineering . Total 67 students of 4th SEM EE ,73 students from 6th Sem as well as faculty members attended the meet. Automation units were explained in tour. Energy transition is the greatest challenge our generation faces. How do we reduce emissions while also increase energy supply? It is an uphill battle. And there is no silver bullet. But finding solutions has always been in our DNA. For more than 150 years our engineers have been spearheading the electrification of the world. Today we are a team of 96.000 sharing the same passion, vision and values. Our diversity makes us strong and helps us to find answers together with our partners.Located in 90 countries, Siemens Energy operates across the whole energy landscape. From conventional to renewable power, from grid technology to storage to electrifying complex industrial processes.

Siemens Energy AG is an energy company formed through the spin-off of the former Gas and Power division of Siemens, and it includes full ownership of Siemens Gamesa.

The energy division has been an essential part of the company since the foundation of the group by Werner von Siemens and Johann Georg Halske. Important organizational milestones were the founding of Siemens-Schuckertwerke in 1903, the formation of the Power Engineering Division in 1969 in the newly founded Siemens AG, and the bundling of activities in the Siemens Energy Sector in 2008.



Departmental Incharge

HOD

SOLAR FED PMSM DRIVE USING ARDUINO

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Saurabh Lonare

Vaibhav Suryawanshi

Karishma Ragit

Anil Funde

Monika Waghade

Under the Guidance of

Prof. Mandar Isasare

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad,

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Solar Fed PMSM Drive Using Arduino UNO"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Mandar Isasare, Name of Department, Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 13/07/2021

Saurabh Lonare
Vaibhav Suryawanshi
Karishma Ragit
Anil Funde
Monika Waghade

CERTIFICATE

This is to certify that the project report entitled, **"Solar Fed PMSM Drive Using Arduino UNO"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Saurabh Lonare, Vaibhav Suryawanshi, Karishma Ragit, Anil Funde, Monika Waghade** to Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad. for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Mandar Isasare
Electrical Engineering Department JDCOEM

Forwarded to:

Prof. A. V. Joshi
Project Coordinator

Dr. S. R. Vaishanav
Head of the Department
Electrical Engineering Department

Dr. S. V. Sonekar
Offtg.Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **SOLAR FED PMSM DRIVE USING ARDUINO UNO** is approved work done by

Saurabh Lonere
Vaibhav Suryawanshi
Karishma Ragit
Anil Funde
Monika Waghade

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad,** during the academic year 2020-2021.

M.Isasare

Prof. Mandar Isasare
Guide

Dr. S. R. Vaishanav
Head of the Department

Project Examination held on 13/07/2021

M.Isasare.

Internal Examiner/ Guide
(Mr. M. S. Isasare)

External Examiner

PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Mr. Saurabh Purushattamrao Jodh

Mr. Suyog Jagdishrao Debe

Mr. Shubham Kishorrao Nandanwar

Mr. Shubham Rajendra Bramhane

Ms. Puja Suresh Nikhade

Ms. Ashwini Kashirao Dudhkaware

Under the Guidance of

Prof. Ashutosh Joshi

Education to Eternity

Electrical Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE"** in the subject **Electrical Engineering Department** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof Ashutosh Joshi**, Electrical Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:

Name of Student

Mr. Saurabh Purushattamrao Jodh
Mr. Suyog Jagdishrao Debe
Mr. Shubham Kishorrao Nandanwar
Mr. Shubham Rajendra Bramhane
Ms. Puja Suresh Nikhade
Ms. Ashwini Kashirao Dudhkaware

CERTIFICATE

This is to certify that the project report entitled, **"PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE"** in the subject **Electrical Engineering Department** in the faculty of Science and Technology submitted by **Saurabh Purushattamrao Jodh, Suyog Jagdishrao Debe, Shubham Kishorrao Nandanwar, Shubham Rajendra Bramhane, Puja Suresh Nikhade, Ashwini Kashirao Dudhkaware** to **Dr. Babasaheb Ambedkar Technological University, Lonere.** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Ashutosh Joshi
Electrical Engineering Department

Forwarded to:

Prof. Ashutosh Joshi
Project Coordinator

Dr. S. R. Vaishnav
Head of the Department
Electrical Engineering

Dr. S.V. Sonekar
Off. Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE** is approved work done by Mr. Saurabh Purushattamrao Jodh, Mr. Suyog Jagdishrao Debe, Mr. Shubham Kishorrao Nandanwar, Mr. Shubham Rajendra Bramhane, Ms. Puja Suresh Nikhade, Ms. Ashwini Kashirao Dudhkaware, in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2017-2021.

Prof. Ashutosh Joshi
Guide

Dr. S. R. Vaishnav
Head of the Department

Project Examination held on

Internal Examiner/ Guide

External Examiner

FAULT DETECTION IN DISTRIBUTION LINE USING GPS TECNNIQUE IN REAL TIME SCENARIO

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Mr. Aniket Meshram

Mr.Bahulashwa Kamble

Mr.Yashwant Borkar

Mr. Sushil Gajbhiye

Mr. Vishnu Mankar

Under the Guidance of

Prof. Mandar Isasare

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University,

Lonere , Raigad

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, " **Fault detection in distribution line using GPS technique in real life scenario**" in the subject of **Electrical Engineering Department** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. **Mandar Isasare,** Department of Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Mr. Aniket Meshram
Mr. Bahulashwa Kamble
Mr. Yashwant Borkar
Mr. Sushil Gajbhiye
Mr. Vishnu Mankar

CERTIFICATE

This is to certify that the project report entitled, **"Fault Detection In Distribution Line Using Gps Technique In Real Life Scenario"** in the subject of **Electrical Engineering** in the faculty of Science and Technology submitted by **Aniket Meshram, Bahulashwa Kamble, Yashwant Borkar, Sushil Gajbhiye, Vishnu Mankar** to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Mandar Isasare
Electrical Engineering Department

Forwarded to:

Prof. A. V. Joshi
Project Coordinator

Dr. S. R. Vaishnav
Head of Department
Electrical Engineering

Dr. S.V.Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **FAULT DETECTION IN DISTRIBUTION LINE USING GPS TECHNIQUE IN REAL LIFE SCENARO** is approved work done by **Mr. Aniket Meshram, Mr. Baulashwa Kamble, Mr. Yashwant Borkar, Mr. Sushil Gajbhiye, Mr. Vishnu Mankar** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** during the academic year 2020-2021.

Prof. Mandar Isasare
Guide

Dr. S. R. Vaishnav
Head of Department

Project Examination held on

Internal Examiner/Guide
(Prof. M.S. Isasare)

External Examiner
(Dr. V. S. Dhule)

Design and Development of Agriculture fertilizer Spraying Drone and Multitasking System

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Mr. Lokesh Aarikar

Mr. Lokesh Zade

Mr. Harish Behaniya

Mr. Sahil Ajmani

Mr. Kapil Gaikwad

Mr. Mnajeet Kumar

Under the Guidance of

Dr. Vaishnavi Dhok

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Development of Agriculture Fertilizer Spraying Drone and Multitasking System"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Dr. Vaishnavi Dhok** Electrical Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificatecourse.

Place: Nagpur

Date: 30/8/2021

Name of The Students

Mr. Lokesh Aarikar

Mr. Harish Behaniya

Mr. Lokesh Zade

Mr. Kapil Gaikwad

Mr. Sahil Ajmani

Mr. Manjeet Kumar

CERTIFICATE

This is to certify that the project report entitled, **"Design and Development of Agriculture Fertilizer Spraying Drone and Multitasking System"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Mr. Lokesh Aarikar, Mr. Harish Behaniya, Mr. Lokesh Zade, Mr. Kapil Gaikwad, Mr. Sahil Ajmani, Mr. Manjeet Kumar** to **Dr. Babasaheb Ambedkar Technological University Lonere,** for the award of the degree of **Electrical Engineering** is a Bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

Prof. Ashutosh Joshi
Project Coordinator

Dr. Satish. R. Vaishnav
Head of the Department
Electrical Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Dr. S. V. Sonekar
Off. Principal
JDCOEM

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on Design and Fabrication of Remotely Operated Electric Welding Vehicle is approved work done by **Mr. Lokesh Aarikar, Mr. Harish Behaniya, Mr. Lokesh Zade, Mr. Kapil Gaikwad, Mr. Sahil Ajmani, Mr. Manjeet Kumar.** In partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Electrical Engineering at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological University Lonere, during the academic year 2020-2021.

Dr. Vaishnavi Dhok
Project Guide
Electrical Engineering

Dr. Satish. R. Vaishnav
Head of the Department
Electrical Engineering

Project Examination held on **29 JUNE 2021**

Internal Examiner/ Guide

External Examiner

J D College Of Engineering & Management, Nagpur

Session 2020-21

Project Report Of Electrical Engineering On

"IOT BASED INDUSTRIAL MONITORING & FAULT DETECTION SYSTEM"

Project Guide-

Pratiksha Pachbhai Ma'am

Submitted By,

Stephan Salve
Jaya Kasture
Rakshanda Kilawat
Sumit Hande
Monali Ramteke
Mamta Mazi

:-LITERATURE SURVEY:-

The core of any predictive maintenance system is a fault diagnosis system able to detect failures not only when they are happening, but also a pre-failure behavior. It is an advanced solution for the supervision level of the factory where in most cases only SCADAs and alarms based on variables values are considered. One of the main advantages
of predictive maintenance is its ability to provide useful information to the human supervisor showing what the real state of a plant or machine is and helping him in the planning of the factory operation. It is also capable of substituting the human operator in some systems taking decisions such as stopping the operation in case of a critical fault or scheduling maintenance operations.
The lack of historical data is the main problem that must be solved when designing the decision making component. It can be sometimes a problem to decide what the optimal classification method to use is, and it is always an added difficulty to fix the parameters of the system.
Usuallyconservative strategies are used.

-:ACKNOWLEDGEMENT:-

On the very outset of this abstract, we would like to extend our sincere and heartfelt obligation towards all the personages who have helped us in this endeavor.
We are ineffably indebted to our supervisor
Mrs.(**Pratisha Pachbhai madam)**
for conscientious guidance and encouragement to accomplish these many advancements in the project. We are also grateful towards the panel judges who enlightened us about the obstacles which may arise in the due course of the project and thus leading us in the right path. Also, it is with great pleasure that we acknowledge our sincere gratitude towards the college for the allowance of the facilities under the **Electrical Department** which are required for the project.

-:DECLARATION:-

I Hereby declare that the project work entitle **GROUP MEMBERS** submitted to the **JD COLLEGE OF ENGG** is a record of original work done by group under the guidance of **Pratisha Pachbhai madam.**

19TH JUNE 2021

:-ABSTRACT:-

- Internet of Things (IoT) is rapidly increasing technology.
- IOT is the network of physical objects or things embedded with electronic software, sensors, and network connectivity which enables these objects to collect and exchange data.
- IOT then deals with bringing control of physical devices over the internet.
- In this project, we are developing a system which will automatically monitor the industrial applications and generate Alerts/Alarms or make intelligent decisions using the concept of IoT.
- A number of sensors are deployed in our project to monitor industrial parameters like temperature, pressure, gas, etc.These parameters were carefully selected on the basis of the potential hazards they can cause to the normal working of the industry machine.
- The sensors used in our project are Temperature sensor DHT11, Gas sensor MQ9, Flame sensor LM393, Accelerometer ADxL335, Ultrasonic sensor HC-SR04,and PIR sensor.
- These sensors will collect their respective data and then send the same data to NodeMCU ESP8266 which also acts as a wifi module.

- **Key Words:** IoT, Sensors, Alerts/Alarms

"NOISELESS SPEED CONTROL OF DC MOTOR USING PULSE WIDTH MODULATION."

A Project Report submitted in partial fulfillment of the requirements For the award of the degree of

Bachelor of Engineering In

Electrical Engineering

Submitted by

Name of the Student

1. Arshiya Sheikh **2.Prajakta Patil**
3.Rohini Pachare **4.Shilpa Meshram**
5.Snehal Tembhurne **6. Shubham B. Ashtankar**

Under the Guidance

of

Prof. Yogesh mundhada

Education to Eternity

Electrical Engineering

J D College of Engineering and Management, Nagpur-

441501Affiliated to Dr. Babasaheb Ambedkar Techonological University,

Lonere, Raigad..

Year2020-2021

DECLARATION

We here by declare that the work presented in this project report entitled, **"Noiseless Speed Control Of DC Motor By Using Pulse Width Modulation "**in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Yogesh Mundhada ,Electrical Engineering ,J D College of Engineering and Management ,Nagpur .This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:Nagpur

Date:

Name of Student/Students

1.Arshiya Sheikh

2. Prajakta Patil

3. Rohini Pachare

4. Shilpa Meshram

5. Snehal Tembhurne

6. Shubham Astankar

CERTIFICATE

This is to certify that the project report entitled, **"Noiseless Speed Control Of DC Motor By Using Pulse Width Modulation"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Shubham B. Ashtankar ,Snehal Temburne , Arshiya Sheikh, Prajakta Patil , Rohini pachare, Shilpa Meshram** to **Dr. Babasaheb Ambedkar Techonological University ,Lonere, Raigad** for the ward of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Yogesh Mundhada
Electrical Engineering

Forwarded to:

Prof. A. V. Joshi
Project Coordinator

Dr.S.R.VAISHNAV
Head of the
DepartmentMechanical
Engineering

Dr.S.V.Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Noiseless Speed Control Of DC Motor By Using Pulse Width Modulation"** is approved work done by

Name of the Students

1. **Arshiya Sheikh**
2. **Prajakta Patil**
3. **Rohini Pachare**
4. **Shilpa Meshram**
5. **Snehal Tembhurne**
6. **Shubham Ashtankar**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Name of Branch** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Techonological University ,Lonere, Raigad.** .during the academic year 2019-2020.

Prof.Yogesh Mundhada
Guide

Dr.S.R. Vaishnav
Head of the Department

Project Examination held on

Internal Examiner/Guide

External Examiner

PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Mr. Saurabh Purushattamrao Jodh

Mr. Suyog Jagdishrao Debe

Mr. Shubham Kishorrao Nandanwar

Mr. Shubham Rajendra Bramhane

Ms. Puja Suresh Nikhade

Ms. Ashwini Kashirao Dudhkaware

Under the Guidance of

Prof. Ashutosh Joshi

Education to Eternity

Electrical Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE"** in the subject **Electrical Engineering Department** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof Ashutosh Joshi,** Electrical Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:

Name of Student

Mr. Saurabh Purushattamrao Jodh
Mr. Suyog Jagdishrao Debe
Mr. Shubham Kishorrao Nandanwar
Mr. Shubham Rajendra Bramhane
Ms. Puja Suresh Nikhade
Ms. Ashwini Kashirao Dudhkaware

CERTIFICATE

This is to certify that the project report entitled, **"PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE"** in the subject **Electrical Engineering Department** in the faculty of Science and Technology submitted by **Saurabh Purushattamrao Jodh, Suyog Jagdishrao Debe, Shubham Kishorrao Nandanwar, Shubham Rajendra Bramhane, Puja Suresh Nikhade, Ashwini Kashirao Dudhkaware** to **Dr. Babasaheb Ambedkar Technological University, Lonere.** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Ashutosh Joshi
Electrical Engineering Department

Forwarded to:

Prof. Ashutosh Joshi
Project Coordinator

Dr. S. R. Vaishnav
Head of the Department
Electrical Engineering

Dr. S.V. Sonekar
Off. Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol-Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **PHOTOVOLTAIC BOOST CONVERTER FED BLDC DRIVE** is approved work done by Mr. Saurabh Purushattamrao Jodh, Mr. Suyog Jagdishrao Debe, Mr. Shubham Kishorrao Nandanwar, Mr. Shubham Rajendra Bramhane, Ms. Puja Suresh Nikhade, Ms. Ashwini Kashirao Dudhkaware, in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2017-2021.

Prof. Ashutosh Joshi
Guide

Dr. S. R. Vaishnav
Head of the Department

Project Examination held on

Internal Examiner/ Guide

External Examiner

Design and Fabrication of Remotely Operated Underwater Electric Welding Vehicle

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Mr. Vikas Raghorte, Mr. Ankush Kolhe,

Mr. Tanmay Rale, Mr. Rushikesh Wagh,

Miss. Nikita Gadpayle

Under the Guidance of

Dr. Satish. R. Vaishnav

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Fabrication of Remotely Operated Underwater Electric Welding Vehicle"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Dr. Satish. R. Vaishnav** (HOD EE) Electrical Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of The Students

Mr. Vikas Raghorte

Mr. Ankush Kolhe

Mr. Tanmay Rale

Mr. Rushikesh Wagh

Miss. Nikita Gadpayle

CERTIFICATE

This is to certify that the project report entitled, **"Design and Fabrication of Remotely Operated Underwater Electric Welding Vehicle"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Mr. Vikas Raghorte, Mr. Ankush Kolhe, Mr. Tanmay Rale, Mr. Rushikesh Wagh, Miss. Nikita Gadpayle** to **Dr. Babasaheb Ambedkar Technological University Lonere,** for the award of the degree of **Electrical Engineering** is a Bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

Prof. Ashutosh Joshi
Project Coordinator

Dr. Satish. R. Vaishnav
Head of the Department
Electrical Engineering

Dr. S. V. Sonekar
Off. Principal
JDCOEM

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on Design and Fabrication of Remotely Operated Electric Welding Vehicle is approved work done by **Mr. Vikas Raghorte, Mr. Ankush Kolhe, Mr. Tanmay Rale, Mr. Rushikesh Wagh, Miss. Nikita Gadpayle.** In partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Electrical Engineering at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological University Lonere, during the academic year 2020-2021.

Dr. Satish. R. Vaishnav
Project Guide
Electrical Engineering

Dr. Satish. R. Vaishnav
Head of the Department
Electrical Engineering

Project Examination held on **29 JUNE 2021**

Internal Examiner/ Guide

External Examiner

DESIGN AND FABRICATION OF SOLAR- BASED WATER CLEANING BOAT

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

ELECTRICAL ENGINEERING

Submitted by

Apurva Dudhe

Shreya Ramteke

Shruti Narnaware

Aishwary Bagde

Shreyash Sontakke

Under the Guidance of

Prof. Sneha Jethani

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Fabrication of Solar-Based Water Cleaning Boat"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. **Sneha Jethani**, of Electrical Engineering Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of Students:

Apurva Dudhe

Shreya Ramteke

Shruti Narnaware

Aishwary Bagde

Shreyash Sontakke

CERTIFICATE

This is to certify that the project report entitled, **"Design and Fabrication of Solar- Based Water Cleaning Boat"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Apurva Dudhe, Shreya Ramteke, Shruti Narnaware, Aishwary Bagde, Shreyash Sontakke** to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Sneha Jethani)
Electrical Engineering

Forwarded to:

Mr. A. V. Joshi
Project Coordinator

Dr. S.R. Vaishnav
Head of the Department
Electrical Engineering

Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Design and Fabrication of Solar Based Water Cleaning Boat** is approved work done by Apurva Dudhe, Shreya Ramteke, Shruti Narnaware, Aishwary Bagde and Shreyash Sontakke in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** during the academic year 2020-2021.

Prof. Sneha Jethani

Guide

Dr. S.R. Vaishnav

Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

COMPARATIVE ANALYSIS OF VARIOUS CONFIGURATION TECHNIQUES TO IMPROVE PERFORMANCE OF SOLAR PV ARRAY

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Himani Patle
Samiksha Waghmare
Ashish Bramhankar
Aadesh Thool
Aabhishek Shende
Pawan Tangle

Under the Guidance of

Prof. P.V. Ambade

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Comparative analysis of various configurations techniques to improve performance of solar PV array"** in the subject of **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Mr. **P.V. Ambade**, Department of Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

Name of Students

Himani Patle

Samiksha Waghmare

Ashish Bramhankar

Aadesh Thool

Aabhishek Shende

Pawan Tangle

CERTIFICATE

This is to certify that the project report entitled, **"Comparative analysis of various configurations techniques to improve performance of solar PV array"** in the subject of **Electrical Engineering** in the faculty of Science and Technology submitted by **Himani Patle, Samiksha Waghmare, Ashish Bramhankar, Aadesh Thool, Aabhishek Shende, Pawan Tangle,** to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Mr. P.V. Ambade)
Electrical Engineering

Forwarded to:

(Mr. A.V. Joshi)
Project Coordinator

(Dr. S.R. Vaishnav)
Head of the Department
Electrical Engineering

(Dr. S.V. Sonekar)
Off. Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **COMPARATIVE ANALYSIS OF VARIOUS CONFIGURATIONS TECHNIQUES TO IMPROVE PERFORMANCE OF SOLAR PV ARRAY** is approved work done by

Name of the Students

Himani Patle
Samiksha Waghmare
Ashish Bramhankar
Aadesh Thool
Aabhishek Shende
Pawan Tangle

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** during the academic year 2020-2021.

Mr. P.V. Ambade
Guide

Dr. S.R. Vaishnav
Head of Department

Project Examination held on 13/07/2021

Internal Examiner/ Guide
(Mr. P. V. Ambade)

External Examiner
(Mr. M. S. Isasare)

SOLAR PANEL FAULT DETECTION BY USING AURDINO

A Project Report submitted in partial fulfillment of the requirements
for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Ankita Warkhade

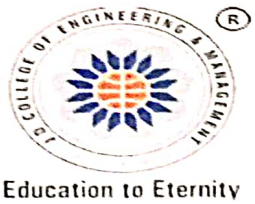
Bhuwaneshwari Gabhane

Mrunali Bomanwar

Payal Jambhulkar

Under the Guidance of

Miss.Pratiksha Panchbhai



Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr.BabasahebAmbedkar technological University Lonere,Raigad.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project reportentitled, **"SOLAR PANEL FAULT DETECTION BY USING AURDINO"** in the subject **Electrical Engineering**in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Miss. Pratiksha Panchbhai, Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree ordiploma or certificate course.

Place: Nagpur
Date: 3-9-21

Ankita Warkhade
Bhuwaneshwari Gabhane
Mrunali Bomanwar
Payal Jambhulkar

CERTIFICATE

This is to certify the project entitled, **SOLAR PANEL FAULT DETECTION BY USING AURTDINO** in the subject **Electrical Engineering** in the faculty of science and Technology submitted by **Ankita Warkhade , Bhuwaneshwari Gabhane, Mrunali Bomanwar, Payal jambhulkar** to Dr. Babasaheb Ambedkar technological University, Lonere, Raigadfor the award of the degree of **Bachelor of Technology** is a Bonafide record of work carried out by them under my supervision. The contents of this project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma .

Prof. Pratiksha Panchbhai

Electrical Department

Forwarded for:

Prof. Ashutosh Joshi
Project coordinator

Dr. Satish Vaishnav
Head of the Department
Electrical Department.

Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on SOLAR PANEL FAULT DETECTION BY USING AURDINO is approved work done by

Ankita Warkhade
Bhuwaneshwari Gabhane
Mrunali Bomanwar
Payal Jambhulkar

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological **University, Lonere, Raigad** during the academic year 2020-2021.

Miss.Pratiksha Panchbhai
Guide

Dr. Satish Vaishnav
Head of the Department

Project Examination heldon 30th july 2021

InternalExaminer/ Guide

External Examiner

SOLAR POWER MONITORING SYSTEM USING IOT

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering

In

Electrical Engineering

Submitted by

Nikesh Gajbhiye

Akshay Zarodiya

Pravin Badole

Bhushan Giri

Prachi Jambhulkar

Under the Guidance of

Prof. S.A Harane

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur- 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2021-2022

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IOT BASED SOLAR POWER MONITORING SYSTEM"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof._S.A Harane, Department Of Electrical Engineering**, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:Nagpur
Date:

Nikesh Gajbhiye
Akshay Zarodiya
Pravin Badole
Prachi Jambhulkar
Bhushan Giri

CERTIFICATE

This is to certify that the project report entitled, **"SOLAR POWER MONITORING SYSTEM USING IOT"** in the subject **ELECTRICAL ENGINEERING** in the faculty of Science and Technology submitted by **"Nikesh Gajbhiye, Akshay Zarodiya, Pravin Badole, Prachi Jambhulkar, Bhushan Giri" to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of Bachelor of Technology is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. S.A Harane)
Department of Electrical Engineering

Forwarded to

(Prof. Ashutosh Joshi)
Project Coordinator

(Dr. Satish Vaishnav)
Head Of Department
Department of Electrical Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

(DR. S .V. SONEKAR)
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on SOLAR POWER MONITORING SYSTEM USING IOT is approved work done by **Nikesh Gajbhiye, Akshay Zarodiya, Pravin Badole, Prachi Jambhulkar, Bhushan Giri** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2021-2022.

Prof.S.A Harane
Guide

Dr. S.R Vaishnav
Head of the Department

Project Examination held on 8/07/2022

Internal Examiner/ Guide

External Examiner

"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"

A Project Report submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

Under the Guidance of

Mr. A. V. Joshi

(Assistant Professor)

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur - 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad

Year 2021-2022

"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"

A Project Report submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

Under the Guidance of

Mr. A. V. Joshi
(Assistant Professor)

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year 2021-2022

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"** in the subject of **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. A. V. Joshi** Department of Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 08/07/2022

Name of Students
Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

CERTIFICATE

This is to certify that the project report entitled, "Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology" in the subject of Electrical Engineering in the faculty of Science and Technology submitted by Piyush H. Kumbhare, **Swapnil N. Chouragade, Priyal Y. Pounikar, Ashwini Parise, Badal Rahangdale, Ajay Kande,** to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Mr. A. V. Joshi)
Ass. Prof. Electrical Engineering Dept.

Forwarded to:

(Prof. A.V. Joshi)
Project Coordinator

(Dr. S.R. Vaishnav)
Head of the Department
Electrical Engineering

(Dr. S.V. Sonekar)
Principal

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"** is approved work done by **Piyush H. Kumbhare, Swapnil N. Chouragade, Priyal Y. Pounikar, Ashwini Parise, Badal Rahangdale, Ajay Kande** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology in Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** during the academic year 2020-2021.

Prof. A.V. Joshi
Guide

Dr. S.R. Vaishnav
Head of Department (EE)

Project Examination held on 08/07/2022

Internal Examiner/ Guide

External Examiner

"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"

A Project Report submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

Under the Guidance of

Mr. A. V. Joshi

(Assistant Professor)

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur - 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad

Year 2021-2022

"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"

A Project Report submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

Under the Guidance of

Mr. A. V. Joshi
(Assistant Professor)

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad.

Year 2021-2022

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"** in the subject of **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. A. V. Joshi** Department of Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 08/07/2022

Name of Students
Piyush H. Kumbhare
Swapnil N. Chouragade
Priyal Y. Pounikar
Ashwini Parise
Badal Rahangdale
Ajay Kande

CERTIFICATE

This is to certify that the project report entitled, "Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology" in the subject of Electrical Engineering in the faculty of Science and Technology submitted by Piyush H. Kumbhare, **Swapnil N. Chouragade, Priyal Y. Pounikar, Ashwini Parise, Badal Rahangdale, Ajay Kande,** to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Mr. A. V. Joshi)
Ass. Prof. Electrical Engineering Dept.

Forwarded to:

(Prof. A.V. Joshi)
Project Coordinator

(Dr. S.R. Vaishnav)
Head of the Department
Electrical Engineering

(Dr. S.V. Sonekar)
Principal

J.D. College of Engineering & Management
Khandala, Kalmi Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Implementation of Solar Powered BLDC Motor Drive Using SEPIC Converter Topology"** is approved work done by **Piyush H. Kumbhare, Swapnil N. Chouragade, Priyal Y. Pounikar, Ashwini Parise, Badal Rahangdale, Ajay Kande** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology in Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad** during the academic year 2020-2021.

Prof. A. V. Joshi
Guide

Dr. S.R. Vaishnav
Head of Department (EE)

Project Examination held on 08/07/2022

Internal Examiner/ Guide

External Examiner

ZIGBEE BASED SMART PLUG TO CONTROL POWER CONSUMPTION IN HOME ENERGY MANAGEMENT SYSTEM VIA MATLAB SIMULATION

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Engineering

In

Electrical Engineering

Submitted by

Mansi Somkuwar

Sharvari Doke

Nihar Gadhawe

Prajwal Duryodhan

Swapnil Dangare

Under the Guidance of

Prof. Pranay Ambade

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2021-22

DECLARATION

We hereby declare that the work presented in this project report entitled, **"ZigBee Based Smart Plug to Control Power Consumption in Home Energy Management System via MATLAB Simulation"** in the subject **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Pranay Ambade**, Department of Electrical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:
Date:

Mansi Somkuwar
Sharvari Doke
Nihar Gadhawe
Prajwal Duryodhan
Swapnil Dangare

CERTIFICATE

This is to certify that the project report entitled, **"ZigBee Based Smart Plug to Control Power Consumption in Home Energy Management System via MATLAB Simulation"** in the subject **Electrical Engineering** in the faculty of Science and Technology submitted by **Mansi Somkuwar, Sharvari Doke, Nihar Gadhawe, Prajwal Duryodhan, Swapnil Dangare** to **Dr. Babasaheb Ambedkar Technology University, Lonere,** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Pranay Ambade)
Department of Electrical Engineering

Forwarded to:

(Prof. Ashutosh Joshi)
Project Coordinator

(Dr. S.R. Vaishnav)
Head of the Department
Department of Electrical Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

(Dr. S.V.Sonekar)
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **ZIGBEE BASED SMART PLUG TO CONTROL POWER CONSUMPTION IN HOME ENERGY MANAGEMENT SYSTEM VIA MATLAB SIMULATION** is approved work done by

Mansi Somkuwar
Sharvari Doke
Nihar Gadhawe
Prajwal Duryodhan
Swapnil Dangare

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technology University, Lonere.** during the academic year 2021-2022.

Prof. Pranay Ambade
Guide

Dr. S.R. Vaishnav
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

"ANALYSIS OF SOLAR PHOTOVOLTAIC ARRAY CONFIGURATION UNDER CHANGING ILLUMINATION CONDITION"

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electrical Engineering

Submitted by

Ravina Nagdeve

Bhagyashree Badge

Shubham Dongarwar

Shamal Dorshetwar

Archana Gahane

Prashik Fulzale

Under the Guidance of

Dr.Vaishnavi Dhok

Education to Eternity

Department of Electrical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad,

2021-2022

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Analysis of solar photovoltaic Array Configuration Under changing illumination conditions"** in the subject of **Electrical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr. **Vaishnavi Dhok**, Name of Electrical Engineering, Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Ravina Nagdeve

Bhagyashree Badge

Shubham Dongarwar

Shamal Dorshetwar

Archana Gahane

Prashik Fulzale

CERTIFICATE

This is to certify that the project report entitled, **"Analysis of solar photovoltaic Array Configuration Under changing illumination conditions"** in the subject of **Electrical Engineering** in the faculty of Science and Technology submitted by **Ravina Nagdeve, Bhageyashree Badge, Shubham Dongarwar, Shamal Dorshetwar, Archana Gahane, Prashik Fulzale** to Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad. for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Dr.Vaishnavi Dhok)
Electrical Engineering Department JDCOEM

Forwarded to:

(Prof. A. V. Joshi)
Project Coordinator

(Dr. S. R. Vaishanav)
Head of the Department
Electrical Engineering Department

(Dr. S. V. Sonekar)
Principal

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Analysis of solar photovoltaic Array Configuration Under changing illumination conditions** is approved work done by **Ravina Nagdeve, Bhageyashree Badge, Shubham Dongarwar, Shamal Dorshetwar, Archana Gahane, Prashik Fulzale** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electrical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedakar Technological University, Lonere, Raigad,** during the academic year 2021-2022.

Dr.Vaishnavi Dhok
Guide

Dr. S. R. Vaishanav
Head of the Department

Project Examination heldon 08/07/2022

Internal Examiner/ Guide
Examiner

External

A
REPORT ON

"Weather Monitoring System Using IOT"

By

BT190046ET	BT190062ET	dbatu to autonomus	BT200603ET	BT200613ET
BT190136ET	BT190125ET	dbatu to autonomus	BT200604ET	BT200614ET
BT190251ET	BT190065ET	BT190256ET	BT200605ET	BT200615ET
BT190118ET	BT190218ET	dbatu to autonomus	BT200606ET	BT200616ET
BT190137ET	BT190148ET	dbatu to autonomus	BT200607ET	BT200617ET
BT190047ET	BT190246ET	dbatu to autonomus	BT200608ET	BT200618ET
BT190174ET	BT190147ET	BT190141ET	BT200609ET	BT200619ET
BT190219ET	BT190242ET	dbatu to autonomus	BT200610ET	BT200620ET
BT190097ET	BT190278ET	BT190239ET	BT200611ET	BT200621ET
BT190066ET	BT200638ET		BT200612ET	BT200622ET

BT200623ET	BT200639ET	BT200628ET	BT200601ET
BT200624ET	BT200640ET	BT200629ET	BT200602ET
BT200625ET	BT200641ET	BT200630ET	BT200630ET
BT200626ET	BT200642ET	BT200631ET	BT200631ET
BT200627ET	BT200643ET	BT200632ET	BT200632ET

Under the Guidance of
Prof. Firoz .Akhtar

(Assistant Professor)

Education To Eternity

Department of Electronics and Telecommunication Engineering

J D College of Engineering & Management Nagpur

2020-2021

CERTIFICATE

This is to certify that the registration

BT190046ET	BT190062ET	dbatu to autonomus	BT200603ET	BT200613ET
BT190136ET	BT190125ET	dbatu to autonomus	BT200604ET	BT200614ET
BT190251ET	BT190065ET	BT190256ET	BT200605ET	BT200615ET
BT190118ET	BT190218ET	dbatu to autonomus	BT200606ET	BT200616ET
BT190137ET	BT190148ET	dbatu to autonomus	BT200607ET	BT200617ET
BT190047ET	BT190246ET	dbatu to autonomus	BT200608ET	BT200618ET
BT190174ET	BT190147ET	BT190141ET	BT200609ET	BT200619ET
BT190219ET	BT190242ET	dbatu to autonomus	BT200610ET	BT200620ET
BT190097ET	BT190278ET	BT190239ET	BT200611ET	BT200621ET
BT190066ET	BT200638ET		BT200612ET	BT200622ET

BT200623ET	BT200639ET	BT200628ET	BT200601ET
BT200624ET	BT200640ET	BT200629ET	BT200602ET
BT200625ET	BT200641ET	BT200630ET	BT200630ET
BT200626ET	BT200642ET	BT200631ET	BT200631ET
BT200627ET	BT200643ET	BT200632ET	BT200632ET

have completed the project on "Weather Monitoring System Using IOT" during year 2020-2021.

Faculty In -Charge

Prof. Firoz .Akhtar

Date: 25/03/2021

JAIDEV EDUCATION SOCIETY'S

J D COLLEGE OF ENGINEERING & MANAGEMENT, NAGPUR

Department of Electronics Engineering \ Electronics &Telecommunication Engineering

(An Autonomous Institute, with NAAC "A" Grade)

Rectifying Ideas, Amplifying Knowledge"

Session 2020 – 2021

Education to Eternity

FIELD PROJECT REPORT

Attendance for "WEATHER MONITORING SYSTEM USING IOT", Nagpur" 2ND YEAR

Sr. No.	Name of the Student	Signature
1	AKANSHA RAJU POTBHARE	
2	GANGASAGAR GANGADHARRAO YAMMEWAR	
3	MAYURI CHANDRAMANI BARMATE	
4	NIKITA SUBHASH GANVIR	
5	POOJA NARAYAN DUBUKWAD	
6	ROHINI RAMAJI KUMBHALKAR	
7	SAKSHI DILIP BANSOD	
8	VAIDEHI RAJEDNRA MESHRAM	
9	VAISHNAVI SIDDHARTH MESHRAM	
10	AKASH MANOHAR SAHASTRABUDDHE	
11	ASHISH GAJANANRAO YESANKAR	
12	GANESH ANANDRAO MUNGAL	
13	GAURAV KISHOR ZADE	
14	DAMINI VIJAY MANAPURE	
15	SARANG DHANRAJ BAWANKULE	
16	SAMEER NOKLAL PATLE	
17	PRANAY PRADEEP NETANRAO	
18	RIUCHIKA MANOHAR CHATAP	
19	RUTIKA MOTIRAM KUNJAM	
20	GAYATRI PADMAKAR BHOSKAR	
21	SHRADDHA GANGADHAR URKUDE	
22	PRIYANKA DUDHNATH KOTPALLIWAR	
23	VRUSHABH ANKUSHRAO CHANDEKAR	
24	SIDDHANT SHANKAR YELANE	
25	BHUSHAN SHAILENDRA BHANDARAKAR	
26	PRACHI SANJAY SATPUTE	
27	ABHISHEK ABHAY SHANIWARE	
28	CHAITALI CHUDAMAN GIRIPUNJE	
29	AKASH BECHAN YADAV	
30	AKSHAY ASHOK MESHRAM	
31	AKSHAY SUNIL PATIL	
32	AMIR SABIR SHEIKH	
33	ANKIT SURESH SHENDE	
34	ANKUSH SHIVLAL BHURE	
35	ANUJA AVINASH PATIL	
36	ATUL ARUN RAMTEKE	
37	BHANUPRIYA DEVDAS MESHRAM	
38	BHARAT PARMESHWARAN TEWAR	
39	DIKSHA SUNIL WASNIK	
40	DIPASHRI KHUSHAL WADGAONKAR	
41	DISHANT SANDESH GAJBHIYE	

42	HARISH GOVINDAJI MAKADE	
43	KAJAL SANTOSH GHODICHOR	
44	KAJOL NARAYAN KAMBLE	
45	KHUSHBU RAKESH PATEL	
46	KOMAL MORESHWAR THOTE	
47	MOHD HUZAILFA A SALIM KHAN	
48	PALLAVI RAJKUMAR KANOJE	
49	PRACHIKA ANIL HUMNE	
50	PRAJWAL GOPALRAO MOHOKAR	
51	PRAJWALIT PRABHAKAR DEWAIKAR	
52	PRANAY PADMAKAR THAKRE	
53	PREMANAND RAMKRUSHNA NANDANWAR	
54	PRIYA PREMRAJ BHAD	
55	PUJA VIMALCHAND INDULKAR	
56	ROHAN SIYARAM PATEL	
57	SAGAR ARUN MAHAJAN	
58	SAKSHI VIKAS NATHE	
59	SAMRUDHA SANJAY GORSHETTIWAR	
60	SHEETAL CHANDRAPRAKASH URKUDE	
61	SHILVAN CHANDRASHEKHAR KAMBLE	
62	SHIVANI SURENDRA DHABAI	
63	SHIVENDRA KAMLESHWAR PATEL	
64	SHUBHAM RAMESH SAGULALE	
65	SOUMYA OMPRAKASH NAIDU	
66	SOURABH RAJU CHINCHKHEDE	
67	SURAKSHA SUKHADEV LANJEWAR	
68	TARSEE SATOSH YADAV	
69	VAISHALI TEJRAM DESHMUKH	
70	VAISHNAVI RAVINDRA GAURKAR	
71	VISHAL PRABHAKAR THAWARE	

Class Incharge **Academic Incharge** **HOD (EN/ETC)**

A
REPORT ON
"IOT ENABLED HEALTH MONITORING SYSTEM"

By

JBE17328 JBTECH18304 JBTECH18305 JBTECH19205 JBTECH19304
JBE17010 JBTECH18039 JBTECH18347 JBTECH19252 JBTECH19171
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JBTECH19290 JBTECH19423
JBTECH19325 JBE17208
JBE16606
JBE13217

Under the Guidance of

Prof. Gayatri Padole
(Assistant Professor)

Education To Eternity

Department of Electronics and Telecommunication Engineering
J D College of Engineering & Management Nagpur

2020-2021

CERTIFICATE

This is to certify that the registration

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have completed the project on **"IOT ENABLED HEALTH MONITORING SYSTEM"**during year 2020-2021.

Faculty In -Charge

Prof. Gayatri Padole

Date: 26/03/2021

JAIDEV EDUCATION SOCIETY'S

J D COLLEGE OF ENGINEERING & MANAGEMENT, NAGPUR

Department of Electronics Engineering \ Electronics &Telecommunication Engineering

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Rectifying Ideas, Amplifying Knowledge"

Session 2020 – 2021

Education to Eternity

FIELD PROJECT REPORT

Attendance for ""IOT ENABLED HEALTH MONITORING SYSTEM" 3RD YEAR

Sr. No.	Name of the Student	Signature
1	DAMINI BALKRUSHANA CHAUDHARI	
2	MOHIT MANOJ MADAVI	
3	NIKHIL RAJU MAHURE	
4	HARISH OMPRAKASH GOUPALE	
5	BHAGYASHRI SHAMPRASAD PATLE	
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7	ADITYA VILASRAO DHAWALE	
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17	HEMANT GANESH SHENDE	
18	HANUMAN BABARAO JAMBHULKAR	
19	RITESH RAVINDRA KHANGAR	
20	RUTUJA NANDLAL MESHRAM	R. Meshram.
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22	MAYUR TULSIRAM HATTIMARE	
23	SHEFALI NANDKISHOR MESHRAM	
24	DNYANDEEP MAHADEV KURZEKAR	Dnyandeep K.
25	SOMESHWAR CHHAGAN MUDDAMWAR	
26	NILESH RAMBHAU PATHRABE	
27	CHAITANYA MAHESH THISKE	
28	LOKESH SEESHARAO YELANE	
29	MEGHA RUPCHAND MESHRAM	
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62	SHRUTIKA GENDALAL MANGATE	
63	AMIT VINAYAKRAO HAJARE	
64	DOLLY YADORAO BARAPATRE	
65	VIDYA ISHWAR KINEKAR	
66	GULSHAN RAJU GAIKWAD	
67	MAHESH RUNNAWARE	
68	NISHIGANDHA PRADEEP KADWE	

Class Incharge **Academic Incharge** **HOD (EN/ETC)**

A
REPORT ON

"Weather Monitoring System Using IOT"

By

BT190046ET	BT190062ET	dbatu to autonomus	BT200603ET	BT200613ET
BT190136ET	BT190125ET	dbatu to autonomus	BT200604ET	BT200614ET
BT190251ET	BT190065ET	BT190256ET	BT200605ET	BT200615ET
BT190118ET	BT190218ET	dbatu to autonomus	BT200606ET	BT200616ET
BT190137ET	BT190148ET	dbatu to autonomus	BT200607ET	BT200617ET
BT190047ET	BT190246ET	dbatu to autonomus	BT200608ET	BT200618ET
BT190174ET	BT190147ET	BT190141ET	BT200609ET	BT200619ET
BT190219ET	BT190242ET	dbatu to autonomus	BT200610ET	BT200620ET
BT190097ET	BT190278ET	BT190239ET	BT200611ET	BT200621ET
BT190066ET	BT200638ET		BT200612ET	BT200622ET

BT200623ET	BT200639ET	BT200628ET	BT200601ET
BT200624ET	BT200640ET	BT200629ET	BT200602ET
BT200625ET	BT200641ET	BT200630ET	BT200630ET
BT200626ET	BT200642ET	BT200631ET	BT200631ET
BT200627ET	BT200643ET	BT200632ET	BT200632ET

Under the Guidance of
Prof. Firoz .Akhtar

(Assistant Professor)

Education To Eternity

Department of Electronics and Telecommunication Engineering

J D College of Engineering & Management Nagpur

2020-2021

CERTIFICATE

This is to certify that the registration

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BT200627ET	BT200643ET	BT200632ET	BT200632ET

have completed the project on "Weather Monitoring System Using IOT" during year 2020-2021.

Faculty In -Charge

Prof. Firoz .Akhtar

Date: 25/03/2021

JAIDEV EDUCATION SOCIETY'S

J D COLLEGE OF ENGINEERING & MANAGEMENT, NAGPUR

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Session 2020 – 2021

Education to Eternity

FIELD PROJECT REPORT

Attendance for "WEATHER MONITORING SYSTEM USING IOT", Nagpur" 2ND YEAR

Sr. No.	Name of the Student	Signature
1	AKANSHA RAJU POTBHARE	
2	GANGASAGAR GANGADHARRAO YAMMEWAR	
3	MAYURI CHANDRAMANI BARMATE	
4	NIKITA SUBHASH GANVIR	
5	POOJA NARAYAN DUBUKWAD	
6	ROHINI RAMAJI KUMBHALKAR	
7	SAKSHI DILIP BANSOD	
8	VAIDEHI RAJEDNRA MESHRAM	
9	VAISHNAVI SIDDHARTH MESHRAM	
10	AKASH MANOHAR SAHASTRABUDDHE	
11	ASHISH GAJANANRAO YESANKAR	
12	GANESH ANANDRAO MUNGAL	
13	GAURAV KISHOR ZADE	
14	DAMINI VIJAY MANAPURE	
15	SARANG DHANRAJ BAWANKULE	
16	SAMEER NOKLAL PATLE	
17	PRANAY PRADEEP NETANRAO	
18	RIUCHIKA MANOHAR CHATAP	
19	RUTIKA MOTIRAM KUNJAM	
20	GAYATRI PADMAKAR BHOSKAR	
21	SHRADDHA GANGADHAR URKUDE	
22	PRIYANKA DUDHNATH KOTPALLIWAR	
23	VRUSHABH ANKUSHRAO CHANDEKAR	
24	SIDDHANT SHANKAR YELANE	
25	BHUSHAN SHAILENDRA BHANDARAKAR	
26	PRACHI SANJAY SATPUTE	
27	ABHISHEK ABHAY SHANIWARE	
28	CHAITALI CHUDAMAN GIRIPUNJE	
29	AKASH BECHAN YADAV	
30	AKSHAY ASHOK MESHRAM	
31	AKSHAY SUNIL PATIL	
32	AMIR SABIR SHEIKH	
33	ANKIT SURESH SHENDE	
34	ANKUSH SHIVLAL BHURE	
35	ANUJA AVINASH PATIL	
36	ATUL ARUN RAMTEKE	
37	BHANUPRIYA DEVDAS MESHRAM	
38	BHARAT PARMESHWARAN TEWAR	
39	DIKSHA SUNIL WASNIK	
40	DIPASHRI KHUSHAL WADGAONKAR	
41	DISHANT SANDESH GAJBHIYE	

42	HARISH GOVINDAJI MAKADE	
43	KAJAL SANTOSH GHODICHOR	
44	KAJOL NARAYAN KAMBLE	
45	KHUSHBU RAKESH PATEL	
46	KOMAL MORESHWAR THOTE	
47	MOHD HUZAILFA A SALIM KHAN	
48	PALLAVI RAJKUMAR KANOJE	
49	PRACHIKA ANIL HUMNE	
50	PRAJWAL GOPALRAO MOHOKAR	
51	PRAJWALIT PRABHAKAR DEWAIKAR	
52	PRANAY PADMAKAR THAKRE	
53	PREMANAND RAMKRUSHNA NANDANWAR	
54	PRIYA PREMRAJ BHAD	
55	PUJA VIMALCHAND INDULKAR	
56	ROHAN SIYARAM PATEL	
57	SAGAR ARUN MAHAJAN	
58	SAKSHI VIKAS NATHE	
59	SAMRUDHA SANJAY GORSHETTIWAR	
60	SHEETAL CHANDRAPRAKASH URKUDE	
61	SHILVAN CHANDRASHEKHAR KAMBLE	
62	SHIVANI SURENDRA DHABAI	
63	SHIVENDRA KAMLESHWAR PATEL	
64	SHUBHAM RAMESH SAGULALE	
65	SOUMYA OMPRAKASH NAIDU	
66	SOURABH RAJU CHINCHKHEDE	
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Class Incharge **Academic Incharge** **HOD (EN/ETC)**

A
REPORT ON
"IOT ENABLED HEALTH MONITORING SYSTEM"

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Under the Guidance of

Prof. Gayatri Padole
(Assistant Professor)

Education To Eternity

Department of Electronics and Telecommunication Engineering
J D College of Engineering & Management Nagpur

2020-2021

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Faculty In -Charge

Prof. Gayatri Padole

Date: 26/03/2021

JAIDEV EDUCATION SOCIETY'S

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Education to Eternity

FIELD PROJECT REPORT

Attendance for ""IOT ENABLED HEALTH MONITORING SYSTEM" 3RD YEAR

Sr. No.	Name of the Student	Signature
1	DAMINI BALKRUSHANA CHAUDHARI	
2	MOHIT MANOJ MADAVI	
3	NIKHIL RAJU MAHURE	
4	HARISH OMPRAKASH GOUPALE	
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66	GULSHAN RAJU GAIKWAD	
67	MAHESH RUNNAWARE	
68	NISHIGANDHA PRADEEP KADWE	

Class Incharge **Academic Incharge** **HOD (EN/ETC)**

TRANSFORMER MONITERING SYSTEM USING IOT

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering

In

Electronics and Telecommunication Engineering

Submitted by

Miss. Payal Nannewar **Miss. Diksha Mangate**

Miss. Rupali Gajapure **Miss. Swinal Tirpude**

Mr. Abrar Shaikh

Under the Guidance of

Prof. Avinash Ikhar

Education to Eternity

Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020 - 2021

TRANSFORMER MONITORING SYSTEM USING IOT

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Engineering

In

Electronics and Telecommunication Engineering

Submitted by

Miss. Payal Nannewar **Miss. Diksha Mangate**

Miss. Rupali Gajapure **Miss. Swinal Tirpude**

Mr. Abrar Shaikh

Under the Guidance of

Prof. Avinash Ikhar

Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020 - 2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Transformer Monitoring System Using IoT"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Avinash Ikhar** Electronics and Telecommunication, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 17th August 2021

Miss. Payal Nannewar

Miss. Rupali Gajapure

Miss. Swinal Tirpude

Miss. Dikha Mangate

Mr. Abrar Shaikh

CERTIFICATE

This is to certify that the project report entitled, **"Transformer Monitoring System Using IoT"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology submitted by **Miss. Payal Nannewar, Miss. Diksha Mangate, Miss. Rupali Gajapure , Miss. Swinal Tirpude, Mr. Abrar Shaikh** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Avinash Ikhar
Department of EN/ETC Engineering

Forwarded to:

Prof. Amol Dhankar
Project Coordinator
Department of EN/ETC Engineering

N.N.Gyanchandani

Head of the Department
Department of EN/ETC Engineering

HOD, Dept. of EN/ETC
JD College of Engineering & Management, Nagpur

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Dr. S.V. Sonekar,
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **TRANSFORMER MONITORING SYSTEM USING IOT** is approved work done by

Miss. Payal Nannewar

Miss. Diksha Mangate

Miss. Rupali Gajapure

Miss. Swinal Tirpude

Mr. Abrar Shaikh

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics and Telecommunication Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020 - 2021

Prof. Avinash Ikhar
Guide

N.N.Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on
28th June 2021

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr.S.V.Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **N.N.Gyanchandani** Head, Department of EN/ETC J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Avinash Ikhar**, Department of EN/ETC, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members Of EN/ETC Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Miss. Payal Nannewar
Miss. Diksha Mangate
Miss. Rupali Gajapure
Miss. Swinal Tirpude
Mr. Abrar Shaikh

ABSTRACT

Distribution companies have a strong competition among them to provide reliable power at a low cost. As per reports, maintenance as well as replacement of transformers is found to be an expensive exercise for all companies. Keeping this factor in mind, IoT based distribution transtormer monitoring system is developed in this work to monitor health conditions of distribution transformers on regular intervals. Health index is determined on the basis of change in voltage, temperature variations and load ability, which are measured using sensors. Arduino has been selected as the processor for the sensed data while Thing Speak has been selected as the IoT platform. This low cost system can be installed in transformer at any location to get monitored remotely, which not only determines health condition but also is helpful in predicting its life span as well

"IOT Based Design Approach For Accident Alert And Tracking System With First Aid Facility".

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

ELECTRONICS ENGINEERING

Submitted by

Prachu Patil

Kalyani Tumsare

Ritika Zalke

Bhavana Shiwankar

Shivani Singh

Under the Guidance of

Prof. Shailesh Sakhare

Education to Eternity

ELECTRONICS ENGINEERING

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020 - 2021

Template 3

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IOT Based Design Approach For Accident Alert And Tracking System With First Aid Facility"** in the subject **Electronics Engineering,** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Shailesh Sakhare, Electronic and Telecommunication Engineering,, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

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Kalyani Tumsare Kalyani

Ritika Zalke Zalke

Bhavana Shiwankar Bhavana

Shivani Singh SSingh

Template 4

CERTIFICATE

This is to certify that the project report entitled, **"IOT Based Design Approach For Accident Alert And Tracking System With First Aid Facility"** in the subject **Electronics Engineering** in the faculty of Science and Technology submitted by **Prachu Patil, Kalyani Tumsare, Ritika Zalke, Bhavana Shiwankar, Shivani Singh** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

14/09/2021

Prof. Shailesh Skhare
Electronic &
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Forwarded to:

14/09/21

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Head of the Department
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Prof. Amol Dhankar
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Template 5

CERTIFICATE OF APPROVAL

This is to certify that the Project Report "**IOT Based Design Approach for Accident Alert and Tracking System with First Aid Facility**" is approved work done by **Prachu Patil, Ritika Zalke, Kalyani Tumsare, Bhavana Shiwankar, Shivani Singh.** In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

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Prof. Shailesh Sakhare
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Internal Examiner/ Guide **External Examiner**

TEMPLATE 7

ACKNOWLEDEMENT

We express our sincere gratitude, for allowing us to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. N. N. Gyanchandani** Head, Department of Electronic And Telecommunication Engineering J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar,** Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shailesh Sakhare** , Department Electronics / Electronic And Telecommunication , J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics / Electronic and Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout this work.

Name of the students	*Roll no.*
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Ritika Zalke	EN (09)
Bhavana Shiwankar	EN (11)
Shivani Singh	ETC B (32)

ABSTRACT

Traffic hazards are a huge problem facing the world. One of the most major causes of traffic hazards is increasing the dense and vehicle populations. Increasing traffic hazards is one of the crucial challenges in the greater numbers of deaths that occur in the world due to these road accidents. So there are requirements of imparting the good transportations facilities so that can be decreasing the ratio of accidents and save the life of the people. One of the solutions that are proposed for designing vehicle accident detection is using the GPS, GSM, accelerometer, Arduino Uno technology, and vibration sensors. This system has three phases of accident prevention and accident detections. The first phase is the savior the detection phase is carried out by using the vibrations sensors that will detect and alter the people by sending SMS using GSM module that is containing the user's data is stored in android applications this data is taking GPS module. The second phase is, moderate accidents occur then with the help of GPS module locations will be detected after that the address of the nearby hospital gets the message of accidents that occur in nearby areas then they provide facilities to the accidents patients. The third phase is normal accidents that after the location detecting patient receive a message from hospital that I.e. Please take some precautions.

To reduce the loss of life that occurred due to road accident rates, an intelligent setup has been designed that uses the internet of things (IoT). They lose their lives because of medical services and family members not getting information at the proper time. The setup device will project immediate details like location, accident type, personals details of the user's field. This paper presents a brief overview of the technology which will be going to detect the location of a person whose accident has occurred, and, according to the scenario of the accident, the medical facilities will be provided to the user. In this paper, an efficient wireless system is designed for vehicle accident detection and reporting by using an accelerometer, GPS, and vibration sensor. In this device, an accelerometer sensor is used to detect a crash, GPS is used to detect location, and a vibration sensor is a device that measures the amount and frequency of vibration in the given system. If the accident occurs,

SMART STICK FOR THE BLIND & VISUALLY IMPAIRED PEOPLE

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology
In
Electronics and Telecommunication Engineering

Submitted by

Ms. Punam Patel
Ms. Rajani Kolhe
Ms. Priyanka Prasad
Ms. Pratibha Thakre
Ms. Kajal Dhole
Ms. Apeksha Rodge

Under the Guidance of

Prof. firoz Akhtar

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Department of Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

DECLARATION

We hereby declare that The work presented in this project report entitled, **"Smart Stick For The Blind And Visually Impaired People"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Firoz Akhtar** in Electronics and Telecommunication Department J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Name of students

Ms. Punam Patel
Ms. Rajani Kolhe
Ms. Priyanka Prasad
Ms. Pratibha Thakre
Ms. Kajal Dhole
Ms. Apeksha Rodge

Place : Nagpur

Date :

CERTIFICATE

This is to certify that the project report entitled, **"Smart stick for the blind and visually impaired people"** in the subject **Electronics and telecommunication** in the faculty of Science and Technology submitted by **Ms.Punam Patel, Ms.Rajani Kolhe, Ms.Priyanka Prasad, Ms.Pratibha Thakre, Ms.Kajal Dhole, Ms.Apeksha Rodge** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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Dept. of EN/ETC Engineering

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Ms. Rajani Kolhe
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Ms. Kajal Dhole
Ms. Apeksha Rodge

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and telecommunication Engineering** at JD College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Firoz Akhtar
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Internal Examiner/ Guide

External Examiner

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech. We owe our sincerest gratitude towards **Dr. S. V. Sonekar** Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas,** Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Neetu Gyanchandani**, Head, Department of - Electronics and telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof, Firoz Akhtar** Department of Electronics and telecommunication Engineering , J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics and telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students:
Ms. Punam Patel
Ms. Rajani Kolhe
Ms. Priyanka Prasad
Ms. Pratibha Thakre
Ms. Kajal Dhole
Ms. Apeksha Rodge

ABSTRACT

Blind stick is an innovative stick designed for visually disabled people for improved navigation. We here propose an advanced blind stick that allows visually challenged people to navigate with ease using advanced technology. The blind stick is integrated with ultrasonic sensor along with light and water sensing. Our proposed project first uses ultrasonic sensors to detect obstacles ahead using ultrasonic waves. On sensing obstacles the sensor passes this data to the microcontroller. The microcontroller then processes this data and calculates if the obstacle is close enough. If the obstacle is not that close the circuit does nothing. If the obstacle is close the microcontroller sends a signal to start a vibration.

It also detects water and alerts the blind. It is a gadget that manages the client by detecting obstacles in the scope of the stick. It will distinguish all obstacles in the way with the assistance of different sensors introduced in it. The microcontroller will recover information and pass it on as vibrations which will tell the client about obstacles in transit. It is an effective gadget and will end up being a major aid for blind individuals.

***Keywords*: Smart Stick, Ultrasonic Sensors, Intelligent Stick, Microcontroller, GPS-GSM Module**

SMART AIR POLLUTION DETECTION SYSTEM BASED ON INTERNET OF THINGS

Thesis Submitted to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

In Partial Fulfillment of the Requirements for the Award of the Degree Of

Bachelor of Engineering
in
Electronics and Tele-Communication Engineering

Submitted By

Mr. RITESH KUMBHARE

Ms. PRARTHNA GHADLE

Mr. MAHENDRA ZODE

Mr. AKSHAY VEER

Under the Guidance of

Prof. SAURABH S NIMKAR

Education to Eternity

2020-21

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This is to certify that the thesis entitled **SMART AIR POLLUTION DETECTION SYSTEM BASED ON Internet of Things** submitted by **Ritesh Kumbhare, Prarthna Ghadle, Mahendra R Zode, Akshay Veer** to the RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my / our supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

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Department of Electronics &Telecommunication Engineering

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Prof. Suresh Rijal
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Dr. S. L. Haridas
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Principal
J D College of Engineering
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Declaration

We, . hereby declare that the dissertation titled "**SMART AIR POLLUTION DETECTION SYSTEM USING Internet of Things**" submitted herein has been carried out by us in the Department of Electronic & Telecommunication Engineering of J D College of Engineering and Management, Nagpur. The work is original and has not been submitted earlier as a whole or in part for the award of any degree at this or any other Institution / University.

We also hereby assign to J D College of Engineering and Management, Nagpur all rights under copyright that may exist in and to the above work and any revised or expanded derivatives works based on the work as mentioned. Other work copied from references, manuals etc. are disclaimed.

Date: 15/03/2021

Place: Nagpur

AKSHAY VEER

ACKNOWLEDGEMENT

We express my sincere gratitude, for giving me the opportunity to work on the thesis during my final year of B.E. Thesis work is an important aspect in the field of engineering.

We owe my sincerest gratitude towards Dr. S. R. Choudhari , Principal J D College of Engineering & Management, Nagpur , for valuable advice and healthy criticism throughout my thesis which helped me immensely to complete my work successfully.

We would like to thank Er. Prof. Suresh Rijal, Coordinator, J D College of Engineering & Management, Nagpur.

The constant guidance and encouragement received from Prof. Nieetu Gyanchandani ,Head, Department of Electronics & Telecommunication, Nagpur , has been of great help in carrying out the present work and is acknowledged with reverential thanks.

We would like to express a deep sense of gratitude and thanks profusely to Er. **Prof. Saurabh S Nimkar** Assistant Professor, Department of Electronics and Telecommunication, J D College of Engineering & Management, Nagpur, who was the project guide thesis Supervisor. Without his wise counsel and able guidance, it would have been impossible to complete the thesis in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during my presentation of the work.

We express gratitude to other faculty members of ETC Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Ritesh Kumbhare(B-04)

Mahendra Zode(B-02)

Prarthna Ghadle(B-07)

Akshay Veer (B-14)

ABSTRACT

The main objective of this project is to monitor the air eminence in industrial and urban areas. The proposed outline includes a set of gas sensors (CO2) that are positioned on masses and structure of a IOT (Internet of things) and a dominant server to support both short-range realtime incident management and a continuing deliberate planning. In this Arduino platform is used to communicate the data simply and quickly. WSN (Wireless sensor network) acts as the trans receiver. This provide a real-time low rate monitoring system over the use of low rate, low information rate, and little control wireless communication technology. The projected monitoring system can be transferred to or shared by different applications. Through IOT we can able to visualize the values from the globe. Keywords – Wireless Sensor Network(WSN), Air Quality Monitoring Systems (AQMS), Gas Sensors (CO2).

Keywords: Arduino Uno board, Carbon dioxide sensor, Wi-Fi module, Buzzer.

AUTOMATIC DETECTION AND SORTING OF COLOUR CUBE USING MACHINE VISION & ROBOTIC ARM

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Submitted by

Mr. Rohitkumar Meshram

Mr. Ravi Raut

Mr. Amar Bawane

Ms. Ujvala Kale

Ms. Nikhita Bhowate

Mr. Jagjivan Bilone

Under the Guidance of

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Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"AUTOMATIC DETECTION AND SORTING OF COLOUR CUBE USING MACHINE VISION & ROBOTIC ARM"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. **Shyam D. Bawankar , Electronics and Telecommunication**, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:

Rohitkumar Meshram
Ravi Raut
Amar Bawane
Ujvala Kale
Nikhita Bhowate
Jagjivan Bilone

CERTIFICATE

This is to certify that the project report entitled, AUTOMATIC DETECTION AND SORTING OF COLOUR CUBE USING MACHINE VISION & ROBOTIC ARM" in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Rohitkumar Meshram, Ravi Raut , Amar Bawane Ujvala Kale, Nikhita Bhowate & Jagjivan Bilone** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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Prof. Shyam D. Bawankar
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This is to certify that the Project Report on **AUTOMATIC DETECTION AND SORTING OF COLOUR CUBE USING MACHINE VISION & ROBOTIC ARM** is approved work Done by **Mr. Rohitkumar Meshram, Mr. Ravi Raut, Mr. Amar Bawane, Ms. Ujvala Kale, Ms. Nikhita Bhowate, Mr. Jagjivan Bilone,** In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics & Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-21.

Prof. Shyam D. Bawankar
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ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. S. R. Choudhari**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S.V. Sonekar**, Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from Prof. Neetu Gyanchandani , Head, Department of Electronics and Telecommunication J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Amol Dhankar, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Prof. Shyam D.Bawankar, Department of Electronics and Telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of Electronics and Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work

Name of the students

Mr. Rohitkumar Meshram

Mr. Ravi Raut

Mr. Amar Bawane

Miss. Ujvala Kale

Miss. Nikhita Bhowate

Mr. Jagjivan Bilone

ABSTRACT

Sorting of items is done manually requiring human work. Identifying a particular object and placing it in the required order is taxing work especially in the industrial field wherein one needs to sort a large number of objects in a small interval of time and also weight of the objects is much larger than what an average human can bear. Automation plays a noteworthy role in such cases. Taking mentioned factors under consideration alongside providing a cost-efficient solution, we have presented our system in this paper. We are using Raspberry Pi, which is an open-source board based on Linux.

In today's technology, raspberry pi has been a key in a major number of applications in automation. Our objective will be to examine its utility and effective use as a mechanical system in Sorting Objects. Besides we are making use of a web camera that scans the image of the particular object to be sorted. The scanned image is then further processed using Open-CV to detect the shape and color of the object.

Open-CV (Open Source Computer Vision) is a library of programming functions mainly aimed at real-time computer vision. With the help of the processed information in Open-CV, the motor driver is instructed to control the servo motors which will help drive the object to the required sorted section. In our project, objects of 3 different colors and shapes, i.e. Pentagon, Square, and Triangle with Red, Green, and Blue colors

HUMANOID ROBOTIC ARM

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Mr. Sahil Chiwhane

Mr. Nilesh Hajare

Mr. Vedant Boratkar

Mr. Anand Bawane

Ms. Priya Motghare

Under the Guidance of

Prof. Amol Dhankar

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Year 2020-21

HUMANOID ROBOTIC ARM

A Project Report submitted in partial fulfillment of the requirements
for the award of the degree of
Bachelor of Technology
In
Electronics and Telecommunication

Submitted by
Mr. Sahil Chiwhane
Mr. Vedant Boratkar
Mr. Nilesh Hajare
Mr. Anand Bawane
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Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Humanoid Robotic Arm"** in the **Electronics and telecommunication** subject in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Amol Dhankar, Electronics and Telecommunication, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Mr. Sahil Chiwhane

Mr. Nilesh Hajare

Mr. Vedant Boratkar

Mr. Anand Bawane

Ms. Priya Motghare

CERTIFICATE

This is to certify that the project report entitled, **"Humanoid Robotic Arm"** in the **Electronics and Telecommunication** subject in the faculty of Science and Technology submitted by **Name of the Students** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

13/08/21

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **HUMANOID ROBOTIC ARM** is approved work done by

1) Mr. Sahil Chiwhane
2) Mr. Nilesh Hajare
3) Mr. Vedant Boratkar
4) Mr. Anand Bawane
5) Ms. Priya Motghare

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

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Guide

Prof. Neetu Gyanchandani
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Project Examination held on

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ACKNOWLEDEMET

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We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering& Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Dr. Neetu Gyanchandani**, Head, Department of Electronics and Telecommunication J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. **Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Amol Dhankar**, Department of Electronics And Telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics and Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Mr. Sahil Chiwhane

Mr. Nilesh Hajare

Mr. Vedant Boratkar

Mr. Anand Bawane

Mr. Priya Motghare

ABSTRACT

In today's world there is an increasing need to create artificial arms for different inhuman situations where human interaction is difficult or impossible. This may involve transportation of hazardous objects from one place to another and extinguishing the fire. Here we propose to build a robotic arm controlled by natural human arm movements whose input is acquired through the use of Leap motion sensors.

The development of this arm is based on Arduino UNO platform along with leap motion controller for input processing, which will all be interfaced with each other using wireless module. Arduino UNO board is programmed to control the servo motors and Arduino's input is given to the motion sensors. For proper control mechanism and flexibility of the arm. Six different servo motors are used. Finally, this prototype of the arm may be expected to overcome the problem such as placing or picking hazardous objects or non-hazardous objects that are far away from the user and performing daily household activities with precision and accuracy.

ANTI-THEFT VEHICLE SECURITY SYSTEM USING FACE RECOGNITION

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electronics and telecommunication

Submitted by

Name of the Student/s

Ms. Samiksha Paidlewar
Ms. Poonam Gajbhiye
Ms. Snehal Bhowate
Ms. Kanchan Bashine
Mr. Nikhil Dharpure

Under the Guidance of

Prof. Pranali Langde

Education to Eternity

Electronic And Telecommunication Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"ANTI-THEFT VEHICLE SECURITY SYSTEM USING FACE RECOGNITION"** in the subject **Electronics And Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Pranali langde_, Electronic And Telecommunication Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 4/12/21

Name of Students :

Ms. Samiksha Paidlewar
Ms. Poonam Gajbhiye
Ms. Snehal Bhowate
Ms. Kanchan Bashine
Mr. Nikhil Dharpure

CERTIFICATE

This is to certify that the project report entitled, **"ANTI-THEFT VEHICLE SECURITY SYSTEM USING FACE RECOGNITION"** in the subject **Electronics And Telecommunication** in the faculty of Science and Technology submitted by **Samiksha Paidlewar, Poonam Gajbhiye , Snehal Bhowate, Kanchan Bashine, Nikhil Dharpure** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Pranali Langde
Dept. of EN/ETC Engineering
Project Guide

Forwarded to :

Prof. Amol Dhankar
Project Coordinator
Dept. of EN/ETC Engineering

Dr. Neetu Gyanchandani
Head of the Department
Dept. of EN/ETC Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Dr. Srikant. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **ANTI-THEFT VEHICLE SECURITY SYSTEM USING FACE RECOGNITION** is approved work done by

Name of the Students

Ms. Samiksha Paidlewar
Ms. Poonam Gajbhiye
Ms. Snehal Bhowate
Ms. Kanchan Bashine
Mr. Nikhil Dharpure

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics And Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021

Prof. Pranali Langde
Guide

Dr. Neetu Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on

Internal Examiner/ Guide **External Examiner**

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH.

We express our sincere gratitude towards **Dr. S.V. Sonekar**, Offtg. Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Dr. Neetu Gyanchandani**, Head, Department of Electronics And Telecommunication at J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Pranali Langde**, Department of electronics and telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of _____ Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students :
Ms. Samiksha Paidlewar
Ms. Poonam Gajbhiye
Ms. Snehal Bhowate
Ms. Kanchan Bashine
Mr. Nikhil Dharpure

ABSTRACT

In this modern age there is rapid increase in number of vehicles and so is the number of car theft attempts, locally and internationally. With the invention of strong stealing techniques, owners are in fear of having their vehicles being stolen from common parking lot or from outside their home. Thus the protection of vehicles from theft becomes important due to insecure environment. Real time vehicle security system based on computer vision provides a solution to this problem. The proposed vehicle security system performs image processing based real time user authentication using face detection and recognition techniques. As the person enters the parked car to the driver's seat of the vehicle activates the hidden camera fixed in appropriate position inside the vehicle. As soon as the image is acquired from the activated camera, face of the person is detected. The extracted face is recognized using the LBPH. The face of the person which is Detected as unknown is sent to the mobile of the owner via mail and the ignition system remains unlock.

INTELLIGENT AUTOMATION FOR APPLIANCES WITH TIMER AND SCHEDULING

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Ms. Sanjana Nardelwar

Mr. Saket Junghare

Mr. Aditya Dhawale

Ms. Nayan Gokhale

Under the Guidance of

Prof. Mohammad Hassan Ansari

Education to Eternity

Department of Electronics & Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2021-2022

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Intelligent Automation for Appliances with Time & Scheduling"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Mohammad Hassan**, Department of Electronics and Telecommunication Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

Name of Students

Ms. Sanjana Nardelwar

Mr. Saket Junghare

Mr. Aditya Dhawale

Ms. Nayan Gokhale

CERTIFICATE

This is to certify that the project report entitled, **"Intelligent Automation for Appliances with Time & Scheduling"** in the subject **Electronics & Telecommunication** branch in the faculty of Science and Technology submitted by **Ms. Sanjana Nardelwar, Mr. Saket Junghare, Mr. Aditya Dhawale & Ms. Nayan Ghokale** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Mohammad Hassan
Dept. of Electronics &
Telecommunication

Forwarded to:

Prof. Amol Dhankar
Project Coordinator
Dept. of Electronics & Telecommunication

Prof. Gayatri Bhoyar
Head of the Department
Electronics & Telecommunication

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"INTELLIGENT AUTOMATION FOR APPLIANCES WITH TIMER AND SCHEDULING"** is approved work done by

Ms. Sanjana Nardelwar
Mr. Saket Junghare
Mr. Aditya Dhawale
Ms. Nayan Gokhale

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics & Telecommunication Engineeing** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2021-2022.

Prof. Mohammad Hassan
Guide

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Na

Prof. Gayatri Bhoyar
Head of the Department

30 june 2022

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH. We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Gayatri Bhoyar**, Head, Department of Electronics and Telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks. We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Mohammad Hassan** , Department of Electronics & Telecommunication Engineering J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of **Electronics and Telecommunication Department**, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Ms. Sanjana Nardelwar

Mr. Saket Junghare

Mr. Aditya Dhawale

Ms. Nayan Gokhale

ABSTRACT

This project depicts the overall architecture of a low-cost, wireless home automation system. It focuses on the creation of an IoT-based home automation system that can control multiple components over the internet or be automatically programmed to work based on environmental circumstances. In this project, we will create a firmware for smart control that can be successfully automated while minimising human contact in order to maintain the integrity of all electrical gadgets in the home. To automate the process, we used Node MCU, a popular open-source IOT platform. Different transmission modes will be used by different components of the system to send the user's control of the devices to the actual appliance via Node MCU.

The main control system implements wireless technology to provide remote access from smart phone. We are using a cloud server-based communication that would add to the practicality of the project by enabling unrestricted access of the appliances to the user irrespective of the distance factor. We provided a data transmission network to create a stronger automation. The system intended to control electrical appliances and devices in house with relatively low cost design, user-friendly interface and ease of installation. The status of the appliance would be available, along with the control on an android platform. This system is designed to assist and provide support in order to fulfill the needs of elderly and disabled in home. Also, the smart home concept in the system improves the standard living at home.

FIRE EXTINGUISHING AND MONITORING USING MULTI-SENSOR WITH AUTO TURN ON/OFF WATER MOTOR USING BLYNK SERVER

A Project Report Submitted In Partial Fulfillment of the Requirements for the Award of the Degree of

Bachelor of Technology

In

Electronics and Telecommunication

Submitted by

Ms. Sharvari Kale

Ms. Kalyani Kolhe

Ms. Tejaswini Vaidya

Ms. Prachi Koche

Ms. Puja Dongre

Ms. Anjali Gowardhan

Under the Guidance of

Prof. Mohammad Hassan

Education to Eternity

Electronics and Telecommunication Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Fire Extinguishing and Monitoring using Multi-Sensor with Auto Turn On/Off Water Motor Using Blynk Server."** in the **Electronic and Telecommunication** subject in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Mohammad Hassan** of Electronic & Telecommunication, JD College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place : Nagpur

Date :

Name of Students

Ms. Sharvari Kale **Ms. Prachci Koche** **Ms. Kalyani Kolhe**

Ms. Puja Dongre **Ms. Anjali Gowardhan** **Ms.Tejaswini Vaidya**

CERTIFICATE

This is to certify that the project report entitled, **"FIRE EXTINGUISHING AND MONITORING USING MULTI-SENSOR WITH AUTO TURN ON/OFF WATER MOTOR USING BLYNK SERVER"** in the **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Ms. Sharvari Kale, Ms. Prachi Koche, Ms. Kalyani Kolhe, Ms. Puja Dongre, Ms. Tejaswini Vaidya, Ms. Anjali Gowardhan** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded To:

Prof. Amol Dhankar
Project Coordinator
Department of Electronics & Telecommunication

Prof. Mohammad Hassan
Department of Electronics & Telecommunication

Prof. N. N. Gyanchandani
Head of the Department
Department of Electronics & Telecommunication

HOD, Dept. of EN/ETC
JD College of Engineering & Management, Nagpur

Dr. S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the project report on **"FIRE EXTINGUISHING AND MONITORING USING MULTI-SENSOR WITH AUTO TURN ON/OFF WATER MOTOR USING BLYNK SERVER"** is approved work done by

Name of Students

Ms. Sharvari Kale
Ms. Prachi Koche
Ms. Kalyani Kolhe
Ms. Puja Dongre
Ms.Tejaswini Vaidya
Ms. Anjali Gowardhan

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University Lonere** during the academic year 2020-2021.

Prof. Mohammad Hassan
Name Of Guide

Prof. N. N. Gyanchandani
Head of The Department

HOD, Dept. of E&TC
JD College of Engineering
& Management, Nagpur

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude to **Dr. S. R. Chaudhary,** Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S.V. Sonekar**, Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. N. N. Gyanchandani,** Head, Department of Electronic and Telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar,** Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Mohammad Hassan**, Department of **Electronics and Telecommunication**, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics and Telecommunication Department, J D College of Engineering & Management Nagpur, for their intellectual support throughout the course of this work.

Ms. Sharvari Kale
Ms. Puja Dongre
Ms. Prachi Koche
Ms. Tejaswini Vaidya
Ms. Kalyani Kolhe
Ms. Anjali Gowardhan

ABSTRACT

Fire alarm systems are very common nowadays and commonly installed in Banks, shops, offices, homes, etc. They detect the fire and trigger a loud alarm to aware everybody. But what if nobody is there to hear that alarm, like in nighttime or when nobody is at home.

So to inform the authority about any fire incident we are building an IoT-based Fire Alarm system that not only triggers an alarm but also sends notifications on the IoT application with an Email alert concerned persons and Turn ON the water motor pump for fire extinguishing.

This method can also be used to inform the fire department automatically in case of fire. Here we will use Flame Sensor to detect the flame produced by fire, Smoke Sensor for detecting smoke, and temperature sensor for detecting warm and ESP8266 Node MCU to trigger the alarm and send notification on IoT Application by using blynk cloud and used relays to Turn ON/OFF water motor.

Keywords: Node MCU, Temperature Sensor, Flame Sensor, Smoke Sensor, IoT, Relay

PICK AND PLACE ROBOT

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering
In
ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Submitted by
SUBHAMOY ROY
SHUBHAM CHAVHAN
AJAY DHEKWAR
RAVIPRAKASH GAUTAM
SHUBHAM DHOTE

Under the Guidance of
Prof. SHAFAQUE KHAN

Education to Eternity

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING J D College of Engineering and Management, Nagpur-441501

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Year 2020 - 2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"PICK AND PLACE ROBOT"** in the subject **ELECTRONICS AND TELECOMMUNICATION** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr./Prof._**SHAFAQUE KHAN** DEPARTMENT OF ELECTRONICS AND TELECOMUNICATION ENGINEERING, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date

Name of Student/Students

SUBHAMOY ROY
SHUBHAM CHAWAN
AJAY DHEKWAR
RAVIPRAKASH GAUTAM
SHUBHAM DHOTE

CERTIFICATE

This is to certify that the project report entitled, **"Pick And Place Robot"** in the subject **Electronics &Telecommunication Engineering** in the faculty of Science and Technology submitted by **shubhamoy Roy, Shubham Chawam, RaviPrakash Gautam, Ajay Dhekwar, Shubham Dhote** to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** for the award of the degree of **Bachelor of Engineering** is a bonafiede record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Shafaque Khan
Lecturer of Electronics
& Telecommunication

Prof. Amol Dhankar
Project Coordinator

Prof. N.N.Gyanchandani
HOD
Dept. Of Electronics &
Telecommunication

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Dr. S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Pick and Place Robot** is approved work done by

1) **Subhamoy Roy**
2) **Shubham Chavhan**
3) **Ajay Dhekwar**
4) **Raviprakash Gautam**
5) **Shubham Dhote**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics & Telecommunication Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** during the academic year 2020 - 2021.

Prof. Shafaque Khan
Guide

Prof. N.N. Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on **22 June 2021**

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof . Ms. Gyanchandani**, Head, Department of **Electronics & Telecommunication Engineering** J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shafaque Khan**, Department of **Electronics & Telecommunication Engineering**, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of **Electronics & Telecommunication Engineering** Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

SUBHAMOY ROY
SHUBHAM CHAVHAN
RAVIPRAKASH GAUTAM
AJAY DHEKWAR
SHUBHAM DHOTE

ABSTRACT

In recent times, development in field of communication and robotics has progressed with leaps and bounds. In addition, the blend of both disciplines has contributed heavily in making human life easier and better. So in this work while making use of both the aforementioned technologies, a procedure for design and implementation of a mobile operated mechanical ROBOT is proposed, that is, the proposed arm will be operated via a cellular device that connects with the receiver mounted on the robotic arm. Moreover, over the duration of a call, if any key is pressed from the cellular device than an indicator indistinct to the key pressed is noticed at the receiver side. This tone represents superimposition of two distinct frequencies and referred to as DTMF(dual tone multi-frequency). Further, the mechanical Robot is handled via the DTMF tone. Also, the acquired tone at the receiver is taken into a arduino (ATmega328) using the DTMF decipher module i.e. MT8870. Further, the decipher module unwinds the DTMF signal into its corresponding two bit representation and then the matched number is transmitted to the arduino. The arduino is programmed to take an action based on the decoded value. Further, the arduino forwards control signals to the motor driver unit to move the arm in forward/backward or multi-directional course. Lastly, the mechanical arm is capable of picking and placing objects while being controlled wirelessly over GSM (Global System for Mobile Communications).

DEPLOYABLE SPY ROBOTS

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Specialization

Submitted by

Ms. Surbhi Khambalkar
Mr. Vicky Kohad
Mr. Saurabh Netke
Mr. Tejas Misal
Mr. Praful Somkuwar
Ms. Prekshita Bhandakkar

Under the Guidance of

Prof. Neetu Gyanchandani.

Education to Eternity

Electronics and Telecommunication Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DEPLOYABLE SPY ROBOTS

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Specialization

Submitted by

Ms. Surbhi Khambalkar
Mr. Vicky Kohad
Mr. Saurabh Netke
Mr. Tejas Misal
Mr. Praful Somkuwar
Ms. Prekshita Bhandakkar

Under the Guidance of

Prof. Neetu Gyanchandani

Education to Eternity

Electronics and Telecommunication Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Deployable Spy Robots"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Neetu Gyanchandani, Electronics and Telecommunication,** J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 17 Aug 2021

1. Surbhi Khambalkar Skhambalkar
2. Vicky Kohad
3. Saurabh Netke
4. Tejas Misal
5. Praful Somkuwar
6. Prekshita Bhandakkar

CERTIFICATE

This is to certify that the project report entitled, **"Deployable Spy Robots"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Surbhi Khambalkar, Vicky Kohad, Saurabh Netke, Tejas Misal, Praful Somkuwar, Prekshita Bhandakkar** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Neetu Gyanchandani
Dept. of EN/ETC Engineering
Project Guide

Forwarded to:

Prof. Amol Dhankar
Project Coordinator
Dept. Of EN/ETC Engineering

Prof. Neetu Gyanchandani
Head of the Department
Dept. Of EN/ETC Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Dr. S. V. Sonekar
Offtg. Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Deployable Spy Robots** is approved work done by

Name of the Students

Ms. Surbhi Khambalkar
Mr. Vicky Kohad
Mr. Saurabh Netke
Mr. Tejas Misal
Mr. Praful Somkuwar
Ms. Prekshita Bhandakkar

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Name of Branch** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-21.

Prof. Neetu Gyanchandani
Guide

Prof. Neetu Gyanchandani
Head of the Department
HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on 28th June 2021

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. S. V. Sonekar** Offtg. Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Neetu Gyanchandani**, Head, Department of Electronics and Telecommunication Engineering J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering& Management, Nagpur, for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Neetu Gyanchandani**, Department of Electronics and Telecommunication Engineering, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner. We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students:

Ms. Surbhi Khambalkar
Mr. Vicky Kohad
Mr. Saurabh Netke
Mr. Tejas Misal
Mr. Praful Somkuwar
Ms. Prekshita Bhandakkar

ABSTRACT

Mobile robots are the center of attention of a great deal of current research. The detection and tracking of robots have increasing importance in multi-robot systems. In addition, individual robots will need to interact and collaborate with other robots while performing different tasks in a common environment. Swarm robots are the type of robots that coordinate in a large group or the network formed by the multi-robots in a dispersed and distributed manner which can process the data, have sensing capabilities, and communicate within the network formed to achieve the desired outcome. The task to be achieved are complex but as compared to it, the robots are simple, flexible, robust, self-organized. These are based on the use of local rules, it follows master-slave protocols where it is a model of asymmetric communication or the control where one device or process (master) controls one or more other devices or processes (slaves) and serves as their communication hub. In these robots, multiple robots work collectively to solve problems like bees, fishes, insects, and birds do by forming advantageous structures and their behavior which is observed.

IOT ENABLED HEALTH MONITORING SYSTEM

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Swinal U. Bodele

Anjali R. Dehariya

Nikita V. Chichghare

Nikita D. Soni

Dhanashri Gajbhiye

Shrushti Tagde

Under the Guidance of

Prof. Tushar Muratkar

Education to Eternity

Department Of Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur- 441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Raigad.

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IOT ENABLED HEALTH MONITORING SYSTEM"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Tushar Muratkar, Electronics and Telecommunication Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Ms. Swinal Bodele

Ms. Anjali Dehariya

Ms. Nikita Chichghare

Ms. Nikita Soni

Ms. Dhanashri Gajbhiye

Ms. Srushti Tagade

Place: Nagpur

Date 04/12/21

CERTIFICATE

This is to certify that the project report entitled, **"IOT ENABLED HEALTH MONITORING SYSTEM"** in the **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Ms.Swinal Bodele, Ms. Anjali Dehariya, Ms.Nikita Chichghare, , Ms. Nikita Soni, Ms. Dhanashri Gajbhiye, Ms. Srushti Tagade, to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of a degree or diploma.

Prof. Tushar Muratkar
Dept. of EN/ETC Engineering
Project Guide

Forwarded to:

Prof. Amol Dhankar
Project Coordinator
Dept. of EN/ETC Engineering

Prof. Neetu Gyanchandani
Head of Department
Dept. of EN/ETC Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
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Dr. S.V. Sonekar
Offtg. Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IOT ENABLED HEALTH MONITORING SYSTEM** is approved work done by

Ms. Swinal Bodele

Ms. Anjali Dehariya

Ms. Nikita Chichghare

Ms. Nikita Soni

Ms. Dhanashri Gajbhiye

Ms. Srushti Tagade

in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Mechanical Engineering at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological University, Raigad during the academic year 2020-2021.

Prof.Tushar Muratkar
Project Guide

Prof. Neetu Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on_____

Internal Examiner/Guide

External Examine

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar,** Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Neetu Gyanchandani,** Head Department of Electronics and Telecommunication Engineering, J D College of Engineering & Management, Nagpur has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar,** Project Coordinator, J D College of Engineering & Management, Nagpur, for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. **Tushar Muratkar** Department of Electronics and Telecommunication Engineering, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics and Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the Students:

Ms. Swinal Bodele

Ms. Anjali Dehariya

Ms. Nikita Chichghare

Ms. Nikita Soni

Ms. Dhanashri Gajbhiye

Ms. Srushti Tagade

ABSTRACT

In digital world as of now, lots of development and improvements gives hope to everyone by rapidly growing technology to see much advanced and better future. So Internet of things (IOT) is an online mode system and one of best technology to resolve our problems with the help of Cloud technology (Thingspeak) to make our life easier, secure and gain more efficiency. Across the world spreading Corona virus (Covid 19) is caused by severe acute metastasis syndrome Corona virus two (SAMSCoV- 2). For increasing respiratory disorders to critically ill causes, it needs early detection, observation and treatment.

The most common symptoms of Covid -19 increase the body temperature, high and low irregular heartbeat and cough etc. In this project, we studied IOT based health monitoring system using Arduino by using different parameters such as temperature sensor, heartbeat sensor etc. These entire sensors are continuously monitoring and updating the data of patients. Thus, the data is directly accessed to patients, doctors and third person. To indicate the irregularities in either can indicate other underlying illness such as cholesterol, high and low blood pressure, flu etc, so monitoring of an individual's heart rate and body temperature is usually very essential now. Looking towards today's scenario Covid -19, doctors are also infected. So, to overcome this problem and without touching to patients treated them and saves time as well as saves lives. In these times of pandemic healthcare monitoring is more important than even before.

IOT BASED SMART HOME AUTOMATION USING RASPBERRY PI

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication

Submitted by

Ms. Ujwala Dhoble

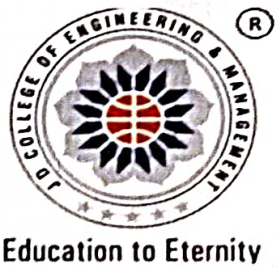
Ms. Swati Khawashe

Ms. Komal Gulghane

Ms. Hemali Gautam

Under the Guidance of

Prof. Amol Dhankar



Electronics and Telecommunication

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IoT Based Smart Home Automation Using Raspberry pi"** in the subject **Electronics** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Amol Dhankar, Assistant Professor, ETC Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of Students

Ujwala Dhoble Dhoble

Swati Khawashe Khawashe

Komal Gulghane Gulghane

Hemali Gautam Gautam

CERTIFICATE

This is to certify that the project report entitled, **"IoT Based Smart Home Automation Using Raspberry pi"** in the subject **Electronics** in the faculty of Science and Technology submitted by **Ujwala Dhoble, Komal Gulghane, Swati Khawashe, Hemali Gautam.** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma

Prof. Neetu Gyanchandani
Project Guide
Dept. of EN/ETC Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Forwarded to:

Prof. Amol Dhankar
Project Coordinator
Dept. of EN/ETC Engineering

Prof. Amol Dhankar
Head of the Department
Dept. of EN/ETC Engineering

Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report **on IoT Based Smart Home Automation Using Raspberry pi** is approved work done by **Name of Students Ujwala Dhoble, Swati Khawashe, Komal Gulghane, Hemali Gautam** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Amol Dhankar
Guide

Prof. N. N. Gyanchandan
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. N. N. Gyanchandani,** Head, Department of Electronics and telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Amol Dhankar, Assistant Professor, Department of Electronics, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of ETC Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Ujwala Dhoble

Swati Khawashe

Komal Gulghane

Hemali Gautam

ABSTRACT

The project is mainly concentrated on IOT based home automation using raspberry PI wireless home automation system using IOT helps us to control basic home appliances automatically through internet from anywhere around the world by using computers or mobiles. Now coming to this project the main objective is presenting a proposed system for smart home automation technique with Raspberry Pi. To design this system, we are using a Raspberry Pi module 3B+ and for IoT purpose we used Particle Cloud. Availability on high pace cellular networks like 3G,4G or Long-Term Evolution united with cheaper or handy clever phones, cell industry has considered a vast increase between terms on presenting a number of purposes yet capabilities at the fingertips on the citizens. It discusses respecting IoT or such may remain chronic because realizing clever domestic automation using Raspberry Pi. Smart telephone is connecting along Raspberry Pi the usage of the IP address over Raspberry Pi via Wi-Fi. Particle Cloud is a very popular IoT platform which can help you to start with everything that you want to do in your IoT device. Particle is a reliable, scalable, and secure IoT device platform. There are many IoT platforms like Blynk, Thing Speak etc. that you can use to connect Raspberry Pi to IoT clouds, but particle cloud platform has some awesome features which makes it different from others. Like you can run your Arduino code in your Raspberry Pi using the particle cloud IDE and can program your Pi from anywhere in the world, now that's something cool!! Also, you can easily integrate IFTTT, Google Cloud, or Microsoft Azure.

IoT Based Industry Protection System for Labor Safety

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Engineering

In

Electronics Engineering

Submitted by

Vijay Wase **Virendra More**

Swapnil Dukre **Mayur Kawalkar**

Dhiraj Wankhede **Arpit Masram**

Under the Guidance of

Prof. Firoz Akhtar

+

Education to Eternity

Electronics Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, "IoT Based Industry Protection System for Labor Safety" in the subject Electronics Engineering in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Firoj Akhtar, Electronics Engineering Department , J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:12/06/2021

Name of Students

Vijay Wase
Virendra More
Swapnil Dukre
Mayur Kawalkar
Dhiraj Wankhede
Arpit Masram

CERTIFICATE

This is to certify that the project report entitled, "IoT Based Industry Protection System for Labor Safety" in the subject Electronics Engineering in the faculty of Science and Technology submitted by Vijay Wase ,Virendra More, Swapnil Dukre, Mayur Kawalkar, Dhiraj Wankhede, Arpit Masram

to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur for the award of the degree of Bachelor of Electronics Engineering is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Firoz Akhtar
Project Guide

Forwarded to:

Prof. Amol Dhankar
Project Coordinator

Prof. N.N. Gyanchandani
H.O.D.

Dr. S.V. Sonekar
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on " IoT Based Industry Protection System for Labor Safety " is approved work done by

Vijay Wase	Virendra More
Swapnil Dukre	Mayur Kawalkar
Dhiraj Wankhede	Arpit Masram

in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Electronic Engineering at J D College of Engineering & Management, Nagpur affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur during the academic year 2020-2021.

Prof. Firoz Akhtar
Project Guide

Prof N. N. Gyanchandani
Head of the Department

Project Examination held on

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. Elecronics Engineering.

We owe our sincerest gratitude towards Dr. S. V. Sonekar, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from Prof. N. N. Gyanchandani, Head of Electronics Engineering Department, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Amol Dhankar, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Firoz Akhtar, Electronics Engineering Department , J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

- Vijay Wase
- Virendra More
- Swapnil Dukre
- Mayur Kawalkar
- Dhiraj Wankhede
- Arpit Masram

ABSTRACT

The IOT industry protection system using Nodemcu controller is a system designed to protect industries from losses due to accidents using Internet of things. Gas leakages may lead to fires leading to huge industrial losses, also instant fire detection is needed in case of furnace blasts or other conditions. Also low lighting in industries may create improper work conditions increasing the probability of accidents. The system makes use of Nodemcu Controller to achieve this functionality. The system makes use of temperature sensing along with light and gas sensing to detect fire, gas leakage as well as low lighting to avoid any industrial accidents and prevent losses.

SMART AGRICULTURE SYSTEM WITH FIRE MANAGEMENT USING RASPBERRY PI

A Project Report submitted in partial fulfilment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Ms. Aparna Bhalavi

Ms. Gautami Shahare

Ms. Pranjali Bhalerao

Mr. Shubham Shahare

Under the Guidance of

Prof. Gayatri Bhoyar

Education to Eternity

Electronics and Telecommunication

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Smart Agriculture System with fire management using Raspberry Pi"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Gayatri Bhoyar**, Assistant Professor, ETC Department, JD College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 11/10/2021

Ms. Aparna Bhalavi

Ms. Gautami Shahare

Ms. Pranjali Bhalerao

Mr. Shubham Shahare

CERTIFICATE

This is to certify that the project report entitled, **"Smart Agriculture System with fire management using Raspberry Pi"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Ms. Aparna Bhalavi, Ms. Gautami Shahare, Ms. Pranjali Bhalerao, Mr. Shubham Shahare to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Gayatri Bhoyar
Project Guide
Department of Electronics and Telecommunication

Forwarded to:

Prof. N.N. Gyanchandani
Head of the Department
Department of Electronics and Telecommunication
JDCOEM, Nagpur

Prof.AmolDhankar
Project Coordinator
Department of Electronics and Telecommunication

Dr. S.V. Sonekar
Principal
Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Smart Agriculture System with Fire Management using Raspberry Pi** is approved work done by **Ms. Aparna Bhalavi, Ms. Gautami Shahare, Ms. Pranjali Bhalerao, Mr. Shubham Shahare** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication** at JD College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Gayatri Bhoyar
Guide

Prof. N. N. Gyanchandani
Head of the Department

Project Examination held on_____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B. Tech. We owe our sincere gratitude towards **Dr. S. V. Sonekar,** Offtg. Principal, JD College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, JD College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. N. N. Gyanchandani**, Head, Department of Electronics and telecommunication, JD College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, JD College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Gayatri Bhoyar**, Assistant Professor, Department of **Electronics and Telecommunication**, JD College of Engineering & Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the **ETC Department,** JD College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students
Ms. Aparna Bhalavi
Ms. Gautami Shahare
Ms. Pranjali Bhalerao
Mr. Shubham Shahare

ABSTRACT

Agriculture sector has been the backbone of the Indian market. That's why it is ranked second worldwide. Agriculture is such an area that will not stop until the life of human beings. It'll run for a lifetime. There is also a need to implement new methods or develop existing methods to improve the quality of agriculture. Technology is rising day by day and is entering in every field. IOT is the technology that can lead to enhancing agricultural practices and rising productivity. In agriculture, farmers are making more efforts, from planting to cutting crop. But they don't get the expected production due to some issues such as rodent's attack, failure to properly provide water to crops, animal attack, and occasionally firing in the farm. This paper proposes an IOT-based method to solve these problems, which will provide the solution to those problems. The system is used to monitor the animals using PIR sensor, provide adequate irrigation, providing temperature and humidity data using DHT11 sensor, and provide fire avoidance using MQ2 sensor.

Keywords: DHT11 Sensor, PIR Sensor, MQ2 Sensor, Soil Moisture Sensor

DISSERTATION REPORT

on

Iot Based Dynamic Road Traffic and Street Light Control Management for Smart Cities

A Project Report submitted in partial fulfilment of the requirements

for the award of the degree of

Bachelor of Technology

In

ELECTRONICS AND TELECOMMUNICATION

Submitted by

Ashwini Kumbhare (1941381372014)

Monika Raut (1941381372017)

Sonali Bhoyar (40413820171137210081)

Vrushali Jaywar (1941381372013)

Under the Guidance of

Dr. Neeta N. Thune

Asst. Professor

Education to Eternity

Electronics & Telecommunication Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Iot Based Dynamic Road Traffic and Street Light Control Management for Smart Cities"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr. Neeta N. Thune Electronics & Telecommunication Engineering Department J. D. College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Ashwini Kumbhare **(1941381372014)**

Monika Raut **(1941381372017)**

Sonali Bhoyar **(40413820171137210081)**

Vrushali Jaywar **(1941381372013)**

B.Tech (FINAL YEAR)

Department Of Electronics and Telecommunication Engineering

Place: Nagpur

Date:

CERTIFICATE

This is to certify that the project report entitled, **"Iot Based Dynamic Road Traffic and Street Light Control Management for Smart Cities"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology submitted by

Ashwini Kumbhare **(1941381372014)**

Monika Raut **(1941381372017)**

Sonali Bhoyar **(40413820171137210081)**

Vrushali Jaywar **(1941381372013)**

to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a Bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Amol B. Dhankar
Project co-ordinator

Dr. Neeta N. Thune
Project Guide

Prof. Neetu Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
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Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Iot Based Dynamic Road Traffic and Street Light Control Management for Smart Cities"** is approved work done by

Ashwini Kumbhare **(1941381372014)**

Monika Raut **(1941381372017)**

Sonali Bhoyar **(40413820171137210081)**

Vrushali Jaywar **(1941381372013)**

in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and telecommunication at** J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Amol B. Dhankar
Project co-ordinator

Dr. Neeta N. Thune
Project Guide

Prof. Neetu Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Dr.S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
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ACKNOWLEDGEMENT

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Ashwini Kumbhare **(1941381372014)**

Monika Raut **(1941381372017)**

Sonali Bhoyar **(40413820171137210081)**

Vrushali Jaywar **(1941381372013)**

ABSTRACT

It is our priority responsibility and liability to save energy efficiently in a modern time in which energy is the world's major concern. The development of technology plays a vital role in daily life and is now preferred by automation than the traditional manual system. The main purpose of this thesis is to create an intelligent control system that can decide on light intensity (ON/OFF/DIM). Day and evening mode can be identified here by setting a special intensity value on the LDR sensor and IR sensor control over street light. This thesis has the interesting part to install a solar cell for the energy supply but in case the solar cell is not capable, the situation will be maintained immediately by a secondary DC backup current. Another remarkable part of this thesis is to automatically maintain the traffic signal by installing a monitoring camera without the help of the traffic police and monitor the complete system through the Internet. All of the components in this thesis make a reliable intelligence system simple and cost-effective, but efficient.

This thesis is intended to design and implement advanced development of embedded street light saving systems. We currently have a manual system where road lights are switched on the night before sunset and switched off the next day after enough outside light. But when there is absolute darkness, the actual time for these lights to be switched on. This is to some extent a waste of power. This thesis provides a solution for waste electricity. In addition, the manual operation of the lighting system eliminates completely. The system proposed offers a way to save energy. This is achieved with an IR transmitter and an IR receiver pair sensing and approaching a vehicle. When the movement is sensed, the sensor passes the data to the microcontroller, which also switches the Light on. Likewise, once the vehicle or obstacle is gone, the light will be switched OFF because any object can be accessed from anywhere and at any time by Internet simultaneously with the status (ON/OFF) of street light. This thesis is carried out with an intelligent embedded system that controls the street lights on the basis of vehicle detection or other obstacles. Whenever the obstacle is found on the road within a given time, the light is ON/OFF automatically and access to the same information via the internet. You can access street light information in real-time (ON/OFF status) from any time online.

Keywords: IoT, Arduino Uno, IR motion sensor, LDR, LED, Servo motor, Solar panel,

IOT BASED SMART MOTOR CYCLE HELMET

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Mr. Bhavesh Shahare

Ms. Shivani Chawde

Mr. Rakesh Gudafwar

Ms. Purvi Bobade

Ms. Harshada Pal

Under the Guidance of

Prof. Shyam D. Bawankar

Education to Eternity

Electronics and Telecommunication

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

IOT BASED SMART MOTOR CYCLE HELMET

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Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IoT Based Smart Motor Cycle Helmet"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Shyam D. Bawankar,** Assistant Professor, ETC Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 5/8/2021

Mr. Bhavesh Shahare
Ms. Shivani Chawde
Mr. Rakesh Gudafwar
Ms. Purvi Bobade
Ms. Harshada Pal

CERTIFICATE

This is to certify that the project report entitled, **"IoT Based Smart Motor Cycle Helmet"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Mr. Bhavesh Shahare, Ms. Shivani Chawde, Mr. Rakesh Gudafwar, Ms. Purvi Bobade, Ms. Harshada Pal to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

05/08/2021

Prof. Shyam D. Bawankar
Project Guide
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Prof. Amol Dhankar
Project Coordinator
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Dr. S.V. Sonekar
Principal

Principal
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Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IoT Based Smart Motor Cycle Helmet** is approved work done by **Mr. Bhavesh Shahare, Ms. Shivani Chawde, Mr. Rakesh Gudafwar, Ms. Harshada Pal, Ms. Purvi Bobade** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

05/08/2024

Prof. Shyam Bawankar
Guide

Prof. N. N. Gyanchandan
Head of the Department

HOD, Dept. of EN/ETC
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Project Examination held on_____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech. We owe our sincerest gratitude towards **Dr. S. V. Sonekar** offtg. Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. N. N. Gyanchandani**, Head, Department of Electronics and telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shyam D. Bawankar**, Assistant Professor, Department of **Electronics and Telecommunication**, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the **ETC Department**, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Mr. Bhavesh Shahare

Ms. Shivani Chawde

Mr. Rakesh Gudafwar

Ms. Purvi Bobade

Ms. Harshada Pal

ABSTRACT

The main purpose of this paper is to force to wear a helmet on a two-wheeled motorcycle. Most of the death cases occur due to two-wheeler accidents. In most cases, riders suffer due to head injuries and they lost their life. To solve these issues, we are developing a smart helmet that will be useful for riders while riding two-wheelers. Generally, accidents occur due to the high consumption of alcohol. The reason for this smart helmet is, to give safety to the rider while riding. We are going to implement by using alcohol detection, accident identification, location tracking, a handsfree device, solar-powered, fall detection. The helmet will connect to the ignition as the rider will force to wear the helmet, if the rider will not wear the helmet, then the ignition will not start. For emergencies, we are using the GSM module to send messages to the registration number.

Keywords: Arduino Uno, Alcohol Sensor, RF module, Ultrasonic Sensor, IR sensors

Night Patrolling Device

A Project Report submitted in partial fulfillment of the requirements
For the award of the degree of

Bachelor of Technology
In
Electronics and Telecommunication Engineering
Submitted by

1) Mr. Bhushan Kohade

2) Mr. Nishant Gadhawe

3) Mr. Rahul Urkude

4) Mr. Sameer Dongre

5) Mr. Parish Swami

6) Mr. Rahul Tayade

Under the Guidance of

Prof. Mohammad Hassan

Education to Eternity

Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Night Patrolling Device"** in the subject **Electronics and Telecommunications** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Mohammad Hassan**, Electronics and Telecommunication JD College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Name of students:

1) Mr. Bhushan Kohade
2) Mr. Nishant Gadhawe
3) Mr. Rahul Urkude
4) Mr. Sameer Dongre
5) Mr. Parish Swami
6) Mr. Rahul Tayde

CERTIFICATE

This is to certify that the project report entitled, **"Night Patrolling Device"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Bhushan Kohade, Nishant Gadhawe, Sameer Dongre, Rahul Urkude, Parish Swami, Rahul Tayade** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bona fide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Mohammad Hassan
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Department of Electronics and Telecommunication

Forwarded to:

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Prof. Amol Dhankar
Project Coordinator
Department of Electronics and Telecommunication

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Night Patrolling Device**is approved work done by **Mr. Bhushan Kohade, Mr. Nishant Gadhawe, Mr. Rahul Urkude, Mr. Sameer Dongre, Mr. Parish Swami, Mr. Rahul Tayade.** In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication** at JD College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Mohammad Hassan
Project Guide

Dr. N. N. Gyanchandani
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HOD, Dept. of EN/ETC
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Project Examination held on_____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDGEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH. We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Offtg, principal JD College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas** Dean Academics, JD College of Engineering & Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Neetu Gyanchandani,** Head, Department of ETC JD College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar,** Project Coordinator, JD College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Mohammad Hassan**, Department of Electronics and Telecommunication Engineering, JD College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner. We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of ETC Department, JD College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students:

1) Mr. Bhushan Kohade
2) Mr. Nishant Gadhawe
3) Mr. Rahul Urkude
4) Mr. Sameer Dongre
5) Mr. Parish Swami
6) Mr. Rahul Tayde

ABSTRACT

At present the observation during night clad to be exceptionally testing task. There are some spots where people cannot be engaged with watching. A fundamental prerequisite of this circumstance could be a robot which consequently identifies trespassers within the territory like workplaces, home, building so forth and report handy board security control unit. In the current work, A late evening guarding robot is formed with upgraded capacity to recognize and alarm if there's any human movement within the territory to present exact observing framework. The Night Patrolling Robotic vehicle moves during a random path while watching. The framework utilizes IR based way following framework for watching allocated zone. The development of a robot is additionally controlled consequently through deterrent recognizing sensors to remain far from the crash. It screens every zone to acknowledge any Interruption utilizing camera which is mounted on the highest of the robot to catch the images, record and sends them to the client. It can likewise impart the continued video signs to the client. The principle goal of this undertaking is to acknowledge the dubious exercises within the regions where human presence cannot be seen.

Fields is one of the extraordinary progressions in mechanical autonomy.

Patrolling is nothing but to keep monitoring over an area by regularly moving or travelling a route of the corresponding area. The robot captures the images with the help of camera. These images are then sent to the user in a real time, user will analyze it and if there is any problem observed then alarm is triggered manually. Robot patrolling is mostly used in Military area, Hospitals, shopping mall, Restricted Zones, Industrial area, Agricultural area etc. The robot uses ESP32 based camera sensor which cuts down the price of using a raspberry pi.

GUI BASED INDUSTRIAL MONITORING AND CONTROL SYSTEM

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Mr. Gaurav Barmase

Mr. Sahil Bawankule

Ms. Shital Thawkar

Mr. Gaurav Khopade

Mr. Nikhil Gajbhiye

Under the Guidance of

Prof. Shailesh Sakhare

Education to Eternity

Electronics and Telecommunication Engineering Department

J D College of Engineering and Management, Nagpur-441501

GUI BASED INDUSTRIAL MONITORING AND CONTROL SYSTEM

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication Engineering

Submitted by

Mr. Gaurav Barmase

Mr. Sahil Bawankule

Ms. Shital Thawkar

Mr. Gaurav Khopade

Mr. Nikhil Gajbhiye

Under the Guidance of

Prof. Shailesh Sakhare

Education to Eternity

Department of Electronics and Telecommunication Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"GUI BASED INDUSTRIAL MONITORING AND CONTROL SYSTEM"** in the subject **Electronics and Telecommunication Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Shailesh Sakhare, Electronics and Telecommunication Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Mr. Gaurav Barmase

Mr. Sahil Bawankule

Ms. Shital Thawkar

Mr. Gaurav Khopade

Mr. Nikhil Gajbhiye

Place: Nagpur

Date: 23/07/2021

CERTIFICATE

This is to certify that the project report entitled, **"GUI BASED INDUATRIAL MONITORING AND CONTROL SYSTEM"** in the **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Mr. Gaurav Barmase, Mr. Sahil Bawankule, Ms. Shital Thawkar, Mr. Gaurav Khopade, Mr. Nikhil Gajbhiye to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

23/07/2021

Prof. Shailesh Sakhare
Dept. of EN/ETC Engineering
Project Guide

Forwarded to:

23/07/2021

Prof. Amol Dhankar
Project Coordinator
Dept. Of EN/ETC Engineering

23/7/21

Prof. Neetu Gyanchandani
Head of Department
Dept. Of EN/ETC Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Dr. S.V. Sonekar
Offtg. Principal
Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **GUI BAESD INDUSTRIAL MONITORING AND CONTROL SYSTEM** is approved work done by

Mr.Gaurav Barmase
Mr.Sahil Bawankule
Ms.Shital Thawkar
Mr.Gaurav Khopade
Mr. Nikhil Gajbhiye

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Telecommunication Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021

23/07/2021

Prof. Shailesh Sakhare
Project Guide

28/07/21

Prof. Neetu Gyanchandani
Head of the Department

Project Examination held on_____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. S. V. Sonekar** Offtg. Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas,** Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from_**Prof. Neetu Gyanchandani,** Head, Department of Electronics and Telecommunication Engineering J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. **Amol Dhankar,** Project Coordinator, J D College of Engineering& Management, Nagpur, for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shailesh Sakhare,** Department of Electronics and Telecommunication Engineering , J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of_Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students:

Mr. Gaurav Barmase

Mr. Sahil Bawankule

Ms. Shital Thawkar

Mr. Gaurav Khopade

Mr. Nikhil Gajbhiye

ABSTRACT

The aim of this project is to develop the Graphical User Interface (GUI) based systems to monitor and control the industrial process. This protocol easily operate anyone and efficient by using simple GUI. This implemented system installed on the machine to collect valuable information.

Over the years the Graphical User Interface (GUI) based systems are becoming accepted by the users to interact with electronics environment through graphical icons and visual indicators. In the industries GUI based systems are really essential to monitor and control the surroundings with a central supervisor. In that GUI based system is described which can sense and monitor multiple number of sensors and also can be used to run number of machines and also has the ability to monitor a Temperature and Pressure. This implemented control system can be used in industries.

INDUSTRY 4.0 STANDARD IMPLEMENTATION FOR PRODUCT BASED INDUSTRIES.

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Electronics & Telecommunication

Submitted by

Hitesh Kaikade

Vikram Ambatkar

Nitesh Nagdevate

Chandrashekhar Zade

Tushar Maske

Akshay Kambale

Under the Guidance of

Prof. Pranali Langde

Education to Eternity

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J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Industry 4.0 standard implementation for product based industries"** in the subject **Electronics & Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Pranali Langade, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 10-08-21.

Hitesh Kaikade
Vikram Ambatkar
Nitesh Nagdevate
Chandrashekhar Zade
Tushar Maske
Akshay Kambale

CERTIFICATE

This is to certify that the project report entitled, **"Industry 4.0 standard implementation for product based industries"** in the subject **Electronics & Telecommunication** in the faculty of Science and Technology submitted by **Hitesh Kaikade, Vikram Ambatkar, Nitesh Nagdevate, Chandrashekhar Zade, Tushar Maske, Akshay Kambale** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Pranali Langde)
Name of the Department

Forwarded to:

10/08/2021
(Prof. Amol Dhankar)
Project Coordinator

(Prof. Neetu Gyanchandani)
Head of the Department
Electronics & Telecommunication

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JD College of Engineering
& Management, Nagpur

J.D. COLLEGE OF ENGINEERING & MANAGEMENT

(Dr. S.V. Sonekar)
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Principal
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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Industry 4.0 standard implementation for product based industries** is approved work done by

Hitesh Kaikade

Vikram Ambatkar

Nitesh Nagdevate

Chandrashekhar Zade

Tushar Maske

Akshay Kambale

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics & Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Pranali Langde
Guide

Prof. Neetu Gyanchandani
Head of the Department

HOD, Dept. of ENTC
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Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We also express our sincere gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from Prof. Neetu Gyanchandani, Head, Department of Electronics & Telecommunication J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Amol Dhankar, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Pranali Langade, Department of Electronics & Telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of the Electronics & Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Hitesh Kaikade
Vikram Ambatkar
Nitesh Nagdevate
Chandrashekhar Zade
Tushar Maske
Akshay Kambale

ABSTRACT

The companies that rely on manual, paper based data collection now find themselves falling behind their digitally enhanced competitors. Industrial & companies that rely on paper based operator rounds are not immune. In the year 1990, internet technology gave businesses a faster, easier, and less expensive way to communicate and share information. With the use of computers and cloud technology, factories are becoming increasingly efficient and "smart".

The Industry 4.0 vision is the 4th revolution of the industry using the Internet of Things (IoT) & Cyber physical systems. Standards are playing an important role in realizing the industry 4.0 vision. Industry 4.0 is the latest phase for the manufacturing sector which has come about because of the Internet of Things (IoT) and the accessibility of data, in industry 4.0 everything is getting smarter and data generated at all levels of the production process that causes a rise in data volume. Nowadays there is no mechanism to log onto the live data generated by machinery in the industries. Some manual data stored in the local server will not be accessible from any other places outside the local LAN connection. This is IoT at work - made possible by the digitization of data in real-time and centralized access to that data in the Cloud.

Here, an endeavor has been done to develop a system that will sense the live data generated by various types of machinery in the industry such as temperature, humidity, and various gases and send the live data to the cloud using the suitable protocol. The data should be accessible from any place and at any time. This Improves Greater data transparency receive and responds to inspection data in real-time, Enhanced compliance, More operational efficiency, Reduced costs and greater profitability, Greater productivity and safety for workers, Easy to deploy and scale.

IOT AND BLUETOOTH BASED HOME AUTOMATION SYSTEM THAT WORKS WITH & WITHOUT INTERNET WITH SCHEDULING AND TIMER FEATURE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics &Telecommunication

Submitted by

1. Karishma Rangari **2. Yogita Nimje**

3. Shweta Bharti **4. Gyaneshwari Deshmukh**

5. Megha Deotale **6. Pratiksha More**

Under the Guidance of

Prof. Shafaque Khan

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J D College of Engineering and Management, Nagpur-441501

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Year 2020-21

IOT AND BLUETOOTH BASED HOME AUTOMATION SYSTEM THAT WORKS WITH & WITHOUT INTERNET WITH SCHEDULING AND TIMER FEATURE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Electronics and Telecommunication

Submitted by

1. Karishma Rangari

2. Shweta Bharti

2.Yogita Nimje

4. Gyaneshwari Deshmukh

5. Megha Deotale

6. Pratiksha More

Under the Guidance of

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Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, "**IoT and Bluetooth Based Home Automation Systems That Works With& Without Internet With Scheduling and Timer Feature**" in the subject **Electronics & Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Shafaque Khan of Electronics & Telecommunication, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

1. Karishma Rangari
2. Yogita Nimje
3. Pratiksha More
4. Shweta Bharti
5. Gyaneshwari Deshmukh
6. Megha Deotale

CERTIFICATE

This is to certify that the project report entitled, **"IoT and Bluetooth Based Home Automation Systems That Works With & Without Internet With Scheduling And Timer Feature"** in the subject **Electronics & Telecommunication** in the faculty of Science and Technology submitted by **Karishma Rangari, Yogita Nimje, Pratiksha More, Shweta Bharti, Gyaneshwari Deshmukh, Megha Deotale** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

SKhan

Prof. Shafaque Khan
Department of ETC/EN Engineering

Forwarded to:

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Project Coordinator
Department of ETC/EN Engineering

Prof. **N N. Gyanchandani**
Head of the Department
Department of ETC/EN Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
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Dr. S.V Sonekar
Principal

Principal
J.D. College of Engineering & Management
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Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IoT and Bluetooth Based Home Automation Systems That Works With & Without Internet With Scheduling and Timer Feature** is approved work done by

1. **Karishma Rangari**
2. **Yogita Nimje**
3. **Pratiksha More**
4. **Shweta Bharti**
5. **Gyaneshwari Deshmukh**
6. **Megha Deotale**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics & Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

SKhan

Prof. Shafaque Khan
Guide

Prof. **N N. Gyanchandani**
Head of the Department
HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on _____

Internal Examiner/ Guide **External Examiner**

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S.V Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **N N. Gyanchandani**, Head, Department of Electronics & Telecommunication J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Shafaque Khan**, Department of Electronics & Telecommunication, J D College of Engineering & Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the ETC Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students
1. Karishma Rangari
2.Shweta Bharti
3.Yogita Nimje
4.Pratiksha More
5.Gyaneshwari Deshmukh
6.Megha Deotale

ABSTRACT

In recent times as well as incoming generation automation has a wide scope and become an important issue in many home appliances, companies and publications. Home automation systems are very common, nowadays and commonly installed in Banks, shops, offices, homes, etc. Smart home automation is easy way to work automatically and it's an advance technology. This article describes the implementation of a Wi-Fi module and Bluetooth technology with an android application-based home-automated system using an ESP8266 microcontroller. The system design comprised a NodeMCUESP8266 microcontroller board, Bluetooth module (HC-06), 5V relay, (Blynk App) IoT applications and Bluetooth application (MIT App Inventor). In this proposed paper we show that how we can control all home appliances over IOT applications and Bluetooth application also. Sometimes there is no internet connection is available then IOT appliances does not work because IoT appliances only work on internet connection and it is the major issue with IOT appliances, so to solve this problem we implement Bluetooth Application, so in our project, it first checks whether the internet connection is on or off if internet connection is on then it works on IOT Application or if it is off then it's works on android application which is based on Bluetooth. In this project we add scheduling and timer feature. Using the scheduling feature we can automate any task like on or off the device by on specific time and using timer feature we can set the timer and it helps to make easy.

Keywords: **Home automation, Wi-Fi module, Bluetooth technology, IoT application, Bluetooth application, Wireless communication.**

AUTOMATED VEHICLE PARKING SYSTEM

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In Electronics & Telecommunication

Submitted by

1.Khushboo Chaurasia
2. Dilesh Shahare
3. Nikita Ramteke
4. Sharad Dewangan
5. Payal Zade
6. Priya Kanekar

Under the Guidance of

Prof. Tushar Muratkar

Education to Eternity

Electronics and Telecommunication

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Automated Vehicle Parking System"** in the subject **"Internet of Things"** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Tushar Muratkar in **Electronics and Telecommunication**, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 17/08/2021

Khushboo Chaurasia

Dilesh Shahare

Priya Kanekar

Sharad Dewangan

Nikita Ramteke

Payal Zade

CERTIFICATE

This is to certify that the project report entitled, **"Automated vehicle parking system"** in the subject **Electronics and telecommunication** in the faculty of Science and Technology submitted by **Khushboo Chaurasia, Dilesh Shahare, Nikita Ramteke, Sharad Dewangan, Payal Zade, Priya Kanekar** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Tushar Muratkar)

Electronics and
telecommunication

Forwarded to:

(Prof. Amol Dhankar)

Project Coordinator

(Prof. Neetu Gyanchandani)

Head of the Department

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **AUTOMATED VEHICLE PARKING SYSTEM** is approved work done by

Khushboo Chaurasia
Dilesh Shahare
Nikita Ramteke
Sharad Dewangan
Payal Zade
Priya Kanekar

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics and telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Tushar Muratkar

Prof. Tushar Muratkar
Guide

Prof. Neetu Gyanchandani
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& Management, Nagpur

Project Examination held on

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from Prof. Neetu Gyanchandani, Head, Department of Electronics and telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Amol Dhankar, Project Coordinator, J D College of Engineering& Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Tushar Muratkar, Department of Electronics and telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics and telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Khushboo Chaurasia
Dilesh Shahare
Nikita Ramteke
Sharad Dewangan
Payal Zade
Priya Kanekar

ABSTRACT

Nowadays parking has become an expensive resource in the almost any major cities in the world, and its limited availability is the concurrent cause of urban traffic congestion and air pollution. The common method of finding a parking space is manual where the driver usually finds a space on the street through luck and experience. This process takes time and effort and may lead to the worst case of failing to find any parking space if the driver is driving in a city with high vehicle density. In this paper, an attempt has been done to automate the car as well as the car parking system with a Smart Parking System (SPS) which is based on the integration of an Android app and QR Code reader. The introduction of a novel algorithm that increases the efficiency of the current smart-parking system and develops an android app to collect information about the occupancy state of parking spaces, and to inform the drivers to the nearest vacant parking spot. The entering into or leaving the parking slot is controlled by an Android-based application. The algorithm helps improve the probability of successful parking and minimizes the user waiting time.

***Keywords*: Android app, Car Parking, QR-Code, Smart Parking, IoT, Smart City**

TWO WHEEL SELF BALNCING ROBOT

Thesis submitted to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

In partial fulfilment of requirement for the award of degree of

Bachelor of Engineering

in

Electronics & Telecommunication Engineering

Submitted by

KRUNALI BANSOD

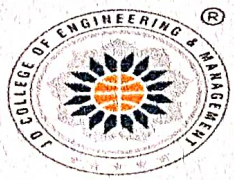
VANDANA NAITAM

RITESH GAWAI

RAJESH RATHOD

Under the guidance of

PROF. P.J. BHAGAT



Department of Electronics & Telecommunication Engineering

J D College of Engineering and Management, Nagpur

CERTIFICATE

This is to certify that the thesis entitled **TWO WHEEL SELF BALANCING ROBOT** submitted by **Rajesh Rathod** to the RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my / our supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Instituteor University for the award of any degree or diploma.

Prof. P. J. Bhagat
Department of Electronics &
Telecommunication Engineering

Forwarded to:

Prof. Neetu Gyanchandani
Head of the Department
Department of Electronics Engineering

Prof. Suresh Rizal
B.E. Project Coordinator

Dr. S.V. Sonekar
Principal
J.D. College of Engineering &
Management , Nagpur

DECLARATION

I, hereby declare that the dissertation titled **"TWO WHEEL SELF BALNCING ROBOT"** submitted herein has been carried out by us in the Department of Electronic& Telecommunication Engineering of J D College of Engineering and Management, Nagpur. The work is original and has not been submitted earlier as a whole or in part for the award of any degree / diploma at this or any other Institution / University.

We also hereby assign to J D College of Engineering and Management, Nagpur all rights under copyright that may exist in and to the above work and any revised or expanded derivatives works based on the work as mentioned. Other work copied from references, manuals etc. are disclaimed.

Rathod.

Group Members Name
RAJESH RATHOD

Date: 15/03/21

Place: Nagpur

Educationlo Eternity

BONAFIDE CERTIFICATE

This is to certify that the project titled **TWO WHEEL SELF BALNCING ROBOT** is a bonafide record of the work done by **Rajesh Rathod** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Specialization** at J D College of Engineering & Management, Nagpur affiliated to **RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR,** during the academic year 20182019.

Prof. P.J.Bhagat
Guide

Prof.N.N. Gyanchandani
Head Of Deparment
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Project Viva-voce held on 15/03/21

Internal Examiner

External Examiner

ABSTRACT

The robot will balance on two wheels and be able to have loads of varying weight and size placed on the top platform. It will be capable of handling disturbances including or running into stationary objects and it can accommodate flooring changes while maintaining balance. Gyroscope feed information back to arduino which feeds to two motors that drive the wheels so they stay under the centre of mass of the robot. In this thesis a two wheeled self-balancing robot has been The system in itself requires active control in order to be stable. The Using open source Arduino Uno and reliable angular and positional data the system can be made stable by implementing a controller with the .Motor driver L298N Being a state space feedback arduino the model has to be a good representation of reality since the output signal depends on the model. In this thesis, the results showed that the model is not yet reliable. The reasons for this are discussed and recommendations for future development are listed.

ACKNOWLEDGEMENT

I express my sincere gratitude, for giving me the opportunity to work on the thesis during my final year of **Bachelor of Engineering** Thesis work is an important aspect in the field of engineering.

I owe my sincerest gratitude towards Dr.S.R.Choudhari , Principal J D College of Engineering & Management, Nagpur , for valuable advice and healthy criticism throughout my thesis which helped me immensely to complete my work successfully.

I would like to thank Prof. Suresh Rizal Sir Coordinator, J D College of Engineering & Management, Nagpur.

The constant guidance and encouragement received from Prof.N.N.Gyanchandani Head, Department of J D College of Engineering & Management, Nagpur , has been of great help in carrying out the present work and is acknowledged with reverential thanks.

I would like to express a deep sense of gratitude and thanks profusely to Prof. P.J. Bhagat Assistant Professor, Department of Electronics And Telecommunication, J D College of Engineering & Management, Nagpur, who was the thesis Supervisor. Without the wise counsel and able guidance, it would have been impossible to complete the thesis in this manner.

I would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during my presentation of the work.

Name of the student *Roll No.*

Rajesh Rathod ----------01----------

FOOT STEP POWER GENERATION USING ARDUINO

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Engineering in Electronics & Telecommunication

Submitted by

Manisha Pandey

Shivani Bagde

Shubham Bokde

Hemant Bhagat

Vishal Manekar

Apoorva Dhuriya

Under the Guidance of

Prof. Tushar Muratkar

Education to Eternity

Electronics and Telecommunication

J D College of Engineering and Management, Nagpur-441501

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"FOOT STEP POWER GENERATION USING ARDUINO"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Tushar Muratkar, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:
Date:

Projectee
Manisha Pandey
Shivani Bagde
Shubham Bokde
Hemant Bhagat
Vishal Manekar
Apoorva Dhuriya

CERTIFICATE

This is to certify that the project report entitled, **"FOOT STEP POWER GENERATION USING ARDUINO"** in the subject **Electronics and Telecommunication** in the faculty of Science and Technology submitted by **Manisha Pandey, Shivani Bagde, Shubham Bokde, Hemant Bhagat, Vishal Manekar, Apoorva Dhuriya** to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Tushar Muratkar.

Prof. Tushar Muratkar
Electronics and Telecommunication

Forwarded to:

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Project Coordinator

Prof. Neetu Gyanchandani
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Principal

Principal
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Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **FOOT STEP POWER GENERATION USING ARDUINO** is approved work done by

Manisha Pandey
Shivani Bagde
Shubham Bokde
Hemant Bhagat
Vishal Manekar
Apoorva Dhuriya

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Electronics and Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** during the academic year 2020-2021.

Prof. Tushar Muratkar
Guide

Prof. Neetu Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Neetu Gyanchandani**, Head, Department of **Electronics and Telecommunication** J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof.Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Tushar Muratkar**, Department of **Electronics and Telecommunication**, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work.

We express gratitude to other faculty members of **Electronics and Telecommunication** Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Projectee

Manisha Pandey
Shubham Bokde
Vishal Manekar
Shivani Bagde
Hement Bhagat
Apoorva Dhuriya

ABSTRACT

Foot step power generation by using Arduino nano man has needed and used energy at an increasing rate for the sustenance and wellbeing since time immemorial. Due to this Man lot of energy resources have been exhausted and wasted. Now we are Proposal for the utilization of waste energy of foot power with human locomotion is very much relevant and important for highly populated countries like India where the railway station, temples, office, toll tax etc., are overcrowded all round the clock. In this project the force energy is produced by human footsteps and the force energy is converted into mechanical energy by rack and pinion mechanism, electricity is produced by dc motor generator. This power source has many applications as in home , agriculture application and street lighting and as energy source for sensors in remote locations. This paper is mainly all about generating electricity when people walk on the Floor. The forces you exert which is

wasted when a person walks by. This idea is to convert the weight energy to electrical energy The Power generating floor intends to translate the kinetic energy to the electrical power. The Energy Crisis is the main issue of world these days. The motto of this research work is to face this crisis some how. Though it won't meet the requirement of electricity but as a matter of fact if we are able to design a power generating floor that can produce 100W on just 20 steps, then for 120 steps we can produce 1000 Watt and if we install such type of 100 floors with this system then is an achievement to make it significant power it can produce 1MegaWatt. Which itself.

"IOT Based Environmental Monitoring System Using Blynk Server"

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology
In
Electronics Engineering

Submitted by
Pawan Jadhao
Ankit Chandewar
Payal Mendhe
Tushar Fule
Yogesh Kapgate

Under the Guidance of
Prof. Dharamveer Choudhary

Education to Eternity

Electronics Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IOT Based Environmental Monitoring System using Blynk Server"** in the subject **Electronics Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Dharamveer Choudhary**, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date :

Name of Students

Pawan Jadhao

Ankit Chandewar

Payal Mendhe

Tushar Fule

Yogesh Kapgate

CERTIFICATE

This is to certify that the project report entitled, **"IOT Based Environmental Monitoring System Using Blynk Server"** in the subject **Electronics Enginnering** in the faculty of Science and Technology submitted by **Pawan Jadhao, Ankit Chandewar, Payal Mendhe, Tushar Fule, Yogesh Kapgate** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Dharamveer Choudhary
Electronics and
Telecommunication/ Electronics Engineering

Forwarded to:

Prof. N. N. Gyanchandani
Head of the Department
Electronics / Electronics And
Telecommunication Engineering

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Prof. Amol Dhankar
Project Coordinator

Dr. S. V. Sonekar
Principal JDCOEM, Nagpur

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IOT BASED ENVIRONMENTAL MONITORING SYSTEM USING BLYNK SERVER** is approved work done by **Pavan Jadhao, Ankit Chandewar, Payal Mendhe, Tushar Fule, Yogesh Kapgate** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Electronics and Electronics and Telecommunication** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Dharamveer Choudhary
Guide

Prof. N. N. Gyanchandani
Head of the Department

HOD, Dept. of EN/ETC
JD College of Engineering
& Management, Nagpur

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. S. V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards **Dr. S. L. Haridas**, Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Neetu Gyanchandani**, Head, Department of - Electronics/ Electronics and Telecommunication, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Amol Dhankar**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Dharamveer Choudhary**, Department of Electronics / Electronics and Telecommunication, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner. We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Electronics/ Electronics and Telecommunication Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Name of the students

Pawan Jadhao

Ankit Chandewar

Payal Mendhe

Tushar Fule

Yogesh Kapgate

ABSTRACT

In this paper, we have proposed an Internet of Things (IoT) based a real-time environmental monitoring system. Internet of Things (IoT) plays an important role in today's world through a vast and persistent system of sensor networks concerned to the environment and its parameters. In 21st century there is an extreme growth is industrial infrastructure l frameworks creating environmental affairs like atmospheric changes, malfunctioning and pollution. Due to extreme growing vehicle and environment affecting factors there are sudden changes in climate and other element of environment. This sudden climate changes affects physically on human body. Since it is necessary to monitor this environmental elements to being safe and fit physically [2]. We have developed this concept to monitor this environmental elements or factors of interest like temperature, Humidity, Dust Concentration, external Air pressure on ground level.

DEVELOPMENT OF A MODERN SMART HEADGEAR FOR PREVENTING RASH DRIVING, ACCIDENT, AND SPEED DETECTION IN BLUETOOTH ENABLED WITH NOTIFICATION AND ALERT SYSTEM

A Project Report was submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology in Information Technology Engineering

Submitted by

Aditi A. Garade

Priyanka R. Bains

Shreya S. Chamalwar

Pratiksha P. Lanjewar

Pranoti R. Sahare

Under the Guidance of

Prof. Aniket V. Bhoyar

Education to Eternity

Department of Computer Science & Information Technology Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Development of A Modern Smart Headgear for Preventing Rash Driving, Accident and Speed Detection in Bluetooth Enabled with Notification and Alert System"** in the subject **Information Technology Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr. /Prof. **Aniket V. Bhoyar**, Dept. of Computer Science & Information Technology Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree diploma or certificate course.

Place: Nagpur
Date:

Aditi Garade
Priyanka Bains
Shreya Chamalwar
Pratiksha Lanjewar
Pranoti Sahare

CERTIFICATE

This is to certify that the project report entitled. " **Development Of A Modern Smart Headgear For Preventing Rash Driving, Accident And Speed Detection In Bluetooth Enabled With Notification And Alert System**" in the subject **Computer Science & Engineering** in the faculty of Science and Technology submitted by **Aditi Garade, Priyanka Bains, Shreya Chamalwar, Pratiksha Lanjewar, Pranoti Sahare** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Dept. of Computer Science & Information Technology Engineering

Forwarded to:

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Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
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Dr S. V. Sonekar
Principal

Principal
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Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DEVELOPMENT OF A MODERN SMART HEADGEAR FOR PREVENTING RASH DRIVING, ACCIDENT AND SPEED DETECTION IN BLUETOOTH ENABLED WITH NOTIFICATION AND ALERT SYSTEM** is approved work done by

Aditi Garade

Priyanka Bains

Shreya Chamalwar

Pratiksha Lanjewar

Pranoti Sahare

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2021-2022.

Prof. Aniket V. Bhoyar
Project Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on_____

Internal Examiner/Guide

External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDGEMENT

We express our sincere gratitude, for allowing us to work on the project during our final year of B.Tech.

We owe our sincerest gratitude to Dr. **S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere**, Head, Department of Computer Science & Information Technology Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to us Guide **Prof. Aniket Vijay Bhoyar**, Department of Computer Science & Information Technology Engineering, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the Computer Science & Information Technology Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout this work.

Aditi Garade
Priyanka Bains
Shreya Chamalwar
Pratiksha Lanjewar
Pranoti Sahare

LIST OF FIGURES

LIST OF TABLES

(Note: The tables are not used in this project.)

ABBREVIATIONS

GPS	Global Positioning System
GSM	Global System for Mobile communication
EEPROM	Electrically Erasable Programmable Read-Only Memory
ADXL	Accelerometer

SYMBOLS

(Note: The symbols are not used in this project)

ABSTRACT

A smart helmet is a type of protective headgear used by the rider which makes bike driving safer than before. The main purpose of this smart helmet is to provide safety for the riders. This implements by using advanced features like accident identification, rash driving detection, location tracking, use as a hands-free device, fall detection. This makes not only smart helmets but also features of the smart bike. It is implemented using GSM technology.

The working of this smart helmet is very simple, bump sensors are placed in different places of the helmet where the probability of hitting is more which is connected to Arduino. So, when the rider crashes and the helmet hit the ground, these sensors sense and give it to the Arduino, then the controller sends using a GSM module that is interfaced to it. When the data exceeds the minimum stress limit then the GSM module sends messages automatically to family members.

It's compulsory to wear a helmet, without a helmet ignition switch cannot be ON. So, when the accident occurs, it will send a message by GSM to register numbers with their current location by GPS module. It can use to receive calls while driving. The distinctive utility of the project is fall detection, if the bike rider falls from the bike, it will send a message automatically. Along with this, it has helped to reduce rash driving. If a person is driving rashly, then the message will be sent to the nearest RTO and their family members.

Diabetic Blindness Detection System using Convolution Neural Network

Thesis submitted to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
In partial fulfillment of requirement for the award of degree of

Bachelor of Engineering
in
Information Technology

Submitted by

Akash Gajbhiye
Dipali Hande
Parvez Iqbal
Mayuri Gajbhiye

Under the guidance of

Prof. Sonali Zunke

Department of Information Technology

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Nagpur -441501
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2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Diabetic Blindness Detection System using Convolution Neural Network"** in the subject **Information Technology** in the faculty of Science and Engineering is the original contribution carried out by us under the guidance of Prof. Sonali Zunke, Department of Science and Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date:

Group Members Name

1. Akash Gajbhiye
2. Dipali Hande
3. Parvez Iqbal
4. Mayuri Gajbhiye

Education to Eternity

CERTIFICATE

This is to certify that the project report entitled, **"Diabetic Blindness Detection System using Convolution Neural Network"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Akash Gajbhiye, Dipali Hande, Parvez Iqbal, Mayuri Gajbhiye** to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** for the award of the degree of Bachelor of Engineering in Computer Science and Engineering is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Sonali Zunke)
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Forwarded to:

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(Dr. S.V. Sonekar)
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Diabetic Blindness Detection System using Convolution Neural Network** is approved work done by

Akash Gajbhiye

Dipali Hande

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Mayuri Gajbhiye

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **Information Technology** at J D College of Engineering & Management, Nagpur affiliated to **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** during the academic year 2020 - 2021.

Prof. Sonali Zunke
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of Bachelor of Engineering in Computer Science and Engineering. We owe our sincerest gratitude towards **Dr. S.V. Sonekar,** Officiating Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Sonali Zunke,** Department of Computer Science and Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate,** Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide Prof. Sonali Zunke, Department of Computer Science and Engineering, J D College of Engineering & Management, Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Information Technology Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Akash Gajbhiye
Dipali Hande
Parvez Iqbal
Mayuri Gajbhiye

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Diabetic retinopathy is a leading cause of blindness among working-age adults. Early detection of this condition is critical for good prognosis. In this project, we demonstrate the use of convolutional neural networks (CNNs) on color fundus images for the recognition task of diabetic retinopathy staging. Our network models achieved test metric performance comparable to baseline literature results, with validation sensitivity of 95%. We additionally explored multinomial classification models, and demonstrate that errors primarily occur in the misclassification of mild disease as normal due to the CNNs inability to detect subtle disease features. We discovered that pre-processing with contrast limited adaptive histogram equalization and ensuring dataset fidelity by expert verification of class labels improves recognition of subtle features. Transfer learning on pretrained GoogLeNet and AlexNet models from ImageNet improved peak test set accuracies to 74.5%, 68.8%, and 57.2% on 2-ary, 3-ary, and 4-ary classification models, respectively.

"Robotic machine to solve matrix equation with the help of natural language processing and image processing"

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

Information Technology

Submitted by

Dipak Mendhe

Sandesh Ukey

Under the Guidance of

Prof.Sonali Zunke

Education to Eternity

Department of Information Technology

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonare

Year 20-2021

DECLARATION

We hereby declare that the work presented in this project reportentitled, **"Robotic Machine to solve matrix equation with the help of natural language processing and image processing"** in the subject **Information Technology** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Sonali Zunke, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:

Mr. Dipak Mendhe
Mr. Sandesh Ukey

CERTIFICATE

This is to certify that the project report entitled, " **Robotic machine to solve matrix equation with the help of natural language processing and image processing**" in the subject **Information Technology** in the faculty of Science and Technology submitted by **Dipak Mendhe, Sandesh Ukey,** to **Dr. Babasaheb Ambedkar Technological University, Lonare.**

For the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof.Sonali Zunke)
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Forwarded to:

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This is to certify that the Project Report on **Robotic machine to solve matrix equation with the help of natural language processing and image processing** is approved work done by

Mr. Dipak Mendhe
Mr. Sandesh Ukey

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonare** during the academic year 2020-2021.

Prof. Sonali Zunke
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Internal Examiner/ Guide

External Exam

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH.We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.The constant guidance and encouragement received from **Prof. Supriya Sawashere**, Head, Department of CSE-IT, J D College of Engineering & Management Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, and Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Sonali Zunke**, Department of CSE-IT, J D College of Engineering and Management Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of CSE-IT Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Mr. Dipak Mendhe
Mr. Sandesh Ukey

LIST OF FIGURES

ABBREVIATIONS

AI	Artificial Intelligence
AR	Auto latest Model
ARMA	Autoregressive Moving Average Model
ARMAX	ARMA with external input
ARM1	ARDUINO model 1
LCM2	LCD model 2

ABSTRACT

As the world is moving faster, humans are not taking a step back to make the world more better place, may it be by enhanced technology or extreme creativity. We know that a human life now is full of technology and every little thing is just a click away that is the favour of automation for everything. If we explore Automation more, the major concepts which will still the spotlight are Artificial Intelligent (AI), Machine Learning (ML) and the list will continue. The other concept which steals the limelight and make every automation possible is the programming language we use to make the features we are now using possible. The language which is exponentially gaining fame is Python. If all the above mentioned technology is combined together, we get most of the automation possible today. At every corner of the world, this technology is being used to make things lively and possible. Not only companies but every industry (food, entertainment, education, manufacturers and many more) are relying on this technology. The calculation which plays a significant role in almost every bit is also being automated to make the things very simpler and quicker. Even though, we have calculator but it still cannot solve the problems which are needed to be solve in some platforms. In this paper, we shall be discussing about a similar concept.

Keywords: **Artificial Intelligence (AI), Machine Learning (ML), Image processing, Raspberry Pi, Python.**

DEVELOPMENT of AI BASED RESCUE CONTROL ROBOT with ADVANCE RESCUING SYSTEM FOR ASSISTANCE

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor Of Technology

In

Information Technology

Submitted by

Madhulika Wannewar

Varsha Pandhare

Kshitij Choubey

Vipul Gajbhiye

Vaibhav Pandey

Under the Guidance of

Prof. Rohan Kokate

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J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"DEVELOPMENT of AI BASED RESCUE CONTROL ROBOT with ADVANCE RESCUING SYSTEM FOR ASSISTANCE"** in the subject **Information Technology** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Rohan Kokate, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 4th Dec 2021

Group Members Name

Madhulika Wannewar

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CERTIFICATE

This is to certify that the project report entitled, **"DEVELOPMENT of AI BASED RESCUE CONTROL ROBOT with ADVANCE RESCUING SYSTEM FOR ASSISTANCE"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Madhulika V. Wannewar, Varsha C. Pandhare, Kshitij R. Choubey, Vipul R. Gajbhiye, Vaibhav B. Pandey** to **Dr. Babasaheb Ambedkar Technological University, Lonere**
for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

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Forwarded to:

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CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"DEVELOPMENT of AI BASED RESCUE CONTROL ROBOT with ADVANCE RESCUING SYSTEM FOR ASSISTANCE"** is approved work done by

Madhulika Wannewar

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Kshitij Choubey

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Prof. Rohan Kokate
Guide

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INDEX

CONTENTS AT GLANCE

ACKNOWLEDGMENT

We express our sincere gratitude, for allowing us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude to **Dr. S.V. Sonekar**, Officiating Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere,** Head, Department of Information Technology, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Rohan Kokate**, Department of Information Technology, J D College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the Information Technology Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout this work.

Madhulika Wannewar

Varsha Pandhare

Kshitij Choubey

Vipul Gajbhiye

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LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Disasters and danger come without giving us warning so we must always be prepared for every situation. So for handling such situations robots can play an important role as in these situations there can be a huge risk of life too. It is wirelessly and remotely controlled through devices to make robots move from source to destination point. In many cases, the ground becomes uneven due to disaster effects, so robots can move through such places easily. As in many rescuing operations, humans are widely used to overcome such situations and so for assisting them, robots can be used for gathering data from accidental places. Once the data on the casualty-prone area is collected then fire-fighters can understand the data and analyze the situation where they have to perform a rescue operation. This way fire-fighter can work more efficiently and confidently complete their task by countering the risk analyzed by the collected data.

Converting Handwritten words into Machine-editable text using Artificial Neural Network

Thesis submitted to Dr. Babasaheb Ambedkar Technological University, Lonere
In partial fulfillment of requirement for the award of degree of

Bachelor of Technology
in
Information Technology

Submitted by

Nikhil Waghmare
Khushagra Nakhate
Aman Ganvir
Abhishek Wahane

Under the guidance of
Prof. Jolly Nikhade

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Department of Information Technology

J·D College of Engineering and Management, Nagpur

Education to Eternity

2020-2021

DECLARATION

We, hereby declare that the dissertation titled **"Converting Handwritten words into Machine-editable text using Artificial Neural Network"** submitted herein has been carried out by us in the Department of Information Technology of J D College of Engineering and Management, Nagpur. The work is original and has not been submitted earlier as a whole or in part for the award of any degree / diploma at this or any other Institution / University.

We also hereby assign to J D College of Engineering and Management, Nagpur all rights under copyright that may exist in and to the above work and any revised or expanded derivatives works based on the work as mentioned. Other work copied from references, manuals etc. are disclaimed.

Place:

Date:

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Abhishek Wahane

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CERTIFICATE

This is to certify that the project report entitled, **"Converting Handwritten words into Machine-editable text using Artificial Neural Network"** in the subject **Information Technology** in the faculty of Science and Technology submitted by by **Nikhil Waghmare, Khushagra Nakhate, Aman Ganvir, Abhishek Wahane** to **Dr. Babasaheb Ambedkar Technological University, Lonere**
for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

26/11/2021

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Name of the Students
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Internal Examiner/ Guide

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INDEX

Education to Eternity

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar,** Officiating Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere,** Head, Department of CSE/IT, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate,** Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Jolly Nikhade,** Department of CSE/IT, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of CSE/IT Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Nikhil Waghmare
Khushagra Nakhate
Aman Ganvir
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Education to Eternity

LIST OF FIGURES

Figures should be listed as per their number in the chapters. For ex: figure 2 of chapter 5 should be stated as Figure 5.2 with their names. This should be done for every chapter separately.

Education to Eternity

LIST OF ACRONYMS

Sr. No	Acronym	Full Form
1	CNN	Convolutional Neural Network
2	HWR	Handwriting recognition
3	RNN	Recurrent Neural Network
4	HMM	Hidden Markov Models
5	MLP	Multi-Layer Perceptron

JD COLLEGE OF ENGINEERING & MANAGEMENT
Education to Eternity

Abstract

In recent decades, rapid increment in computational power accompanied by enormous amount of data being generated has enabled extensive use of neural networks for solving machine learning problems especially in pattern recognition tasks. This paper aims to briefly review three of the most prominent approaches namely, Convolutional Neural Network, Recurrent Neural Network and Hidden Markov Models and discuss their most notable applications for the problem of Offline Handwriting Recognition. We first give an outline of a typical Handwriting Recognition System, briefly talking about each of the steps involved and then give and overview of these three technologies while discussing a few important literatures of each. The problem of Handwriting recognition (HWR) is being actively researched from more than last 40 years, and while significant progress has been made, there is still a wide gap between performance of recognition systems and human capabilities, which is why it still remains an open problem. Recognition of unconstrained handwriting is a very difficult pattern recognition task due to seemingly infinite variations of writing styles of different authors. Even the writing of the same author may vary under different conditions, writing material and emotional state of the author. Also, cursive handwriting makes it more difficult to segment words into individual character making naïve approaches like pre segmenting words into characters and classifying each segment impractical.

Education to Eternity

Design and Development of an Intilligent Robo for Agricultiure and Automation In Field crop Production based on Machine Learning

A Project Report Submitted In partial fulfillment of the requirement of the award of the degree of

Bachelor Of Technology

In

Information Technology

Submitted by

Pankaj Koche

Pratiksha Singh

Dimpal Badge

Dyanika Tonde

Sanjana Allurwar

Prajwal Chauvhan

Under the Guidance of

Dr. Shrikant V. Sonekar

Education to Eternity

Department of IT/CSE

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Development of an Intelligent Robo for Agriculture and Automation in Field Crop Production based on Machine learning (IRAAM)"** in the subject **Computer Science and Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr. Shrikant V. Sonekar, Department of IT-CSE, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Pankaj Koche

Pratiksha Singh

Dimpal Badge

Dyanika Tonde

Prajwal Chauvhan

Sanjana Allurwar

Place:

Date:

CERTIFICATE

This is to certify that the project report entitled, **"Design and Development of an Intelligent Robo for Agriculture and Automation in Field Crop Production based on Machine learning (IRAAM)"** in the subject **Information Technology and Engineering** in the faculty of Science and Technology submitted by **Pankaj Koche, Pratiksha Singh, Prajwal Chauvhwan, Dimple Bagde, Dyanika Tonde, Sanjana Tonde** to **Dr. Babasaheb Ambedkar Technological University, Lonare** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

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Project Coordinator

Prof. Supriya Sawashere
Head of the Department Department
of Information Technology

Dr. S. V. Sonekar
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Design and Development of an Intelligent Robo for Agriculture and Automation in Field Crop Production based on Machine learning (IRAAM)"** is approved work done by

Pankaj Koche

Pratiksha Singh

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Sanjana Allurwar

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Dr. Shrikant V. Sonekar
Project Guide
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Prof. Supriya Sawashere
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INDEX

CONTENTS AT GLANCE

Acknowledgement

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Supriya Sawashere**, Head, Department of CSE-IT, J D College of Engineering & Management Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Madhuri Pal**, Department of IT-CSE, J D College of Engineering and Management Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of IT-CSE Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Pankaj Koche

Pratiksha Singh

Prajwal Chauvhan

Dimpal Bagde

Dyanika Tonde

Sanjana Allurwar

LIST OF FIGURES

LIST OF ACRONYMS

Sr. No	Acronym	Full Form
1.	ARGOBOT	Agricultural Robot
2.	DSI	Display Serial Interface
3.	CSI	Camera Serial Interface
4.	IDE	Integrated Development Environment
5.	DAG	Directed Acyclic Graph
6.	CNN	Convolutional Neural Networks
7.	LSTM	Long Short-Term Memory
8.	NGS	Next Generation Sequencing
9.	ROI	Region of Interest
10.	IoT	Internet of Things
11.	ANN	Artificial Neural Network
12.	SVM	Support Vector Machine
13.	LCD	Liquid Crystal Display
14.	TCP/IP	Transmission control protocol / Internet Protocol
15.	Wi-Fi	Wireless Fidelity
16.	PEROM	Programmable and Erasable Read Only Memory
17.	NPL	Natural processing languages
18.	AIML	Artificial Intelligence Markup Language
19.	GSM	Grams per Square meter
20.	PWM	Pulse Width Modulation
21.	GUI	Graphic User Interface
22.	CRAT	Classification and Regression Tree

ABSTRACT

ur project is to introduce a fundamental approach to inaugurate the use of machine learning system in framing process. comparative study between machine learning algorithms had been carried out in order to determine which algorithm the most accurate in predicting the best crop for a particular land. Farmers explore the capabilities for applications of botic process automation with image processing, pattern recognition and machine learning algorithms. By these chniques the farmers can be acknowledged with the disease the plant is suffering from and also the medications ovided to cure the disease is provided using certain data comparison techniques. The rainfall trend analysis is predicted sed on the analysis of time series and descriptive statistics. The average annual rainfall data analysis has proposed. To pe up with water scarcity in agriculture, water saving is a major priority, by upgrading the irrigation techniques and actices.

Design and Development of smart spectacle For Deaf People Using IOT

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor Of Technology

In

Information Technology

Submitted by

Name of the Student/s

Pranjal Landge

Hitesh Sakhare

Nishan Ramteke

Piyush Khobragade

Harshal Patil

Under the Guidance of

Prof. Umesh Samarth

Education to Eternity

Department of CSE/IT

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and development of smart spectacle for deaf people using IOT"** in the subject **Information Technology** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Umesh Samarth, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur.
Date: 29-6-2021

Name of Student/Students
Mr. Pranjal Ladnge
Mr. Hitesh Sakhare
Mr.Nishan Ramteke
Mr. Piyush Khobragade
Mr.Harshal Patil

CERTIFICATE

This is to certify that the project report entitled, **"Design and development of smart spectacle for deaf people using IOT"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Pranjal Landge, Hitesh Sakhare, Nishan Ramteke, Piyush Khobragade, Harshal Patil** to **Dr. Babasaheb Ambedkar Technological University, Lonere**
For the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

Prof. Umesh Samarth
Department of CSE/IT

(Prof. Supriya Sawwashere)
Head of the Department
Department of CSE/IT

(Dr. S.V. Sonekar)
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DESIG AND DEVELOPMENT OF SMART SPECTACLE FOR DEAF PEOPLE USING IOT** is approved work done by

Pranjal Ladnge,

Hitesh Sakhare,

Nishan Ramteke,

Piyush Khobragade ,

Harshal Patil

In partial fulfillment of the requirements for the award of the degree of **Bachelor Of Technology** in **INFORMATION TECHNOLOGY** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Umesh Samarth
Department of CSE/IT

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on 29-06-2021

Internal Examiner/ Guide

External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E.

We owe our sincerest gratitude towards **Dr. S.V. Sonekar,** Officiating Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere,** Head, Department of CSE/IT ,J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate,** Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Umesh Samrth,** Department of CSE/IT, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of CSE/IT_Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Mr.Hitesh Sakahre
Mr.Nishan Ramteke
Mr.Piyush Khobragade
Mr.Pranjal Landge
Mr.Harshal Patil

LIST OF FIGURES

ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
ML	Machine Learning
NLP	Natural Language Processing
HMD	Head Mounted Display
OCR	Optical Character Recognition

SYMBOLS

GHz	Gigahertz
KB	Kilo bite
GB	Giga bite

ABSTRACT

The main goal of this thesis project to provide a more sophisticated way to replace the lost senses when people with special needs. The project aims to build smart glasses that contain specialized object detection applications based on the voice assistant system. The work is divided in two major logical parts: theoretical and practical. Each part represents different viewpoint on the process of Internet of Things in theory and production. The theory part of this thesis described all the technologies which were used in the process of final product creation, their basics and working principles. These included descriptions of technologies used in the project such as Raspberry Pi device and programming languages alongside other supporting tools. It also contains a description of the work projects related to several institutions with different ideas based on the same basis but with different results, most of these products rely on the system of the voice assistant to access several applications such as calendar or contact feature, telephone and maps. The practical part consisted of a chronological description of the smart glasses development. The whole development cycle from the initial idea of the operating systems to the final state of the IoT product was described. The implementation part was focused on the creation of TensorFlow object detection applications. The applications were designed in order to provide a solution for visually impaired and deaf people with an open-source machine learning library for research and production. The main responsibilities of applications such as the discovery of a blind application object are transferred to the person who has lost this meaning through the camera image as an alternative eye, also the application translated by the languages of the deaf and mute. The final result of this research was a smart glasses product with different integration features and implemented software. The product was delivered in the requested timeframe with all the requirements satisfied.

***Keywords*: Information Technology, Augmented Reality, Python, Mobile Application, Raspberry Pi, Logistics, Pi Camera, IoT**

IoT Based Smart Energy Meter and Billing System

A Project Report submitted in partial fulfillment of the requirements
for the award of the degree of

Bachelor of Technology In

Information Technology

Submitted by

Shubham Thulkar

Praful Ikhankar

Rahul Wadhai

Mrunali Meshram

Triveni Tekam

Under the Guidance of

Prof.Rohan Kokate

Education to Eternity

Department of Information Technology

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonare

Year 20-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, "IoT Based Smart Energy Meter and Billing System" in the subject Information Technology **in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof.Rohan Kokate, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.**

Place: Nagpur
Date:

Mr. Shubham Thulkar
Mr. Praful Ikhankar
Mr. Rahul Wadhai
Miss. Mrunali Meshram
Miss. Triveni Tekam

CERTIFICATE

This is to certify that the project report entitled, **"IoT Based Smart Energy Meter and Billing System"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Shubham Thulkar, Praful Ikhankar, Rahul Wadhai, Mrunali Meshram , Triveni Tekam** to **Dr. Babasaheb Ambedkar Technological University, Lonare.**

For the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Rohan Kokate)
Information Technology

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. Supriya Sawashere)
Head of the Department
Information Technology

(Dr. S. V. Sonekar)
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IoT Based Smart Energy Meter and Billing System** is approved work done by

Mr. Shubham Thulkar

Mr. Praful Ikhankar

Mr. Rahul Wadhai

Miss.Mrunali Meshram

Miss. Triveni Tekam

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonare** during the academic year 2020-2021.

Prof. Rohan Kokate
Guide

Prof. Supriya Sawashere
Head of the Department

Project Examination held on _____

Internal Examiner/ Guide

External Exam

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH. We owe our sincerest gratitude towards **Dr. S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.The constant guidance and encouragement received from **Prof. Supriya Sawashere**, Head, Department of CSE-IT, J D College of Engineering & Management Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, and Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Rohan Kokate**, Department of CSE-IT, J D College of Engineering and Management Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of CSE-IT Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Mr. Shubham Thulkar.
Mr. Praful Ikhankar
Mr.Rahul Wadhai,
Miss.Mrunali Meshram
Miss.Triveni Tekam

LIST OF FIGURES

ABBREVIATIONS

AI	Artificial Intelligence
AR	Autoregressive Model
ARMA	Autoregressive Moving Average Model
ARMAX	ARMA with internal input
AMM1	Activated meter Model 1
AWM2	Activated Online WEB Model 2
RD	READING DIMAND
AC	Ambedded C Algorithm

ABSTRACT

We can see a person standing in front of our house from electricity board, whose duty is to read the energy meter and handover the bills to the owner of that house every month. This is nothing but meter reading and according to that reading we have to pay the bills. The main drawback of this system is that person has to go area by area and he has to read the meter of every house and handover the bills. Many times errors like extra bill amount, or notification from electric board even though the bills are paid are common errors. To overcome this drawback we have come up with an idea which will eliminate the third party between the consumer and service provider, even the errors will be overcome. Apart from this we also propose to make the system more dynamic and reduce the electricity wastage. If the person is not in room the electric appliances will automatically go OFF. We propose to develop an android application, which will show the real time bill.

***Keywords*: Android app, Electric Meter, Smart Meter, IoT, Smart City**

UNMANNED AERIAL VEHICLE (UAV) FOR MONITORING AND CROP DISEASE DETECTION IN PRECISION AGRICULTURE

A thesis submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Information Technology Engineering

Submitted by

Sneha Paherwar

Shrishti Paherwar

Sakshi Mishra

Aman Patil

Saurav Anasane

Under the Guidance of

Prof. Mirza Moiz Baig

Education to Eternity

Department of Computer Science & Information Technology Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"UNMANNED AERIAL VEHICLE (UAV) FOR MONITORING AND CROP DISEASE DETECTION IN PRECISION AGRICULTURE"** in the subject **Information Technology Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Dr./Prof. **Mirza Moiz Baig**, Dept. of Computer Science & Information Technology Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date:

Sneha Paherwar
Shrishti Paherwar
Sakshi Mishra
Aman Patil
Saurav Anasane

CERTIFICATE

This is to certify that the project report entitled, **"UNMANNED AERIAL VEHICLE (UAV) FOR MONITORING AND CROP DISEASE DETECTION IN PRECISION AGRICULTURE"** in the subject **Computer Science & Engineering** in the faculty of Science and Technology submitted by **Sneha Paherwar, Shrishti Paherwar, Sakshi Mishra, Saurav Anasane, Aman Patil** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Dept. of Computer Science & Information Technology
Engineering

Forwarded to:
Prof. M. M Baig
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Computer Science & Information Technology

Dr. S. V. Sonekar
Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **UNMANNED AERIAL VEHICLE (UAV) FOR MONITORING AND CROP DISEASE DETECTION IN PRECISION AGRICULTURE** is approved work done by

Sneha Paherwar

Shrishti Paherwar

Sakshi Mishra

Aman Patil

Saurav Anasane

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. M. M. Baig
Project Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on_____

Internal Examiner/Guide

External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.Tech.

We owe our sincerest gratitude towards Dr. **S.V. Sonekar**, Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from **Prof. Supriya Sawwashere**, Head, Department of Computer Science & Information Technology Engineering, J D College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank **Prof. Rohan Kokate**, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project.

We would like to express a deep sense of gratitude and thanks profusely to us Guide **Prof. Mirza Moiz Baig**, Department of Computer Science & Information Technology Engineering, J D College of Engineering & Management, Nagpur. Without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Computer Science & Information Technology Engineering Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Sneha Paherwar

Shrishti Paherwar

Sakshi Mishra

Saurav Anasane

Aman Patil

LIST OF FIGURES

LIST OF TABLES

(**Note:** The tables are not used in this project.)

ABBREVIATIONS

UAV	Unmanned Aerial Vehicle
CNN	Convolutional Neural Network
WSN	Wireless Sensor Network

SYMBOLS

(Note: The symbols are not used in this project)

ABSTRACT

An Unmanned Aerial Vehicle [UAV] works on monitoring the plant healthiness. The main purpose of the drone is to analyze the healthiness of plant and to detect the different diseases by applying neural network tool, image pre-processing method based on color changes, texture pattern, gradient, shape changes. This will be beneficial for farmer, which will ultimately meet the robust demand of today's generation. Apart from this there is an additional features of leaf classification. Some of the factors that can affect the whole field plants are some growth of unwanted plants, the growth of this plant can't be recognized initially but after classifying the leaves in the field majority of the leaves will be of same pattern but the different kind of leaves will be considered as unwanted plants by providing a dataset to the neural network.

ELECTRIC TRANSFORMATION DP MAINTENANCE USING ANDROID APPLICATION

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

INFORMATION TECHNOLOGY

Submitted by

SONALI MANDAL

MANISH NERKAR

PRITISH MENDHEKAR

ANUSHKA DESHBHRATAR

APURVA NAGARWAR

Under the Guidance of

Prof. Milind tote

Education to Eternity

Department of CSE-IT

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Electric Transformation DP Maintenance Using Android Application"** in the subject **Information Technology** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Milind Tote**, Department of CSE-IT, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 30th May 2022

Name of Students
Sonali Mandal
Manish Nerkar
Pritish Mendhekar
Anushka Deshbhratar
Apurva Nagarwar

CERTIFICATE

This is to certify that the project report entitled, **"Electric Transformation DP Maintenance Using Android Application"** submitted by: **Sonali Mandal, Manish Nerkar, Pritish Mendhekar, Anushka Deshbhratar and Apurva Nagarwarto Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Milind Tote)
Project Guide
Department of CSE-IT

Forwarded to:

(Prof. Rohan Kokate)
Project Coordinator

(Prof. Supriya Sawwashere)
Head of the Department
Department of CSE-IT

Dr. S.V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
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Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Electric Transformation DP Maintenance Using Android Application "is approved work done by: Sonali Mandal, Manish Nerkar, Pritish Mendhekar, Anushka Deshbhratar, Apurva Nagarwar**, in partial fulfillment of the requirements for the award of the degree of Bachelor Of Technology in Information Technology at J D College of Engineering & Management, Nagpur affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

During the academic year 2020-2021.

Prof. Milind Tote
Project Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on_____

InternalExaminer/ Guide

External Examiner

INDEX

CONTENTS AT GLANCE

ACKNOWLEDEMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.E. We owe our sincerest gratitude towards **Dr. Srikant V. Sonkar**, Principal JD College of Engineering & Management, Nagpur, for providing the platform and necessary facilities. We also express our sincere gratitude towards **Dr. S.V. Sonekar, Principal**, JD College of Engineering and Management, Nagpur, for continuous support and motivation. The constant guidance and encouragement received from **Prof. Supriya Sawwashere**, Head, Department of Computer Science and Engineering JD College of Engineering & Management, Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks. We would like to thank **Prof. Supriya Sawwashere,** Project Coordinator, JD College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Milind Tote,** Department of Computer Science and Engineering, JD College of Engineering & Management, Nagpur. Without his wise counsel and able guidance, it would have been impossible to complete the project in this manner. We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of Computer Science and Engineering Department, JD College of Engineering & Management, Nagpur, for their intellectual support throughout the courses of this work.

Name of students:-

Sonali Mandal

Manish Nerkar

Pritish Mendhekar

Apurva Nagarwar

Anushka Deshbhratar

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

AI	Artificial Intelligence
DP	Distribution Panel
RTU	Remote Terminal Unit
IOT	Internet Of Things

SYMBOLS

K	Specific substrate utilization rate constant
k_d	Microbial decay coefficient
K_s	Substrate concentration when growth rate is half of maximum
Q	Rate of wastewater flow to the aeration tank
q	Specific substrate utilization rate
Q_e	Effluent flowrate
q_m	Maximum specific substrate utilization rate

ABSTRACT

A distribution transformer provides the final voltage transformation in an electric power distribution system network. Because of, large of transformer and various components over a wide area in a power system, the data acquisition, condition monitoring are the important issues. The remote monitoring of transformer health over internet system is a system that could be used for the real-time data monitoring of transformer through internet of things (IOT). Also it proposed to send the central database via Wi-Fi module for further process.

The real time monitoring system consist of embedded system. Wi-Fi and sensors are installed at transformer site which reads and measure the physical quantity from the distribution transformer and further it converts into the analog signal. As the parameters used it processed and records the data in system. In case of emergency situation at distribution transformer the obtained parameters sense the signal and it sends alert to the Android app regarding information about the parameter signals at distribution transformer according to the data occurred by the micro-controller. Arduino board designs use a variety of microprocessors and controllers the are equipped with a set of digital and analog input/output pins that may be interfaced to various expansion boards and other circuits.

Design and Development of IoT Based Wheelchair Navigation System for Physically Challenged People

A thesis submitted to Dr. Babasaheb Ambedkar Technological University, Lonere In partial fulfillment of the requirement for the award of the degree of

Bachelor of Technology in

Information Technology

Submitted by

Vaibhavi Kengale
Kalyani Bansod
Shubham Bawane
Chaitali Sure
Mrunali Dalal

Education to Eternity

Under the guidance of

Prof. Aniket Bhoyar

Department of Information Technology

J D College of Engineering and Management, Nagpur

2020-2021

CERTIFICATE

This is to certify that the project report entitled, **"DESIGN AND DEVELOPMENT OF IOT BASED WHEELCHAIR NAVIGATION SYSTEM FOR PHYSICALLY CHALLENGED PEOPLE"** in the subject **Information Technology** in the faculty of Science and Technology submitted by **Vaibhavi Kengale, Kalyani Bansod, Shubham Bawane, Chaitali Sure, Mrunali Dalal** to **Dr. Babasaheb Ambedkar Technical University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Aniket Bhoyar
Department of Information Technology

Forwarded to:

Prof. Rohan Kokate
Project Coordinator

Prof. Supriya Sawwashere
Head of the Department
Department of
Information Technology

Principal

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DESIGN AND DEVELOPMENT OF IOT BASED WHEELCHAIR NAVIGATION SYSTEM FOR PHYSICALLY CHALLENGED PEOPLE** is approved work done by

Vaibhavi C. Kengale

Kalyani R. Bansod

Shubham Bawane

Chaitali Sure

Mrunali Dalal

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Information Technology** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technical University, Lonere** during the academic year 2020-2021.

Prof. Aniket Bhoyar
Guide

Prof. Supriya Sawwashere
Head of the Department

Project Examination held on _____

nternal Examiner/ Guide

External Examiner

DECLARATION

We hereby declare that the work presented in this project report entitled, **"DESIGN AND DEVELOPMENT OF IOT BASED WHEELCHAIR NAVIGATION SYSTEM FOR PHYSICALLY CHALLENGED PEOPLE"** in the subject **Information Technology** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Aniket Bhoyar, Department of CSE-IT, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place:

Date:

:

Vaibhavi C. Kengale

Kalyani R. Bansod

Shubham Bawane

Chaitali Sure

Mrunali Dalal

Education to Eternity

INDEX

CONTENTS AT GLANCE

ACKNOWLEDGMENT

We express our sincere gratitude, for giving us the opportunity to work on the project during our final year of B.TECH. We owe our sincerest gratitude towards Principal J D College of Engineering & Management, Nagpur, for providing the platform and necessary facilities.

We also express our sincere gratitude towards Vice Principal and Dean Academics, J D College of Engineering and Management, Nagpur, for continuous support and motivation.

The constant guidance and encouragement received from Prof. Supriya Sawashere, Head, Department of CSE-IT, J D College of Engineering & Management Nagpur, has been of great help in carrying out the project work and is acknowledged with reverential thanks.

We would like to thank Prof. Rohan Kokate, Project Coordinator, J D College of Engineering & Management, Nagpur for providing proper guidelines and continuous efforts taken towards the completion of the project. We would like to express a deep sense of gratitude and thanks profusely to our Guide **Prof. Aniket Bhoyar**, Department of CSE-IT, J D College of Engineering and Management Nagpur. Without her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

We would like to thank the members of the Departmental Research Committee for their valuable suggestions and healthy criticism during our presentation of the work. We express gratitude to other faculty members of the CSE-IT Department, J D College of Engineering & Management, Nagpur, for their intellectual support throughout the course of this work.

Vaibhavi C. Kengale

Kalyani Bansod

Shubham Bansod

Chaitali Sure

Mrunali Dalal

Education to Eternity

LIST OF FIGURES

Education to Eternity

ABSTRACT

There are many people with disabilities in this day and age who find it is impossible to learn or perform day-to-day tasks. Some of these kinds of people rely on others for their assistance. Whichever way, they can become autonomous and conduct a few routine exercises with the assistance of helpful gadgets. Wheelchairs are the most widely used support devices. Wheelchairs are mainly wheelchairs that can help people move around who cannot walk due to illness, handicap, or damage. There are also elderly individuals, however, who cannot move the wheelchair with weak appendages and joints. Therefore, smart wheelchairs and anyone in the public eye will gain a tone for them. Smart wheelchairs are electrically operated wheelchairs with many additional components such as a PC and sensors to help the consumer and watchmaker cope safely and effectively with wheelchairs. Continuing advancement in the fields of artificial intelligence, sensor growth, and mechanical autonomy helps to create new wheelchairs. This project is designed to improve the maneuvering tasks of an intelligently self-contained wheelchair. In addition to the treatment based on computer techniques, the wheelchair requires no human intervention during navigation and percep

Education to Eternity

PROJECT REPORT

ON

"The Influence of Workfrom Home on IT Employees Productivity"

Submitted by

SHIKHA SAKHARE

Under the Guidance of

Dr. ANJALI CHANDAK

Submitted in partial fulfilment for the award of the degree

Of

Master of Business Administration

Department of Management Studies

JD College of Engineering and Management

Education to Eternity

Rashtrasant Tukadoji Maharaj Nagpur University

Nagpur

SESSION: 2020 – 2021

BONAFIDE CERTIFICATE

This is to certify that the project work, entitled **"The influence of working from home on IT employees productivity.** "is the bona fide work of **(SHIKHA SAKHARE)** who carried out the same under my supervision. This project work is submitted to **Rashtrasant Tukadoji Maharaj Nagpur University** as partial fulfilment of requirement for the award of degree of Master of Business Administration.

(Dr. Anjali Chandak)

Project Guide

Dr. Ujwala Dange

Head – Department of Management Studies

Place: Nagpur

Date: 30/06/2021

DR.S. V. SONEKAR

PRINCIPAL,

J D COLLEGE OF ENGINEERING

AND MANAGEMENT,

NAGPUR.

Principal
J D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

DECLARATION

I, the undersigned, hereby declare that the Project Report entitled **"The influence of Working From Home on IT employees productivity.** "is a bonafide and authentic work written and submitted by me to the **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in partial fulfilment of the requirements for the award of degree of Master of Business Administration under the supervision of **Dr. Anjali Chandak** .The project is entirely original and not been submitted earlier to any university for the award of any diploma or degree, nor the data have been derived for any project university.

Place: NAGPUR

Date: 30/06/2021

(SHIKHA SAKHARE)

Signature:

ACKNOWLEDGEMENT

I express my deep sense of gratitude to my Institution, **J D College of Engineering and Management, NAGPUR** for providing an opportunity in fulfilling the most cherished desire for reaching my goal.

I express my immense gratitude to our Principal **Dr.Subhash R Choudhari**for his support and encouragement for the completion of my project.

I extend the immense gratitude to the Head of the Department **Dr.UjwalaDange**for her motivation, inspiration, and encouragement for the completion for my project.

The valuable and unflinching requital support in this Endeavour of **DR. ANJALI CHANDAK** my guide, whose support & guidance was immeasurable to the completion of this project.

Last, but not the least, my heartfelt gratitude to my parents, relatives, my friends and all those luminaries and unseen hands without whose support the completion of this dissertation would not have been materialized.

(SHIKHA SAKHARE)

FINAL PROJECT REPORT

On

"A STUDY OF CONSUMER BUYING BEHAVIOUR TOWARDS FMCG PRODUCTS OF HINDUSTAN UNILEVER LTD."

Submitted by

Miss. SHIRIN NAZ MUSA SHEIKH

Under the Guidance of

Dr. Parvin Shaikh

Submitted in partial fulfillment for the award of the degree

Of

MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF MANAGEMENT STUDIES

Education to Eternity

J D COLLEGE OF ENGINEERING AND MANAGEMENT

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

NAGPUR

SESSION: 2020 – 2021

BONAFIDE CERTIFICATE

This is to certify that the project work, entitled **"A STUDY OF CONSUMER BUYING BEHAVIOUR TOWARDS FMCGPRODUCTS OF HINDUSTAN UNILEVER LTD."** is the bonafide work of **Miss. SHIRIN NAZ MUSA SHEIKH** who carried out the same under my supervision. This project work is submitted to **Rashtrasant Tukadoji Maharaj Nagpur University** as partial fulfillment of requirement for the award of degree of Master of Business Administration.

Parvin

DR. PARVIN SHAIKH

PROJECT GUIDE

DR.

HOD – DEPARTMENT OF

MANAGEMENT STUDIES

DR.S. V. SONEKAR

PRINCIPAL,

J D COLLEGE OF ENGINEERING

AND MANAGEMENT, NAGPUR.

Principal
J D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J D COLLEGE OF ENGINEERING & MANAGEMENT * NAGPUR *

PLACE:

DATE:

DECLARATION

I, the undersigned, hereby declare that the Project Report entitled **"A STUDY OF CONSUMER BUYING BEHAVIOUR TOWARDS FMCGPRODUCTS OF HINDUSTAN UNILEVER LTD."** is a bonafide and authentic work written and submitted by me to the **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in partial fulfillment of the requirements for the award of degree of Master of Business Administration under supervision of **Dr. Parvin Shaikh**, the project is entirely original and not been submitted earlier to any university for the reward of any diploma or degree, nor the data have been derived for any project or University.

Shirin Sheikh

Place: NAGPUR

Date:

Miss. SHIRIN NAZ MUSA SHEIKH

Signature

ACKNOWLEDGEMENT

I express my deep sense of gratitude to my Institution, **J D College of Engineering and Management, NAGPUR** for providing an opportunity in fulfilling the most cherished desire for reaching my goal.

I express my immense gratitude to our Principal **Dr. S. V. Sonekar** for his support and encouragement for the completion of my project.

I extend the immense gratitude to the Head of the Department **Dr. Ujwala Dange** for her motivation, inspiration, and encouragement for the completion for my project.

The valuable and unflinching requital support in this Endeavor of**Dr.Parvin Shaikh**my guide, whose support & guidance was immeasurable to the completion of this project.

Last, but not the least, my heartfelt gratitude to my parents, relatives, my friends and all those luminaries and unseen hands without whose support the completion of this dissertation would not have been materialized.

Shirin Sheikh

Miss. SHIRIN NAZ MUSA SHEIKH

FINAL PROJECT REPORT

On

"*A Study on Work Demand, Role Ambiguity, Role Conflict & Work Life conflict among Faculty members during Covid pandemic in Nagpur city*"

Submitted by

Prallek Ganvir

Under the Guidance of

Dr. Anjali M. Chandak

(Reference No.1545/C/1008)

Submitted in partial fulfillment for the award of the degree

of

MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF MANAGEMENT STUDIES

Education to Eternity

J D COLLEGE OF ENGINEERING AND MANAGEMENT

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

NAGPUR

SESSION: 2020 - 2021

BONAFIDE CERTIFICATE

This is to certify that the project work, entitled "***A Study on Work Demand, Role Ambiguity, Role Conflict & Work Life conflict among Faculty members during Covid pandemic in Nagpur city***" is the bonafide work of **Prallek Ganvir** who carried out the same under my supervision. This project work is submitted to **Rashtrasant Tukadoji Maharaj Nagpur University** as partial fulfillment of requirement for the award of degree of Master of Business Administration.

DR. ANJALI CHANDAK
PROJECT GUIDE

DR. UJWALA DANGE
HOD – DEPARTMENT OF MANAGEMENT STUDIES

DR.S. V. SONEKAR
PRINCIPAL,
J D COLLEGE OF ENGINEERING AND MANAGEMENT, NAGPUR.

Principal
J D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

PLACE: NAGPUR

DECLARATION

I, the undersigned, hereby declare that the Project Report entitled "***A Study on Work Demand, Role Ambiguity, Role Conflict & Work Life conflict among Faculty members during Covid pandemic in Nagpur city***" is a bonafide and authentic work written and submitted by me to the **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in partial fulfillment of the requirements for the award of degree of Master of Business Administration under supervision of **Dr. Anjali Chandak**, the project is entirely original and not been submitted earlier to any university for the reward of any diploma or degree, nor the data have been derived for any project or University.

Place: NAGPUR

Date: **06-07-2021**

PRALLEK GANVIR

Signature

ACKNOWLEDGEMENT

I express my deep sense of gratitude to my Institution, **J D College of Engineering and Management, NAGPUR** for providing an opportunity in fulfilling the most cherished desire for reaching my goal.

I express my immense gratitude to our Principal **Dr. S. V. Sonekar** for his support and encouragement for the completion of my project.

I extend the immense gratitude to the Head of the Department **Dr. Ujwala Dange** for her motivation, inspiration, and encouragement for the completion for my project.

The valuable and unflinching requital support in this Endeavor of Dr. Anjali Chandak my guide, whose support &guidance was immeasurable to the completion of this project.

Last, but not the least, my heartfelt gratitude to my parents, relatives, my friends and all those luminaries and unseen hands without whose support the completion of this dissertation would not have been materialized.

FINAL PROJECT REPORT

On

"A STUDY ON SATISFACTION LEVEL OF EMPOYEES AT MICROSOFT"

Submitted by

Nomaan Ahmed

Under the Guidance of

Dr. Anjali M. Chandak

(Reference No. 1545/C/1008)

Submitted in partial fulfillment for the award of the degree of

MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF MANAGEMENT STUDIES

Education to Eternity

J D COLLEGE OF ENGINEERING AND MANAGEMENT

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

NAGPUR

SESSION: 2020 – 2021

BONAFIDE CERTIFICATE

This is to certify that the project work, entitled "A STUDY ON SATISFACTION LEVEL OF EMPOYEES AT MICROSOFT"is the bonafide work of **Nomaan Ahmed**who carried out the same under my supervision. This project work is submitted to **Rashtrasant Tukadoji Maharaj Nagpur University** as partial fulfillment of requirement for the award of degree of Master of Business Administration.

NAME OF FACULTY- Dr. Anjali Chordak
PROJECT GUIDE

DR. UJWALA DANGE
HOD – DEPARTMENT OF MANAGEMENT STUDIES

DR.S. V. SONEKAR
PRINCIPAL,
J D COLLEGE OF ENGINEERING AND MANAGEMENT, NAGPUR.

Principal
J D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

PLACE: NAGPUR
DATE:

DECLARATION

I, the undersigned, hereby declare that the Project Report entitled "A STUDY ON SATISFACTION LEVEL OF EMPOYEES AT MICROSOFT"is a bonafide and authentic work written and submitted by me to the **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in partial fulfillment of the requirements for the award of degree of Master of Business Administration under supervision of **Dr. Anjali Chandak**, the project is entirely original and not been submitted earlier to any university for the reward of any diploma or degree, nor the data have been derived for any project or University.

NOMAAN AHMED

Signature

Place: NAGPUR

Date:

ACKNOWLEDGEMENT

I express my deep sense of gratitude to my Institution, **J D College of Engineering and Management, NAGPUR** for providing an opportunity in fulfilling the most cherished desire for reaching my goal.

I express my immense gratitude to our Principal **Dr. S. V. Sonekar**for his support and encouragement for the completion of my project.

I extend the immense gratitude to the Head of the Department **Dr. UjwalaDange**for her motivation, inspiration, and encouragement for the completion for my project.

The valuable and unflinching requital support in this Endeavor of **Dr. Anjali Chandak**my guide, whose support & guidance was immeasurable to the completion of this project.

Last, but not the least, my heartfelt gratitude to my parents, relatives, my friends and all those luminaries and unseen hands without whose support the completion of this dissertation would not have been materialized.

FINAL PROJECT REPORT

On

"PROBLEM AND PROSPECT OF STOCK BROKING IN NAGPUR-A STUDY"

Submitted by
Miss. Aishwarya Diliprao Khedikar

Under the Guidance of
Dr. Swarnalata Philip

(1212/C/714)

Submitted in partial fulfillment for the award of the degree

Of

MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF MANAGEMENT STUDIES

Education to Eternity

J D COLLEGE OF ENGINEERING AND MANAGEMENT

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

NAGPUR

SESSION: 2020 - 2021

BONAFIDE CERTIFICATE

This is to certify that the project work, entitled "**Problem And Prospect Of Stock Broking In Nagpur- A Study**" is the bonafide work of **Aishwarya Diliprao Khedikar** who carried out the same under my supervision. This project work is submitted to **Rashtrasant Tukadoji Maharaj Nagpur University** as partial fulfillment of requirement for the award of degree of Master of Business Administration.

PROJECT GUIDE

DR.SWARNALATA PHILIP

DR. UJWALA DANGE

HOD – DEPARTMENT OF MANAGEMENT STUDIES

J.D. COLLEGE OF ENGINEERING & MANAGEMENT * NAGPUR *

DR. S. V. SONEKAR

PRINCIPAL,

J.D COLLEGE OF ENGINEERING AND MANAGEMENT, NAGPUR.

Principal
J D College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

PLACE: Nagpur.

DATE: 26/07/2021

DECLARATION

I, the undersigned, hereby declare that the Project Report entitled "**Problem And Prospect Of Stock Broking In Nagpur- A Study**" is a bonafide and authentic work written and submitted by me to the **Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in partial fulfillment of the requirements for the award of degree of Master of Business Administration under supervision of **Dr.Swarnalata Philip**, the project is entirely original and not been submitted earlier to any university for the reward of any diploma or degree, nor the data have been derived for any project or University.

Place: NAGPUR

Date: 26/07/2021

AISHWARYA DILIPRAO KHEDIKAR

Signature

Akhedikar

ACKNOWLEDGEMENT

I express my deep sense of gratitude to my Institution, **J D College of Engineering and Management, NAGPUR** for providing an opportunity in fulfilling the most cherished desire for reaching my goal.

I express my immense gratitude to our Principal **Dr. S. V. Sonekar** for his support and encouragement for the completion of my project.

I extend the immense gratitude to the Head of the Department **Dr. Ujwala Dange** for her motivation, inspiration, and encouragement for the completion for my project.

The valuable and unflinching requital support in this Endeavor of **Dr. Swarnalata Philip** my guide, whose support & guidance was immeasurable to the completion of this project.

Last, but not the least, my heartfelt gratitude to my parents, relatives, my friends and all those luminaries and unseen hands without whose support the completion of this dissertation would not have been materialized.

Aishwarya Diliprao Khedikar

Akhedikar

Field Project Report on
Lakshmi Agni Components & Forgings Pvt. Ltd.

Report submitted in partial fulfillment ofthe requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Second Year Students
Roll No-
1,2,3,4,5,6,7,8,9,10,11,12,13,14,
15,16,17,18,19,20,21,22,23,24,2
5,26,27,28,29,30,31,32,33,34,35,
36,37,38,39,40,41,42,43,44,45,
46,47,48,49,50,51

Education to Eternity

Mechanical Department

J D College of Engineering and Management, Nagpur-441501
An Autonomous Institute, with NAAC "A" Grade
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

Scanned with OKEN Scanner

DECLARATION

We hereby declare that the work presented in this field project report entitled, **"Lakshmi Agni Components & Forgings Pvt. Ltd."** in the subject **Mechanical** in the faculty of Science and Technology is the original contribution carried out by us. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 15/01/2021

R. N.	Name of student	Signature	R. N.	Name of student	Signature
01	ADITYA VINOD NAGRARE		27	RAJ RAHANGDALE	
02	ADITYA RAMESH AGARE		28	RITIK TEJRAO WANKHEDE	
03	AHANT SIDDHARTH AMBADE		29	RONIT BHANARKAR	
04	CHAITANYA DILIP GADPAYLE		30	RUSHIKESH MAHAJAN	
05	CHETAN DEVENDRA UIKEY		31	SAKSHAM GORE	
06	CHETAN SUNIL DONGARE		32	SANDIP BHAGAT	
07	DARSHAN MAROTI ARRAM		33	SANSKAR RAJU SHENDE	
08	DEEP TIKARAM MHASE		34	SHAKSHAM RODGE	
09	DEEPAK AMDE		35	SHREJAS SANJIV KARADE	
10	GOUS SARWARSAB MANIYAR		36	SHUBHAM MASKARE	
11	HARISH JAGDISH DHENGARE		37	SHUBHAM DONGRE	
12	HARSHAL SURESH HULKE		38	TEJAS GAJANAN SUKARE	
13	HIMANSHU WAKODIKAR		39	VAIBHAV TURALE	
14	JAYENDRA PRASAD NAIK		40	VEDANT NAKHATE	
15	KUNAL BHANARKAR		41	VEDPRAKASH KASHTE	
16	KUNAL PIMPALSHENDE		42	VAIBHAV DHUWARE	
17	LALIT SUDHAKAR MATE		43	SHEIKH AMAN SHEIKH	
18	MOHIT NANDANWAR		44	AKASH PUSHPTODE	
19	NILESH DHANRAJ KATRE		45	MRUDUL KHURPUDE	
20	NILESH NEMDAS GAJBHIYE		46	GAURAO SARDAR PUDKE	
21	NILESH RAM SAWARKAR		47	RIYA KHOBRAGADE	
22	PANKAJ GAJANAN FATING		48	PRASAD GAJBHIYE	
23	PRASHIK SURESH GAJBHIYE		49	MAHESH THAKARE	
24	PRATHMESH DHANASKAR		50	ROHIT BARVEKAR	
25	PRATIK SATISH GHANGARE		51	PRATIK CHARDE	
26	RAHUL DASHRATH GONARE				

Scanned with OKEN Scanner

CERTIFICATE

This is to certify that the Filed Project report entitled, **"Lakshmi Agni Components & Forgings Pvt. Ltd."** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by following students to **An Autonomous Institute Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

P. M. Gupta

Field Project Co-ordinator

Forwarded to:

B. R. Mahajan

Head of the Mechanical Department

Head of Department
Mechanical Engineering
College of Engineering & Management
Nagpur

Department of Mech. Engg.

Scanned with OKEN Scanner

Field Project Report on
Vishvakarma Fabrication Works, Nagpur

Report submitted in partial fulfillment ofthe requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Third Year Students
Roll No-
1,2,3,4,5,6,7,8,9,10,11,12,13,14,
15,16,17,18,19,20,21,22,23,24,2
5,26,27,28,29,30,31,32,33,34,35,
36,37,38,39,40,41,42,43,44,45,
46,47,48,49,50,51,52,53

Education to Eternity

Mechanical Department

J D College of Engineering and Management, Nagpur-441501
Dr. Babasaheb Ambedkar Technological University, Lonere

Year 2020-21

Scanned with OKEN Scanner

DECLARATION

We hereby declare that the work presented in this field project report entitled, **"Vishvakarma Fabrication Works, Nagpur"** in the subject **Mechanical** in the faculty of Science and Technology is the original contribution carried out by us. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 28/12/2025

R. N.	Name of student	Signature	R. N.	Name of student	Signature
01	Mayur Chintaman Kumbhare		28	Himanshu Vaijanath Shivpuje	
02	Prince Rameshwar Singh		29	Viraj Suryawanshi	
03	Rama Prasad S Daheriya		30	Saurabh Dharmraj Khopade	
04	Lokesh Prakash Meshram		31	Raj Umaji Sonkusare	
05	Pankaj Vilas Godbole		32	Pramod Harishchandra Ingle	
06	Nayan Sunil Pathrabe		33	Rajesh Rai	
07	Ashish Sudhakar Shende		34	Prasad Rajesh Nillawar	
08	Omkar Ajay Vyavahare		35	Shoeb Sheikh Sheikh	
09	Ankit Gurudev Barodkar		36	Rashtrapal C Humane	
10	Shraddha Kishor Wasnik		37	Ashish Yadav Chavan	
11	Harsh Sulas Meshram		38	Anshul Ravishakar Sahare	
12	Akanksha Keshav Bachale		39	Mayur Vijay Tale	
13	Jay Chandrabhan Gajbhiye		40	Gaurao Dalit Badge	
14	Sonukumar Kundlik Mandape		41	Dinesh Suresh Ghate	
15	Aman Rajesh Sahu		42	Grishal V Gaydhane	
16	Nikita Sanjay Mahajan		43	Suraj Rajkumar Meshram	
17	Deepanshu Pramod Gotiya		44	Suryadev Kamala Yadav	
18	Rahul Dayaram Dighore		45	Rohit Ratnakar Mahore	
19	Mayur Banduji Shelke		46	Ritik Vijay Gedam	
20	Shubham Satish Rayewar		47	Kshitij Dhanraj Nikhare	
21	Ameya Sanjay Thakre		48	Akshay G Munnarwar	
22	Vyankatesh P Kalbande		49	Vaibhav Devidas Shevale	
23	Nehal Indraraj Kachhotia		50	Naman Suresh Nag	
24	Vaibhav Ramesh Adwe		51	Roshan Mahagan Hatwar	
25	Shubham Baijnath Chawhan			Susobhan Maity	
26	Sanket Pramod Bandawar			Sakshi Balkrushna Ingole	
27	Jatin Naonath Padhen				

Scanned with OKEN Scanner

CERTIFICATE

This is to certify that the Filed Project report entitled, **"Vishvakarma Fabrication Works, Nagpur"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by following students to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Field Project Co-ordinator

Forwarded to:

B.R. Mahajan

Head of the Mechanical Department

Head of Department
Mechanical Engineering
College of Engineering & Management

Department of Mech. Engg.
JDCOEM

Scanned with OKEN Scanner

INFLUENCE OF STEERING MECHANISM ON THE PERFORMANCE OF E-KART

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Yash U. Dhakate

Sonuttar B. Ramteke

Piyush D. Kulmethe

Shrikant R. Meshram

Samir P. Mendhe

Suraj A. Ghotkar

Pritam D. Kale

Under the Guidance of

Prof. Rahul Deshmukh

Education to Eternity

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Influence of Steering Mechanism on the Performance of E-Kart"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Rahul Deshmukh, Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma, or certificate course.

Place: Nagpur
Date: 23/11/2021

Name of Students
Yash U. Dhakate
Shrikant R. Meshram
Sonuttar B. Ramteke
Samir P. Mendhe
Piyush D. Kulmethe
Suraj A. Ghotkar
Pritam D. Kale

CERTIFICATE

This is to certify that the project report entitled, **"Influence of Steering Mechanism on the Performance of E-Kart"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Yash U. Dhakate, Shrikant R. Meshram, Sonuttar B. Ramteke, Samir P. Mendhe, Piyush D. Kulmethe, Suraj A. Ghotkar, Pritam D. Kale** to **Dr. Babasaheb Ambedkar Technological University, Lonere,** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in whole or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Rahul Deshmukh)
Mechanical Engineering

Forwarded to:

(Prof. Rahul Deshmukh)
Project Coordinator

(Dr. Bhushan Mahajan)
Head of the Department
Mechanical Engineering

(Dr S. V. Sonekar)
Principal

Principal
J.D. College of Engineering & Management

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **INFLUENCE OF STEERING MECHANISM ON THE PERFORMANCE OF E-KART** is approved work done by

Yash U. Dhakate
Sonuttar B. Ramteke
Piyush D. Kulmethe
Shrikant R. Meshram
Samir P. Mendhe
Suraj A. Ghotkar
Pritam D. Kale

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere,** during the academic year 2020-2021.

Prof. Rahul Deshmukh
Guide

Dr. Bhushan Mahajan
Head of the Department

Project Examination held on 29/06/2021

Internal Examiner/ Guide

External Examiner

"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Mr. Himanshu N. Bhisikar **Mr. Chirayu B. Misal**

Mr. Shubham A. Digrase **Mr. Pranay V. Bhosale**

Mr. Pavan G. Sorte **Mr.Yogesh Y. Gore**

Under the Guidance of

Prof. Rahul Deshmukh

Education to Eternity

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Rahul Deshmukh, Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 07/08/21

Mr. Himanshu N. Bhisikar
Mr. Chirayu B. Misal
Mr. Shubham A. Digrase
Mr. Pranay V. Bhosale
Mr. Pavan G. Sorte
Mr. Yogesh Y. Gore

CERTIFICATE

This is to certify that the project report entitled, **"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by

Mr. Himanshu N. Bhisikar

Mr. Chirayu B. Misal

Mr. Shubham A. Digrase

Mr. Pranay V. Bhosale

Mr. Pavan G. Sorte

Mr. Yogesh Y. Gore

to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

(Prof. Rahul Deshmukh)
Project Coordinator

(Prof. Rahul Deshmukh)
Mechanical Engineering Department

(Dr. B. R. Mahajan)
Head of the Department
Mechanical Engineering Department

(Dr. S. V. Sonekar)
Principal,
JDCOEM, Nagpur

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"** is approved work done by

Mr. Himanshu N. Bhisikar

Mr. Chirayu B. Misal

Mr. Shubham A. Digrase

Mr. Pranay V. Bhosale

Mr. Pavan G. Sorte

Mr. Yogesh Y. Gore

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Rahul Deshmukh
Guide

Dr. Bhushan Mahajan
Head of the Department

07/08/21

Project Examination held on _____

Internal Examiner/ Guide

External Examiner

INVESTIGATION OF JOINING OF DUCTILE CAST IRON BY USING SMAW

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Gulshan M. Shahare **Usha M. Bharadkar**

Rushikesh Y. Bhanarkar **Atul R. Ramteke**

Durgesh R. Dhande **Nitin N. Nawkhare**

Under the Guidance of

Prof. Aamir R. Sayed

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University of Maharastra.

Year 2020-21

INVESTIGATION OF JOINING OF DUCTILE CAST IRON BY USING SMAW

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Gulshan M. Shahare **Usha M. Bharadkar**

Rushikesh Y. Bhanarkar **Atul R. Ramteke**

Durgesh R. Dhande **Nitin N. Nawkhare**

Under the Guidance of

Prof. Aamir R. Sayed

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University of Maharastra.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"INVESTIGATION OF JOINING OF DUCTILE CAST IRON BY USING SMAW"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Aamir R. Sayed Department of Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 27-01-2022

Name of Student/Students
Gulshan M. Shahare
Usha M. Bharadkar
Rushikesh Y. Bhanarkar
Atul R. Ramteke
Durgesh R. Dhande
Nitin N. Nawkhare

CERTIFICATE

This is to certify that the project report entitled, **"INVESTIGATION OF JOINING OF DUCTILE CAST IRON BY USING SMAW"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Gulshan M. Shahare, Usha M. Bharadkar, Rushikesh Y. Bhararkar, Atul R. Ramteke, Durgesh R. Dhande, Nitin N. Nawkhare** to **Dr. Babasaheb Ambedkar Technological University of Maharastra** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Aamir R. Sayed
Department of Mechanical Engineering

Forwarded to:

Prof. Rahul Deshmukh
Project Coordinator

Dr. Bhushan Mahajan
Head of the Department
Department of Mechanical Engineering

Department of Mech. Engg.
JDCOEM

Dr. S. V. Sonekar
Principal
Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

NAGPUR ★ J.D. COLL

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"INVESTIGATION OF JOINING OF DUCTILE CAST IRON BY USING SMAW"** is approved work done by

Name of the Students

Gulshan M. Shahare
Usha M. Bharadkar
Rushikesh Y. Bhanarkar
Atul R. Ramteke
Durgesh R. Dhande
Nitin N. Nawkhare

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University of Maharastra** during the academic year 2020-2021.

Prof. Aamir R. Sayed
Guide

Dr. Bhushan Mahajan
Head of the Department

Project Examination held on 29-06-2021

Internal Examiner/ Guide

External Examiner

'ENERGY AUDIT OF JD COLLEGE OF ENGINEERING'

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering In**

"MECHANICAL ENGINEERING"

Submitted By: -

VIPUL MESHRAM **ISHRAR SHEIKH**

HARSHAL MASTE **AKASH KOKANE**

NIKITA RAMTEKE

Under the Guidance of: -

DR. B. MAHAJAN
(Head Of Department)

Education to Eternity

DEPARTMENT OF MECHANICAL ENGINEERING

JD COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR - 441501
(Affiliated to Dr. Babasaheb Ambedkar Technological University, Nagpur)

Year 2020 – 2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Energy Audit of J.D. College of Engineering"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **DR. B. Mahajan**, Mechanical Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 16/11/21

Name of Students: -

Vipul Meshram

Nikita Ramteke

Ishrar Sheikh

Harshal Maste

Akash Kokane

CERTIFICATE

This is to certify that the project report entitled, **"Energy Audit of J.D. College of Engineering"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Vipul Meshram, Ishrar Ahmed Sheikh, Harshal Maste, Akash Kokane, Nikita Ramteke** to **Dr. Babasaheb Ambedkar Technological University, Nagpur** for the award of the degree of **Bachelor of Engineering** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Dr. Bhushan Mahajan
(Mechanical Engineering)

Forwarded to:

Prof. Rahul Deshmukh
(Project Coordinator)

Dr. Bhushan Mahajan
Head of the Department
(Mechanical Engineering)

Dr. S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"ENERGY AUDIT OF JD COLLEGE OF ENGINEERING"** is approved work done by

VIPUL MESHRAM **ISHRAR SHEIKH**

HARSHAL MASTE **AKASH KOKANE**

NIKITA RAMTEKE

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering** in **MECHANICAL ENGINEERING** at J D College of Engineering & Management, Nagpur affiliated to **DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, Nagpur** during the academic year 2020 - 2021.

DR. B. MAHAJAN
(Guide)

DR. B. MAHAJAN
(Head Of Department)

Project Examination held on 28/06/21

Internal Examiner/ Guide

External Examiner

DESIGN & FABRICATION OF TANDEM DRIVE HUMAN POWER FLYWHEEL MOTOR FOR APPLICATION OF WATER PURIFICATION

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Sushant B. Nandeshwar **Ashirwad D. Goutam** **Tejash G. Bharne**

Manthan P. Hadke **Harbal P. Urakude** **Apeksha V. Utane**

Under the Guidance of

Prof. Hemant K. Baitule

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University,Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Fabrication of Tandem Drive Human Power Flywheel Motor For Application of Water Purification"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Hemant K. Baitule**, Department of Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: **Nagpur**

Date: **23/09/2021**

Name of Students

Sushant Nandeshwar

Ashirwad Goutam

Tejash Bharne

Manthan Hadke

Harbal Urakude

Apeksha Utane

CERTIFICATE

This is to certify that the project report entitled, **"Design And Fabrication of Tandem Drive Human Power Flywheel Motor For Application of Water Purification"** in the subject **Department of Mechanical Engineering** in the faculty of Science and Technology submitted by **Sushant Nandeshwar, Ashirwad Goutam, Tejash Bharne, Manthan Hadke, Harbal Urakude, Apeksha Utane** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Hemant K. Baitule
Department of Mechanical Engineering
Assistant Professor
J. D. College of Engg.,
& M[illegible]t, Nagpur

Forwarded to:

Prof. Rahul G. Deshmukh
Project Coordinator

Dr. Bhushan R. Mahajan
Head of the Department
Department of Mechanical Engineering

Head of Department
Mechanical Engineering
J.D. College of Engineering & Management
Nagpur

Dr. S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on "**Design and Fabrication of Tandem Drive Human Power Flywheel Motor For Application of Water Purification**" approved work done by **Sushant Nandeshwar, Ashirwad Goutam, Tejash Bharne, Manthan Hadke, Harbal Urakude, Apeksha Utane** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Hemant K. Baitule
Guide

Dr. Bhushan R. Mahajan
Head of the Department

Project Examination held on 28-06-2021

Prof. Hemant K. Baitule
Internal Examiner/ Guide

Prof. Amir R. Sayyad
External Examiner

DEVELOPMENT OF SOLAR STILL FOR DISTILLATION OF DOMESTIC WASTE WATER

A thesis submitted in partial fulfillment of the requirementsfor the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

PRADIP S. MANDAL

NAZIM SHEIKH

PRACHI A. BUCHUNDE

ABHISHEK S. KAGDELWAR

PRANJAL A. RAUT

Under the Guidance of

Prof. SHYAMAL CHAKRABARTY

Education to Eternity

MECHANICAL

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DEVELOPMENT OF SOLAR STILL FOR DISTILLATION OF DOMESTIC WASTE WATER

A thesis submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

PRADIP S. MANDAL

NAZIM SHEIKH

PRACHI A. BUCHUNDE

ABHISHEK S. KAGDELWAR

PRANJAL A. RAUT

Under the Guidance of

Prof. SHYAMAL CHAKRABARTY

Education to Eternity

MECHANICAL

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Development of solar still for distillation of domestic waste water"** in the subject **Mechanical** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Shyamal Chakrabarty**, Mechanical Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 21/01/21

Name of Students

Pradip S. Mandal

Nazim Sheikh

Prachi A. Buchunde

Abhishek S. Kagdelwar

Pranjal A. Raut

CERTIFICATE

This is to certify that the project report entitled, **"Development of solar still for distillation of domestic waste water"** in the subject **Mechanical** in the faculty of Science and Technology submitted by **Pradip S. Mandal, Nazim Sheikh, Prachi A. Buchunde, Abhishek S. Kagdelwar, Pranjal A. Raut** to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology is** a bona fide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Shyamal Chakrabarty
Department of Mechanical Engineering

Forwarded to:

Prof. Rahul Deshmukh
Project Coordinator

Dr. Bhushan Mahajan
Head of the Department
Mechanical Department

Dr. Srikant. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **DEVELOPMENT OF SOLAR STILL FOR DISTILLATION OF DOMESTIC WASTE WATER** is approved work done by

PRADIP S. MANDAL
NAZIM SHEIKH
PRACHI A. BUCHUNDE
ABHISHEK S. KAGDELWAR
PRANJAL A. RAUT

In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical** at J D College of Engineering & Management, Nagpur affiliated to **Dr Babasaheb Ambedkar Technological` University, Lonere** during the academic year 2020-2021

Prof. Shyamal Chakrabarty
Guide

Dr. Bhushan Mahajan
Head of Department

Project Examination held on 21/01/21

Internal Examiner/ Guide

Prof. Dharmesh Agrawal
External Examiner

PRODUCTION OF BIODIESEL FROM USED COOKING AND JATROPHA OIL AND COMPARISON REVIEW BETWEEN PROPERTIES

for the award of the degree of

Bachelor of Technology

In

Specialization

Mechanical Engineering

Submitted by

1. Ms. Aayushi Vyas

2. Ms. Tanmayee Mudpalliwar

3. Ms. Ritika Sangode

4. Mr. Sahil Sulakhe

5. Mr. Rahul Bisen

6. Mr. Ninad Nandgave

Under the Guidance of

Prof. Dinesh Yelure

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"PRODUCTION OF BIODIESEL FROM USED COOKING AND JATROPHA OIL AND COMPARISON REVIEW BETWEEN PROPERTIES"** in the subject **Mechanical** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Dinesh Yelure ,** Mechanical, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 22/12/21

Name of Students

1. Aayushi Vyas
2. Tanmayee Mudpalliwar
3. Ritika Sangode
4. Sahil Sulakhe
5. Rahul Bisen
6. Ninad Nandgave

CERTIFICATE

This is to certify that the project report entitled, **"PRODUCTION OF BIODIESEL FROM USED COOKIN AND JATROPHA OIL AND COMPARISON REVIEW BETWEEN PROPERTIES"** in the subject **Mechanical** in the faculty of Science and Technology submitted by **Aayushi Vyas, Tanmayee Mudpalliwar, Ritika Sangode, Sahil Sulakhe, Rahul Bisen, Ninad Nandgave** to **Dr. Babasaheb Ambedkar Technological University, Lonere.** for the award of the degree of **Bachelor of Technology** is a Bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Dinesh Yelure
22/12/21

Prof. Dinesh Yelure
Department of Mechanical Engineering

Forwarded to:

Prof.Rahul Deshmukh
Project Coordinator

Prof. B. R. Mahajan
Head of the Department
Department of Mechanical Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT NAGPUR

Dr. S. V. Sonekar
Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"PRODUCTION OF BIODIESEL FROM USED COOKIN AND JATROPHA OIL AND COMPARISON REVIEW BETWEEN PROPERTIES"** is approved work done by

Name of the Students

1. **Ms. Aayushi Vyas**
2. **Ms. Tanmayee Mudpalliwar**
3. **Ms. Ritika Sangode**
5. **Mr. Sahil Sulakhe**
6. **Mr. Rahul Bisen**
7. **Mr. Ninad Nandgave**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Dinesh Yelure
Guide

Dr. B. R Mahajan
Head of the Department

Project Examination held on 19/09/2021

Internal Examiner/ Guide

External Examiner

DESING & DEVOLOPMENT OF FERTIROBOTICS : AN AUTOMATED ROBOT FOR FERTILIZATION OF COTTON CROP

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Vastav P. Bhagat **Chandrakant K. Wanve**

Nayan S. Wanjari **Rahul D. Raut**

Kamlesh D. Singade **Roshan N. Sable**

Under the Guidance of

Prof. Suhas A. Rewatkar

Education to Eternity

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DESING & DEVOLOPMENT OF FERTIROBOTICS : AN AUTOMATED ROBOT FOR FERTILIZATION OF COTTON CROP

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Vastav P. Bhagat **Chandrakant K. Wanve**

Nayan S. Wanjari **Rahul D. Raut**

Kamlesh D. Singade **Roshan N. Sable**

Under the Guidance of

Prof. Suhas A. Rewatkar

Education to Eternity

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Design and Development of Fertirobotix: An Automated Robot for Fertilization of Cotton Crop"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Suhas A. Rewatkar**, Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma, or certificate course.

Place: 15/12/2021
Date: Nagpur

Name of Student/Students

Vastav Bhagat

Chandrakant Wanve

Nayan Wanjari

Rahul Raut

Kamlesh Singade

Roshan Sable

CERTIFICATE

This is to certify that the project report entitled, **"Design and Development of Fertirobotix : An Automated Robot for Fertilization of Cotton Crop"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Vastav Bhagat, Chandrakant Wanve, Nayan Wanjari, Rahul Raut, Kamlesh Singade, Roshan Sable** to **Dr. Babasaheb Ambedkar Technological University, Lonere.** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in whole or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Suhas A. Rewatkar
Mechanical Engineering

Forwarded to:

Prof. Rahul G. Deshmukh
Project Coordinator

Dr. Bhushan R. Mahajan
Head of the Department
Mechanical Engineering

Dr S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **"Design and Development of Fertirobotix: An Automated Robot for Fertilization of Cotton Crop"** is approved work done by **Vastav Bhagat, Chandrakant Wanve, Nayan Wanjari, Rahul Raut, Kamlesh Singade, Roshan Sable** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Raigad** during the academic year 2020-2021.

Prof. Suhas A. Rewatkar
Guide

Dr. Bhushan R. Mahajan
Head of the Department

Project Examination held on 19/06/2021

Prof. Suhas A. Rewatkar
Internal Examiner/ Guide

Prof. R. B. Sharma
External Examiner

IoT Enabled Optimization & Evaluation of Multi-point Fertilization Technique

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Saurabh J. Harde **Aditya D. Motghare** **Sarwesh Y. Thaware**

Ashwin D. Meshram **Pankaj G. Ingle** **Manish A. Jichkar**

Under the Guidance of

Prof. Nikhil V. Bhende

Education to Eternity

Department Of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Raigad.

IoT Enabled Optimization & Evaluation of Multi-point Fertilization Technique

A Project Report submitted in partial fulfillment of the requirements
for the award of the degree of
Bachelor of Technology

In

Mechanical Engineering

Submitted by

Saurabh J. Harde **Aditya D. Motghare** **Sarwesh Y. Thaware**

Ashwin D. Meshram **Pankaj G. Ingle** **Manish A. Jichkar**

Under the Guidance of

Prof. Nikhil V. Bhende

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Raigad.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"IoT Enabled Optimization & Evaluation of Multi-point Fertilization Technique"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Nikhil V. Bhende, Name of Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 20/12/2021

Name of Students

Saurabh J. Harde

Aditya D. Motghare

Sarwesh Y. Thaware

Ashwin D. Meshram

Pankaj G. Ingle

Manish A. Jichkar

CERTIFICATE

This is to certify that the project report entitled, **"IoT Enabled Optimization & Evaluation of Multi-point Fertilization Technique"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Saurabh J. Harde, Aditya D. Motghare, Sarwesh Y. Thaware, Ashwin D. Meshram, Pankaj G. Ingle, Manish A. Jichkar** to **Dr. Babasaheb Ambedkar Technological University, Raigad** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Nikhil V. Bhende
Department of Mechanical Engineering

Forwarded to:

Prof. Rahul G. Deshmukh
Project Coordinator

Dr. Bhushan R. Mahajan
Head of the Department
Department of Mechanical Engineering

Dr. S. V. Sonekar
Principal
Principal
J.D. College of Engineering & Management
Khandala, Katol Road,
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **IOT ENABLED OPTIMIZATION & EVALUATION OF MULTI-POINT FERTILIZATION TECHNIQUE** is approved work done by

Saurabh J. Harde
Aditya D. Motghare
Sarwesh Y. Thaware
Ashwin D. Meshram
Pankaj G. Ingle
Manish A. Jichkar

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Raigad** during the academic year 2020-2021.

Prof. Nikhil V. Bhende
Guide

Dr. Bhushan R. Mahajan
Head of the Department

Project Examination held on 19/09/2020

Internal Examiner/ Guide

External Examiner

"STUDY & ANALYSIS OF TYRE WEAR CHARACTERISTICS OF TATA LPO 1618"

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Mr. Anmol Inudrkar

Mr. Palash Chimurkar

Mr. Sandip Patle

Mr. Suraj Kumar Nagina

Mr. Swapnil Tirpude

Mr. Ujwal Bawane

Under the Guidance of

Prof. Gaurav Gohane

Education to Eternity

Mechanical Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Nagpur.

Year 2020-2021

"STUDY & ANALYSIS OF TYRE WEAR CHARACTERISTICS OF TATA LPO 1618"

A Project Report submitted in partial fulfillment of the requirements

For the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Mr. Anmol Inudrkar

Mr. Palash Chimurkar

Mr. Sandip Patle

Mr. Suraj Kumar Nagina

Mr. Swapnil Tirpude

Mr. Ujwal Bawane

Under the Guidance of

Prof. Gaurav Gohane

Education to Eternity

Mechanical Engineering Department

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Nagpur.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Study and Analysis of Tire Wear of TATA LPO 1618"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of **Prof. Gaurav Gohane**, Mechanical Department, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 29/09/21

Mr. Anmol Indurkar

Mr. Palash Chimurkar

Mr. Sandeep Patle

Mr. Suraj Kumar Nagina

Mr. Swapnil Tirpude

Mr. Ujwal Bawane

CERTIFICATE

This is to certify that the project report entitled, **"Study and Analysis of Tire Wear of TATA LPO 1618"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by Dr. **Babasaheb Ambedkar Technological University, Nagpur** for the award of the degree of **Bachelor in Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

Prof. R. G. Deshmukh
Project Coordinator

(Prof. Gaurav Gohane)
Mechanical Engineering
Department

(Dr. B. R. Mahajan)
Head of the Department
JDCOEM

(Dr. S. V. Sonekar)
Principal,
Mechanical Engineering Department

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on "**Study and Analysis of Tire Wear of TATA LPO 1618**" is approved work done by

Mr. Anmol Indurkar
Mr. Palash Chimurkar
Mr. Sandeep Patle
Mr. Suraj Kumar Nagina
Mr. Swapnil Tirpude
Mr. Ujwal Bawane

In partial fulfillment of the requirements for the award of the degree of **Bachelor in Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Nagpur** during the academic year 2020-2021.

Prof. Gaurav Gohane
Project Guide

Dr. Bhushan Mahajan
Head of the Department

Project Examination held on 21/09/21

Internal Examiner/ Guide

External Examiner

Department of Mech. Engg.

Study and review of Quality 4.0 in the industry

A Project Report submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

1. **Atul Bulkunde**
2. **Vikas Mendhe**
3. **Anish Parate**
4. **Hrithik Yadav**
5. **Prabhat Nagdeve**
6. **Shivam Pandey**

Under the Guidance of

Prof. Gaurav Gohane

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere.**

Year- 2020-21

Study and review of Quality 4.0 in the industry

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

1. Atul Bulkunde
2. Vikas Mendhe
3. Anish Parate
4. Hrithik Yadav
5. Prabhat Nagdeve
6. Shivam Pandey

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Prof. Gaurav Gohane

Education to Eternity

Department of Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere.**

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Study and review of Quality 4.0 in the industry"** in the subject **Mechanical** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. **Gaurav Gohane**, Mechanical D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur

Date: 29/03/22

Name of Students

1. Atul Bulkunde
2. Vikas Mendhe
3. Anish Parate
4. Hrithik Yadav
5. Prabhat Nagdeve
6. Shivam Pandey

CERTIFICATE

This is to certify that the project report entitled, **"Study and review of Quality 4.0 in the industry"** in the subject **Mechanical** in the faculty of Science and Technology submitted by **Atul Bulkunde,Vikas Mendhe, Anish Parate, Hrithik Yadav, Prabhat Nagdeve, Shivam Pandey** to **Dr. Babasaheb Ambedkar Technological University, Lonere**, for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Prof. Gaurav Gohane
Department of Mechanical Engineering

Forwarded to:

Prof.Rahul Deshmukh
Project Coordinator

Prof. B. R. Mahajan
Head of the Department
Department of Mechanical Engineering

J.D. COLLEGE OF ENGINEERING & MANAGEMENT ★ NAGPUR ★

Dr. S. V. Sonekar
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **Study and review of Quality 4.0 in the industry** is approved work done by

Name of the Students

1. **Atul Bulkunde**
2. **Anish Parate**
3. **Prabhat Nagdeve**
4. **Vikas Mendhe**
5. **Hrithik Yadav**
6. **Shivam Pandey**

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Name of Branch** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Gaurav Gohane
Guide

Prof. B. R. Mahajan
Head of the Department

Project Examination held on 28/06/2021

Internal Examiner/ Guide

External Examiner

INFLUENCE OF STEERING MECHANISM ON THE PERFORMANCE OF E-KART

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Yash U. Dhakate

Sonuttar B. Ramteke

Piyush D. Kulmethe

Shrikant R. Meshram

Samir P. Mendhe

Suraj A. Ghotkar

Pritam D. Kale

Under the Guidance of

Prof. Rahul Deshmukh

Education to Eternity

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-2021

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Influence of Steering Mechanism on the Performance of E-Kart"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Rahul Deshmukh, Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma, or certificate course.

Place: Nagpur
Date: 23/11/2021

Name of Students
Yash U. Dhakate
Shrikant R. Meshram
Sonuttar B. Ramteke
Samir P. Mendhe
Piyush D. Kulmethe
Suraj A. Ghotkar
Pritam D. Kale

CERTIFICATE

This is to certify that the project report entitled, **"Influence of Steering Mechanism on the Performance of E-Kart"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by **Yash U. Dhakate, Shrikant R. Meshram, Sonuttar B. Ramteke, Samir P. Mendhe, Piyush D. Kulmethe, Suraj A. Ghotkar, Pritam D. Kale** to **Dr. Babasaheb Ambedkar Technological University, Lonere,** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in whole or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

(Prof. Rahul Deshmukh)
Mechanical Engineering

Forwarded to:

(Prof. Rahul Deshmukh)
Project Coordinator

(Dr. Bhushan Mahajan)
Head of the Department
Mechanical Engineering

(Dr S. V. Sonekar)
Principal

Principal
J.D. College of Engineering & Management
Khandala, Katol Road
Nagpur-441501

CERTIFICATE OF APPROVAL

This is to certify that the Project Report on **INFLUENCE OF STEERING MECHANISM ON THE PERFORMANCE OF E-KART** is approved work done by

Yash U. Dhakate
Sonuttar B. Ramteke
Piyush D. Kulmethe
Shrikant R. Meshram
Samir P. Mendhe
Suraj A. Ghotkar
Pritam D. Kale

in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere,** during the academic year 2020-2021.

Prof. Rahul Deshmukh
Guide

Dr. Bhushan Mahajan
Head of the Department

Project Examination held on 29/06/2021

Internal Examiner/ Guide

External Examiner

"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"

A Project Report submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology

In

Mechanical Engineering

Submitted by

Mr. Himanshu N. Bhisikar **Mr. Chirayu B. Misal**

Mr. Shubham A. Digrase **Mr. Pranay V. Bhosale**

Mr. Pavan G. Sorte **Mr.Yogesh Y. Gore**

Under the Guidance of

Prof. Rahul Deshmukh

Mechanical Engineering

J D College of Engineering and Management, Nagpur-441501

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere.

Year 2020-21

DECLARATION

We hereby declare that the work presented in this project report entitled, **"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"** in the subject **Mechanical Engineering** in the faculty of Science and Technology is the original contribution carried out by us under the guidance of Prof. Rahul Deshmukh, Mechanical Engineering, J D College of Engineering and Management, Nagpur. This work has not been submitted to any other University or Institution for the award of any degree or diploma or certificate course.

Place: Nagpur
Date: 26/11/21

Mr. Himanshu N. Bhisikar
Mr. Chirayu B. Misal
Mr. Shubham A. Digrase
Mr. Pranay V. Bhosale
Mr. Pavan G. Sorte
Mr. Yogesh Y. Gore

This is to certify that the project report entitled, **"Experimental Investigation of Influence of Magnetic Field on VCRs Cycle"** in the subject **Mechanical Engineering** in the faculty of Science and Technology submitted by

Mr. Himanshu N. Bhisikar

Mr. Chirayu B. Misal

Mr. Shubham A. Digrase

Mr. Pranay V. Bhosale

Mr. Pavan G. Sorte

Mr. Yogesh Y. Gore

to **Dr. Babasaheb Ambedkar Technological University, Lonere** for the award of the degree of **Bachelor of Technology** is a bonafide record of work carried out by them under my supervision. The contents of this Project Report, in full or in parts, have not been submitted or published to any other Institute or University for the award of any degree or diploma.

Forwarded to:

(Prof. Rahul Deshmukh)
Project Coordinator

(Prof. Rahul Deshmukh)
Mechanical Engineering Department

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Principal,
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Khandala, Katol Road
Nagpur-441501

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In partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Mechanical Engineering** at J D College of Engineering & Management, Nagpur affiliated to **Dr. Babasaheb Ambedkar Technological University, Lonere** during the academic year 2020-2021.

Prof. Rahul Deshmukh
Guide

Dr. Bhushan Mahajan
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Project Examination held on 26/09/21

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External Examiner

Department of Mech. Engg. JNCOEM

J D College of Engineering & Management Nagpur
Mechanical Engineering