1.3.2 Percentage of Students undertaking project work/field work/internships

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List of students undertaken project work/field work/internship during academic year 2021-22

S.No.	Name of students	Branch	Year/ Semester	Project Work/ Field Work/ Internship
1.	Md. Amin Parvez	Civil Engineering	4th Yr/ 8th Sem	Project Work
2.	Nidhi Sharma	Civil Engineering	4th Yr/ 8th Sem	Project Work
3.	Prashant Joshi	Civil Engineering	4th Yr/ 8th Sem	Project Work
4.	Rahul Borkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
5.	Atif Zaheer	Civil Engineering	4th Yr/ 8th Sem	Project Work
6.	Meraj Ali	Civil Engineering	4th Yr/ 8th Sem	Project Work
7.	Kanta Sahu	Civil Engineering	4th Yr/ 8th Sem	Project Work
8.	Harish Lilhare	Civil Engineering	4th Yr/ 8th Sem	Project Work
9.	Kartik Gaurkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
10.	Sharafraj Khan Hakue	Civil Engineering	4th Yr/ 8th Sem	Project Work
11.	Mrunal Kelkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
12.	Ankit Khadse	Civil Engineering	4th Yr/ 8th Sem	Project Work
13.	Sweety Meshram	Civil Engineering	4th Yr/ 8th Sem	Project Work
14.	Nikhil Ramteke	Civil Engineering	4th Yr/ 8th Sem	Project Work
15.	Shubhangi Sakhare	Civil Engineering	4th Yr/ 8th Sem	Project Work
16.	Shivajee Singh	Civil Engineering	4th Yr/ 8th Sem	Project Work
17.	Harshali Umredkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
18.	Akash Charde	Civil Engineering	4th Yr/ 8th Sem	Project Work
19.	Rohit Pimpalkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
20.	Saurav Ponikar	Civil Engineering	4th Yr/ 8th Sem	Project Work
21.	Shubham Kelzarkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
22.	Vishal Gharat	Civil Engineering	4th Yr/ 8th Sem	Project Work
23.	Ajay Nageshwar	Civil Engineering	4th Yr/ 8th Sem	Project Work
24.	Ajay Vitalkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
25.	Suresh Meshram	Civil Engineering	4th Yr/ 8th Sem	Project Work
26.	Tanveer Hussain	Civil Engineering	4th Yr/ 8th Sem	Project Work
27.	Swadeep Shambharkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
28.	Shaharukalli Saiyyad	Civil Engineering	4th Yr/ 8th Sem	Project Work
29.	Ashish Khadilkar	Civil Engineering	4th Yr/ 8th Sem	Project Work
30.	Priti Tayade	Civil Engineering	4th Yr/ 8th Sem	Project Work
31.	Shivkumar Netrogoankar	Civil Engineering	4th Yr/ 8th Sem	Project Work
32.	Akshay Khokle	Civil Engineering	4th Yr/ 8th Sem	Project Work
33.	Ranjeet Yesankar	Civil Engineering	4th Yr/ 8th Sem	Project Work
34.	Navin Gaikawad	Civil Engineering	4th Yr/ 8th Sem	Project Work
35.	Anjali Dilip Ukey	Civil Engineering	3rd Yr/ 6th Sem	Internship
36.	Darshana Bhashkar Dautpure	Civil Engineering	3rd Yr/ 6th Sem	Internship

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37.	Harshalata Bhagwat Pustode	Civil Engineering	3rd Yr/ 6th Sem	Internship
38.	Karishma Ashokrao Kohale	Civil Engineering	3rd Yr/ 6th Sem	Internship
39.	Komal Santosh Ingle	Civil Engineering	3rd Yr/ 6th Sem	Internship
40.	Mayuri Bawankar	Civil Engineering	3rd Yr/ 6th Sem	Internship
41.	Nisha Vijay Pakmode	Civil Engineering	3rd Yr/ 6th Sem	Internship
42.	Pratiksha Wanjari	Civil Engineering	3rd Yr/ 6th Sem	Internship
43.	Smruti Kisan Turankar	Civil Engineering	3rd Yr/ 6th Sem	Internship
44.	Sonal Bhojraj Lanje	Civil Engineering	3rd Yr/ 6th Sem	Internship
45.	Supriya Damodar Nikule	Civil Engineering	3rd Yr/ 6th Sem	Internship
46.	Vaishnavi Diliprao Dahake	Civil Engineering	3rd Yr/ 6th Sem	Internship
47.	Yogita Vijay Bhandarkar	Civil Engineering	3rd Yr/ 6th Sem	Internship
48.	Akshay Pramod Bhagwat	Civil Engineering	3rd Yr/ 6th Sem	Internship
49.	Amar Nareshrao Mude	Civil Engineering	3rd Yr/ 6th Sem	Internship
50.	Amin Taimur Sheikh	Civil Engineering	3rd Yr/ 6th Sem	Internship
51.	Ankit Sharadrao Tembhekar	Civil Engineering	3rd Yr/ 6th Sem	Internship
52.	Ankush Rajesh Jaiswal	Civil Engineering	3rd Yr/ 6th Sem	Internship
53.	Bablu Nilkanth Goradwar	Civil Engineering	3rd Yr/ 6th Sem	Internship
54.	Badalkumar Ruprao Dongare	Civil Engineering	3rd Yr/ 6th Sem	Internship
55.	Devanand Digambar Hingole	Civil Engineering	3rd Yr/ 6th Sem	Internship
56.	Devanshu Vikas Ghodam	Civil Engineering	3rd Yr/ 6th Sem	Internship
57.	Gagan Ramesh Dahikar	Civil Engineering	3rd Yr/ 6th Sem	Internship
58.	Himanshu Rajendra Nawkhare	Civil Engineering	3rd Yr/ 6th Sem	Internship
59.	Hrutik Tirupati Nalguntha	Civil Engineering	3rd Yr/ 6th Sem	Internship
60.	Imran Irshad Khan	Civil Engineering	3rd Yr/ 6th Sem	Internship
61.	Kanai Narayan Sarkar	Civil Engineering	3rd Yr/ 6th Sem	Internship
62.	Kapil Bhagwan Shamkule	Civil Engineering	3rd Yr/ 6th Sem	Internship
63.	Kartik Murlidhar Sakharwade	Civil Engineering	3rd Yr/ 6th Sem	Internship
64.	M Abrar M Yusuf Dosani	Civil Engineering	3rd Yr/ 6th Sem	Internship
65.	Mohammad Sufiyan	Civil Engineering	3rd Yr/ 6th Sem	Internship
66.	Mohan Krushnarao Bijawe	Civil Engineering	3rd Yr/ 6th Sem	Internship
67.	Mohd Owais Raza	Civil Engineering	3rd Yr/ 6th Sem	Internship
68.	Mukesh Govardhan Katewar	Civil Engineering	3rd Yr/ 6th Sem	Internship
69.	Navjeevan Kasandas Chavhan	Civil Engineering	3rd Yr/ 6th Sem	Internship
70.	Nikhil Chandrakant Bhosale	Civil Engineering	3rd Yr/ 6th Sem	Internship
71.	Nikhil Namdeo Kuthe	Civil Engineering	3rd Yr/ 6th Sem	Internship
72.	Omkar Gajananrao Kshirsagar	Civil Engineering	3rd Yr/ 6th Sem	Internship
73.	Pankaj Shivaji Bedre	Civil Engineering	3rd Yr/ 6th Sem	Internship
74.	Pramod Wasudeo Wadibhasme	Civil Engineering	3rd Yr/ 6th Sem	Internship
75.	Pratham Ajay Dhomne	Civil Engineering	3rd Yr/ 6th Sem	Internship
76.	Pratik Subhas Rathod	Civil Engineering	3rd Yr/ 6th Sem	Internship
77.	Pravin Shatrugan Khajuriya	Civil Engineering	3rd Yr/ 6th Sem	Internship
78.	Premsingh Bhersing Machhirke	Civil Engineering	3rd Yr/ 6th Sem	Internship
79.	Qauzi Talha Ali Khan	Civil Engineering	3rd Yr/ 6th Sem	Internship
80.	Rohit Umesh Thakare	Civil Engineering	3rd Yr/ 6th Sem	Internship

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81.	Rushikesh Babanrao Gahukar	Civil Engineering	3rd Yr/ 6th Sem	Internship
82.	Sachin Changdeo Zade	Civil Engineering	3rd Yr/ 6th Sem	Internship
83.	Sachin Lokchand Katre	Civil Engineering	3rd Yr/ 6th Sem	Internship
84.	Sagar Shankar Puppalwar	Civil Engineering	3rd Yr/ 6th Sem	Internship
85.	Sahil Narendra Ladse	Civil Engineering	3rd Yr/ 6th Sem	Internship
86.	Santosh Omprakash Pal	Civil Engineering	3rd Yr/ 6th Sem	Internship
87.	Saurabh Shivajirao Padmane	Civil Engineering	3rd Yr/ 6th Sem	Internship
88.	Shaikh Mudassir Shikh Rahim	Civil Engineering	3rd Yr/ 6th Sem	Internship
89.	Sharven Sunil Ghurde	Civil Engineering	3rd Yr/ 6th Sem	Internship
90.	Shashank Ravindra Mahasaheb	Civil Engineering	3rd Yr/ 6th Sem	Internship
91.	Shekh Saqib Ahamad Abdul	Civil Engineering	3rd Yr/ 6th Sem	Internship
92.	Shivkumar Matkawala	Civil Engineering	3rd Yr/ 6th Sem	Internship
93.	Shubham Anil Chaudhari	Civil Engineering	3rd Yr/ 6th Sem	Internship
94.	Shubham Bhushan Belkode	Civil Engineering	3rd Yr/ 6th Sem	Internship
95.	Sourabh Laxmikant Katlawar	Civil Engineering	3rd Yr/ 6th Sem	Internship
96.	Suhas Naraynrao Sasankar	Civil Engineering	3rd Yr/ 6th Sem	Internship
97.	Sumedh Vilas Dhawale	Civil Engineering	3rd Yr/ 6th Sem	Internship
98.	Swapnil Arun Gaikwad	Civil Engineering	3rd Yr/ 6th Sem	Internship
99.	Vivek Chintaman Waghade	Civil Engineering	3rd Yr/ 6th Sem	Internship
100.	Yogesh Ramkrushna Jugnaike	Civil Engineering	3rd Yr/ 6th Sem	Internship
101.	Ashish Nagmote	Mechanical Engineering	4th Yr/ 8th Sem	Project Work
102.	Shrikant Tatode	Mechanical Engineering	4th Yr/ 8th Sem	Project Work
103.	Mohd. Raza	Mechanical Engineering	4th Yr/ 8th Sem	Project Work
104.	Shubham Bhalavi	Mechanical Engineering	4th Yr/ 8th Sem	Project Work
105.	Swapnil Wanjari	Mechanical Engineering	4th Yr/ 8th Sem	Project Work
106.	Komal Jitendra Lonpande	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
107.	Shyamal Pundalikrao Dugane	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
108.	Bhushan Sitaram Bisen	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
109.	Lokesh Narayan Raut	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
110.	Mirza Refaquat Muneeb Mirza	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
111.	Neeraj Vinod Guhe	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
112.	Prashant Shamrao Zode	Mechanical Engineering	3rd Yr/ 6th Sem	Internship

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113.	Saurabh Gajanan Shirbhate	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
114.	Sayed Mobin Sayed Azim	Mechanical Engineering	3rd Yr/ 6th Sem	Internship
115.	Mosami Tonge	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
116.	Shewta Rokde	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
117.	Sneha Langde	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
118.	Prasad Dongre	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
119.	Komal Meshram	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
120.	Shubham Pandhram	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
121.	Shubham Tandulkar	Electronics & Telecommunication Engineering	4th Yr/ 8th Sem	Project Work
122.	Siddhi Alkesh Pandey	Electronics & Telecommunication Engineering	3rd Yr/ 6th Sem	Internship
123.	Shital Anandrao Maraskolhe	Electronics & Telecommunication Engineering	3rd Yr/ 6th Sem	Internship
124.	Himanshu Bachle	Computer Engineering	4th Yr/ 8th Sem	Project Work
125.	Mona Prakash Vishwakarma	Computer Engineering	3rd Yr/ 6th Sem	Internship
126.	Nikeeta Kailash Ambule	Computer Engineering	3rd Yr/ 6th Sem	Internship
127.	Abhit Arvind Mishra	Computer Engineering	3rd Yr/ 6th Sem	Internship
128.	Harshal Arvind Singatwar	Computer Engineering	3rd Yr/ 6th Sem	Internship
129.	Shaikh Faizan Mohd Ajaz	Computer Engineering	3rd Yr/ 6th Sem	Internship

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STUDY OF FLUORIDE CONTENT IN GROUNDWATER OF CHANDRAPUR REGION AND FLUORIDE REMOVAL BY ADSORPTION TECHNIQUES

Dissertation submitted
In
Partial fulfillment of the requirement for the award of the degree
Of

Bachelor of Technology

In

Civil Engineering

By

Md Amin Parvez

Nidhi Ramnaresh Sharma

Prashant Govidrao Joshi

Rahul Borkar

Atif Abdul Zaheer

Under the guidance of

Prof. Hiradas G. Lilhare

Department of Civil Engineering,

SSIT, Kalmeshwar, Nagpur

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Department of Civil Engineering

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NAGPUR, MAHARASTRA
SESSION: 2021-2022

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Certificate

The thesis titled "**Study of Fluoride Content of Groundwater of Chandrapur Region and Fluoride Removal by Adsorption Technique**" submitted by **Atif Abdul Zaheer , Nidhi Ramnaresh Sharma, Prashant Govidrao Joshi , Rohit Shard Pimpalkar ,and Md Amin Md Parvez Umar Sheikh** for the award of degree of Bachelor of Technology in Civil Engineering has been carried out under my supervision at the Department of Civil Engineering of **Swaminarayan Siddhanta Institute of Technology, Nagpur** .The work is comprehensive, complete and fit for evaluation.

Under the guidance of.
Prof. Hitaddas G. Lilhare.

Prof. Pratik Patil
Head of the Department

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Forwarded by –

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Swaminarayan Siddhanta Institute of Technology, Nagpur

External Examiner

The B.E Viva –Voce Examination of has been held on 24/06/22 and accepted.

Signature of External Examiner

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ABSTRACT

Groundwater is the most important source of water to meet the requirement of consumption for drinking water, irrigation. India is the largest user of groundwater in the world. It uses an estimated 230 cubic kilometers of groundwater per year - over a quarter of the global total. More than 60% of irrigated agriculture and 85% of drinking water supplies are dependent on groundwater. Fluorine is widely dispersed in nature. It is about 0.06 to 0.09 % of component on Earth's crust and is estimated to be the 13th most abundant element on our planet. It is the most electronegative of all chemical elements, and as a result, it never exists in elemental form, but rather combines with other elements. Fluoride is distributed universally throughout soils, plants, and animals, and is assumed to be an essential element in animals, including humans. Fluoride has an important role in bone mineralization and formation of dental enamels. Fluoride, when consumed in inadequate quantities (less than 0.5 ppm), causes health problems such as dental caries, lack of formation of dental enamel, and reduced bone mineralization, especially among children. In contrast, when Fluoride is consumed in excess (more than 1 ppm), health problems may result, which equally affect the young and old (WHO 1996). At higher fluoride concentrations, metabolic processes are affected in humans, and overexposed individuals may suffer from skeletal or dental fluorosis, non-skeletal manifestations, or combinations of these maladies

Among the three forms of environmental media (air, soil, and water), groundwater is the major source of fluoride exposure in humans. . To sustain life, freshwater must be continuously available to humans. Throughout history, humans have relied on groundwater as a source of drinking water, and even today, more than half of the world's population depends on sources of groundwater for survival. The levels of natural fluoride that occur in groundwater range from 0.5 to 48 ppm, or more. Common symptoms of fluoride toxicity in humans are stained teeth, paralyzing bone disease, stooped backs, crooked hands and legs, blindness, and other deformities. W.H.O has stated that fluoride should be in the range of 0.1 to 0.5ppm. The Indian Standard for fluoride contents is 1 ppm. This shows that the requirement of fluoride content changes and it depends on the geographical condition and the age of human

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Domestic Wastewater Treatment by Root Zone Technology using macrophytes

Dissertation submitted
In
Partial fulfillment of the requirement for the award of the degree
Of

Bachelor of Technology

In

Civil Engineering

By

- MERAJ ALI **KANTA BISUN SAHU**

HARISH KUMAR LILHAR **KARTIK SADANAND GAURKAR**

SHARAFRAJ KHAN **MRUNAL ARJUN KRLKAR**

Under the guidance of

Prof. Hiradas G. Lilhare

Department of Civil Engineering,

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SESSION: 2021-2022

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Certificate

The thesis titled "**Domestic Wastewater Treatment by Root Zone Technology using macrophytes**" submitted by **Student1, Student2, Student3, Student4, Student5** for the award of degree of Bachelor of Technology in Civil Engineering has been carried out under my supervision at the Department of Civil Engineering of **Swaminarayan Siddhanta Institute of Technology, Nagpur** .The work is comprehensive, complete and fit for evaluation.

Prof. Pratik Patil

Head of the Department

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The B.E Viva –Voce Examination of has been held on 24/06/22 and accepted.

Signature of External Examiner

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Abstract

Every day, we face various environmental issues. The growing population and human activities deplete and degrade the quality and quantity of available water resources. Water is used for a variety of domestic and industrial purposes. Because of the rapid growth of industrialization and urbanization, water has become impure, containing so many insoluble materials and ingredients that it has become wastewater. Nowadays, the world is grappling with major water-related issues. Adopting well-defined methodologies at an affordable cost by utilizing natural resources is critical for effective water use. This project examines Root Zone Technology by using macrophytes, which is a low-cost and environmentally friendly method of wastewater treatment. To effectively treat domestic and industrial effluents, the root zone treatment and macrophytes treatment system uses a natural method. The wetlands bed will be divided into number of zones: soil layer, sand layer, coal layer and aggregate layer. Root zone plants (*Colocasia esculenta*) planted on the top layer and then treated with floating macrophytes (Pistia stratiotes/Spirodela and Lemna). When wastewater passes through the top and intermediate layers, all suspended solids become trapped in the pores of soil and sand, and the remaining solids are removed by bacteria. After passing through filter bed water is allow to store in another chamber where water is treated with floating macrophytes which utilizes dissolve and suspended nutrients and helps to reduce concentration of pollution of waste water. The effluent characteristics such as pH, color, odor, BOD, COD, TDS, TSS, Nitrogen, and Phosphate determined. The result shows a reduction in parameters Because of the longer detention periods, the removal rate is increasing.

The goal of this project is to determine which wastewater treatment method is the most cost-effective in comparison to traditional wastewater treatment methods. The conventional method is unsuitable for rural areas due to its high cost. One of the alternative wastewater treatment technologies is the Root Zone technology combine with macrophytes. This Treatment process is simple to use, requires little installation, and requires little maintenance. It is also less expensive than traditional treatment systems. To reap the benefits of this technology and ensure long-term development, it must be fully utilized in developing countries such as India.

Keywords: Root Zone technology, Root Zone, macrophytes, Phragmitesaustralis, canna Indica, Spirodela polyrrhiza. rhizosphere

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A PRELIMINARY REPORT ON

HYDRAULIC TRAFFIC REDUCE SYSTEMS (HTRS)

SUBMITTED TO THE RASHTRASANT TUKADOJI MAHARAJ UNIVERSITY, NAGPUR IN

THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

AWARD OF THE DEGREE OF

BACHELOR OF ENGINEERING (CIVIL ENGINEERING)

SUBMITTED BY

ANKIT C. KHADSE

SWEETY MESHRAM

NIKHIL K . RAMTEKE

SHUBHANGI SHAKHARE

SHIVAJI SINGH

HARSHALI UMREDKAR

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PROF. ANKUSH BANSOD

Department of Civil Engineering

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SWAMINARAYAN SIDDHANTH INSTITUTE OF TECHNOLOGY ,NAGPUR

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(2021-2022)

CERTIFICATE

This is to certify that the project report entitles,

HYDRAULIC TRFFIC REDUCE SYSTEMS (HTRS)

Submitted By,

ANKIT C. KHADSE	SWEETY MESHRAM
NIKHIL K. RAMTEKE	SHUBHANGI SAKHARE
SHIVAJI SINGH	HARSHALI UMREDKAR

Are bonafide students of this institute and the work has been carried out by him/her under the

Supervision of Prof. ANKUSH BANSOD and it is approved for the partial fulfilment of the requirement of RTMNU, NAGPUR for the award of the degree of Bachelor of Engineering

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Prof. ANKUSH BANSOD

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Prof. PRATIK PATIL

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DR. D.DEY

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ABSTRACT

Vehicular traffic is the major problem in metropolitan cities because traffic congestion is increasing rapidly at signalized intersections; it results in chronic situation in dense downtown areas. Traffic congestion is also major problem for smooth transportation. So, here we adopted a mechanism which minimizes traffic problems and that mechanism is called hydraulic machine. Hydraulic machine is the mechanisms which lift the things up and down at a particular height. Our purpose is to create a mechanism which lifts the footpath at signalized intersection up and down when there is more traffic at signalized intersection. We studied about the various congested signalized intersection areas and then selected Cotton Market & Baidyanath Square for our study. We collected the peak hour traffic data using survey method and categorized the vehicles into different classes.

Calculate the queue length at cotton market square using normal footpath and again calculate the queue length for same traffic data by using hydraulic footpath. On comparing the reduction of queue length percentage we observed that hydraulic footpath is more preferable than the normal footpath for congested traffic at signalized intersection, because it reduce approximate 60% queue length. Also, hydraulic footpath gives extra space at signalized intersection and it helps to increase service volume.

Keywords :-

Vehicular traffic Cotton Market Square, ITDP, IRC.

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Forwarded here with the thesis entitled **"Experimental Study of Pervious Concrete"** by **Mr. Akash Charde , Mr. Rohit Pimpalkar, Mr. Saurav Poinkar , Mr. Shubham Kelzarkar, Mr. Vishal Gharat,** student of this college in fulfilment of the requirement for the award of Bachelor Degree of B.E. **(Civil engineering)** in the faculty of Engineering and Technology, Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur, Maharashtra, India.

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SESSION 2021-22

APPROVAL CERTIFICATE

This is to certify that the dissertation entitled **"Experimental Study of Pervious Concrete"** submitted to Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur, Maharashtra, India in the department of **Civil Engineering** by **Mr. Akash Charde , Mr. Rohit Pimpalkar, Mr. Saurav Poinkar , Mr. Shubham Kelzarkar, Mr. Vishal Gharat,** in a partial fulfilment of the requirement for the award of the degree of Bachelor of Engineering in **Civil engineering.**

Internal Examiner

External Examiner

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Abstract

Pervious concrete is a special type of concrete with a high porosity used for concrete flatwork applications that allows water from precipitation and other sources to pass directly through, thereby reducing the runoff from a site and allowing groundwater recharge. It is also called as porous concrete, permeable concrete, and no fines concrete and porous pavement. Pervious concrete is made using large aggregates with little to no fine aggregates. The concrete paste then coats the aggregates and allows water to pass through the concrete slab. This type of concrete having a high void content of about 30%, is becoming popular nowadays due to its potential to reduce the runoff to the drainage systems which can provide a water flow rate around 0.34 cm/second. It is an important application for sustainable construction and is one of many low impact development techniques used by builders to protect water quality. Pervious concrete also find its effective application in low loading intensity parking pavements, footpaths, walkways and highways. The pervious concrete is considered as an Environmental Protection Agency (EPA) for providing pollution control, storm management and suitable development. It is a composite material produced by mixing cement, Admixture (conplast SP430) and gravel or crushed stone. This concrete has a light colour and open-cell structure because of which they do not absorb heat from the sun; they also do not radiate the heat back into the atmosphere, which reduces heating in the environment. Pervious concrete has low installation costs. In addition, it filters the storm water thus reducing the number of pollutants entering the rivers and ponds. Pervious concrete also improves the growth of trees. In the present study the behaviour of pervious concrete has been studied experimentally. The water-cement ratio was kept at different ratios 0.35, 0.40, 0.45. Different properties of pervious concrete e.g. workability, compressive strength, split tensile strength, flexural strength test at 7, 14 & 28 days have been studied experimentally. The mix proportions with aggregates size (4.75 mm to 10 mm) gives higher strength when compared to mixes with aggregates size (10 mm to 20 mm) and (4.75 mm to 20 mm) respectively.

Keywords- Pervious Concrete, Admixture, Mix Proportion, Permeability, Porosity.

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SNOW FREE CONCRETE SURFACE USING HYDRONIC RADIENT HEAT

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF BACHELORS
IN CIVIL ENGINEERING

SUBMITTED BY

AJAY NAGESHWAR

AJAY VITALKAR

SURESH MESHRAM

TANVEER IQBAL HUSSAIN

PROJECT GUIDE

Mr. Pratik Patil
Department of Civil Engineering

SSIT

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CERTIFICATE

THIS IS TO CERTIFY THAT THE PROJECT WORK ENTITLED **"SNOW-FREE CONCRETE SURFACES USING HYDRONIC RADIANT HEAT"** IS A BONAFIED WORK DONE BY FOLLOWING STUDENTS FOR PARTIAL FULFILMENT OF THE AWARD OF BACHELORS IN CIVIL ENGINEERING, DURING THEACDEMIC YEAR 2021-2022.

AJAY NAGESHWAR

AJAY VITALKAR

SURESH MESHRAM

TANVEER IQBAL HUSSAIN

THIS IS AN ORIGINAL PROJECT CARRIED OUT UNDER THE GUIDANCE OF Mr. PRATIK PATIL AND FULFILLS ALL THE REQUIREMENTS TO NATURE AND STANDARD OF WORK REQUIRED FOR THE BACHELORS IN CIVIL ENGINERRING.

Mr. PRATIK PATIL	**Mr. PRATIK PATIL**	**Dr. DEBBRATA S. DEY**
(GUIDE)	(H.O.D.)	(Principal)
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CERTIFICATE OF PROJECT GUIDE

THE WORK ENTITLED **"SNOW-FREE CONCRETE SURFACES USING HYDRONIC RADIANT HEAT"** IS A PIECE OF PROJECT WORK DONE UNDER MY GUIDANCE AND SUPERVISION FOR THE PARTIAL FULFILMENT OF AWARD OF BACHELORS IN CIVIL ENGINEERING AT SWAMINARAYAN SIDDHANT INSTITUTE OF TECHNOLOGY, NAGPUR.

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE PROJECT WORK,

- EMBODIES THE WORK OF CANDIDATES THEMSELVES.
- HAS BEEN DULY COMPLETED.
- IS UPTO THE STANDARD, BOTH IN RESPECT OF CONTENT AND LANGUAGE FOR BEING REFERRED TO THE EXAMINER.

Mr. PRATIK PATIL
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ABSTRACT

Snow accumulation during the winter results in many issues affecting national strategic goals. More specifically, it hinders the overall transportation system which significantly affects economic competitiveness. Moreover, it causes many traffic accidents in the winter affecting people's lives and assets.

Traditional methods for snow accumulation are the use of deicing agents such as salt-based chemical (NaCl, MgCl2) and sand. However, the application of these chemicals leads to the adverse effects on environment, drainage system and especially infrastructure (corrosion, premature failure). This remarkably raises the maintenance costs on structures.

Therefore, it is necessary to conduct an alternative technology for snow removal which is environmentally safe and highly effective to avoid the negative effects of those deicing agents. Heated snow melting systems are potential solutions to prevent snow accumulation that has increasingly drawn attention during the last few decades in many countries.

This research presents the method of snow melting with hydronic radiant heat to avoid the negative effects of traditional agents on environment as well as infrastructure systems. Two- dimensional (2D) and three dimensional (3D) finite element models are developed to investigate the influence of input parameters on the performance of snow melting in various environmental conditions. Intensive parametric studies are conducted to analyze and determine the key factors in the snow melting process. Consequently, appropriate values of those parameters are proposed for future experiments, design and construction in the Indian.

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A

Dissertation

On

"AN INVESTIGATION ON BACTERIAL CONCRETE"

Submitted to Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

In Partial Fulfillment of the Requirement for the Degree of

Bachelor of Engineering in Civil Engineering

In the faculty of Engineering & Technology Civil Engineering

Submitted by

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Ashish W. Khadilkar

Pirti Tayade

Shivkumar S. Netragaonkar

Akshay G. Khokle

Ranjeet U. Yesankar

Navin R. Gaikwad

Under the Guidance of

Asst. Prof. Girish Kawale

Assistant Professor, Civil Engineering Department,

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CERTIFICATE

This is to certify that the project work entitled

"AN INVESTIGATION ON BACTERIAL CONCRETE" has been duly submitted by the following students in satisfactory manner as a partial fulfillment the Degree in Civil Engineering from Rashtrasant Tukadoji Maharaj Nagpur University during academic session 2019-2020.

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Ashish W. Khadilkar
Pirti Tayade
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DISSERTATION APPROVAL SHEET

Swadeep M. Shambharkar, Shaharukalli U. Saiyyad, Ashish W. Khadilkar, Akshay G. Khokle, Pirti Tayade, Ranjeet U. Yesankar, Shivkumar S. Netragaonkar, Navin R. Gaikwad has done the appropriate work related to **"An Investigation on concrete"** in partial fulfillment for the award of Degree in Civil Engineering is being submitted to Swaminarayan Siddhanta Institute of Technology, Katol Road, Nagpur.

Internal Examiner:

Sign:

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External Examiner:

Sign:

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Place: Swaminarayan Siddhanta Institute of Technology, Katol Road, Nagpur.

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ABSTRACT

Cracking in concrete is the main concern throughout the structures because it causes loss of strength with time. Hence a special type of environmental free solution is to be made for maintenance purpose. Therefore, a bacterial concrete is prepared. However, the drawback of this material is that it easily cracks due to its low tensile strength, & due to temperature expansion, contraction, whereas the creep & shrinkage also produce cracks. While bigger cracks deteriorate structural integrity, also hair-line cracks may result in durability problem. In this study we will discuss about the self-healing process of concrete is process by which the cracks obtained in the body of concrete get repaired by itself or it required some external help to complete self-healing activity. The bacterial species called Bacillus subtilis for increasing the strength of concrete and decreasing the porosity at 28 Days.

Though these species are eco-friendly and does not cause any harm to human and use for improving the resistance of concrete when exposed to alkaline, sulfate and freeze-thaw environments. This paper mainly comprises of activation of bacteria and focuses on strength of bacteria concrete with normal concrete and also filling of cracks.

Keywords: *Self-healing concrete, Creep & shrinkage, hydrolyze urea, Bacillus subtilis*

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Anjali Dilip Ukey, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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This is to certify that **Ms. Pratiksha Wanjari**, studying B.E in Civil Engineering (3rd year) at **Swaminarayan Siddhanta Institue of Technology, Nagpur**, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from **18th July to 18th August 2022.**

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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This is to certify that Ms. Nisha Vijay Pakmode, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Mayuri Bawankar, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

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This is to certify that Ms. Komal Santosh Ingle, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Karishma Ashokrao Kohale, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

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This is to certify that Ms. Harshalata Bhagwat Pustode, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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Ref. No.: MREI/ 57

Date: 22/08/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Darshana Bhashkar Dautpure, studying B.E in Civil Engineering (3rd year) at Swaminarayan Siddhanta Institue of Technology, Nagpur, has done summer internship program on RCC Component work for the commercial building at Trimurtinagar, Nagpur. He/She is working under my concern from 18th July to 18th August 2022.

We have observed that the candidate is having hard working nature and sincere during the training period and wish his/her for better prospects in studies as well as in career.

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A

Project Report

On

"Experimental Study of Pervious Concrete"

Submitted in partial fulfilment of the requirements for Degree of

Bachelor of Engineering

In

Civil Engineering

Submitted to

Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU), Nagpur

Submitted by

Mr. Akash Charde

Mr. Rohit Pimpalkar

Mr. Saurav Poinkar

Mr. Shubham Kelzarkar

Mr. Vishal Gharat

Under the guidance of

Prof. Md Shahjada Alam

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Session: 2021-22

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Ref. No.: AB/NGP/2022/40

Date: 22/8/2022

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Devanshu Vikas Ghodam,** a student of 6th semester (3rd year), B.E (Civil Engineering), **Swaminārayan Siddhanta Institute of Technology, Nagpur,** has done internship program on foundation work for the residential building, Dabha, Nagpur. He is working under my concern from 19th July 2022 to 19th August 2022.

During the period of his internship programme with us he was found punctual, hardworking and inquisitive.

We wish him every success in life.

For Atharva Builders.
For. ATHARV BUILDERS

Authorized Signature Proprietor

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A

PROJECT REPORT

ON

"THE IMPACT OF CAM STRATEGIES ON INCREMENTAL SHEET FORMING FOR DC 04"

Submitted To

RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

SSIT

Under The Guidance Of

PROF. Junaid Khan

Submitted By

Ashish Bramhadas Nagdeote

Mohammad Junaid Raza

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Swapnil Suresh Wanjari

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DEPARTMENT OF MECHANICAL ENGINEERING

Certificate

Forwarded here with the thesis entitled "The Impact of CAM Strategies on Incremental Sheet Forming for DC04" .**Ashish Bramhadas Nagdeote, Mohammad Junaid Raza ,Shrikant Shankarrao Tatode, Shubham Shravan Bhalavi, Swapnil Suresh Wanjari** are students of this college in partial fulfilment of the requirement for the award of Degree of Engineering (Mechanical Engineering) in the faculty of Engineering & Technology, Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur, Maharashtra, India.

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Prof. Junaid Khan
H.O.D (Mechanical Engg.)

Prof. Junaid Khan
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Date : 15/04/2022

Place : Nagpur

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Abstract

Incremental sheet forming (ISF) is a sheet metal forming technique. A sheet is formed into the final workpiece by a series of small incremental deformations. However, studies have shown that it can be applied to polymer and composite sheets too. Generally, the sheet is formed by a round-tipped tool, typically 5 to 20mm in diameter. The tool can be attached to a CNC machine, a robot arm, or similar indents into the sheet by about 1 mm and follows a contour for the desired part. It then indents further and draws the next contour for the part into the sheet and continues to do this until the full part is formed. A pilot study shows that not much study has been done on the effect of CAM strategies for Incremental sheet forming. This research project involves CAM strategies made up of method of deformation, cut pattern, percentage step over, tool shape and part shape. Seventy-two different CAM strategies are possible by combining these parameters. All these strategies will be tested and analysed with the help of simulation software, but before that, a part will be generated in modelling software followed by a tool path. Programming will be required to convert the tool path into a simple (x, y, z, t) file for simulations. After the simulation, dominant strategies will be selected for physical experimentations based on simulation results and data interpretation. A decision will be taken based on sheet thickness uniformity, spring back, fatigue strength, and run time. After successful experiments, simulation results will be validated, followed by documentation. This project aims to determine optimal strategies for the foremost quality of parts produced by incremental sheet forming. This project also requires the knowledge of modelling, tool path generation (N.C. files), simulations and programming.

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INTERNSHIP CERTIFICATE

This is to certify that **Mr. Mirza Refaquat Muneeb Mirza**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period from 16.08.2022 to 16.09.2022.

We wish him, all the best in future endeavors.

KBM Industries

FOR KBM INDUSTRIES

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Date: 19/9/22

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This is to certify that **Mr. Lokesh Narayan Raut**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period from 16.08.2022 to 16.09.2022.

We wish him, all the best in future endeavors.

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Principal
Swaminarayan Siddhanta Institute of Technology, Kalmeshwar, Dist. Nagpur 441501

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INTERNSHIP CERTIFICATE

This is to certify that **Mr. Neeraj Vinod Guhe**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period **from** 16.08.2022 to 16.09.2022.

We wish him, all the best in future endeavors.

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This is to certify that **Mr. Saurabh Gajanan Shirbhate**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period from 16.08.2022 to 16.09.2022.

We wish him, all the best in future endeavors.

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This is to certify that **Mr. Sayed Mobin Sayed Azim**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period **from** 16.08.2022 to 16.09.2022.

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Ref. No. KBM/63

Date: 19/9/22

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This is to certify that **Mr. Bhushan Sitaram Bisen**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer Internship Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period from 16.08.2022 to 16.09.2022.

We wish him, all the best in future endeavors.

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Date: 19/9/22

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We wish him, all the best in future endeavors.

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Date: 19/9/22

INTERNSHIP CERTIFICATE

This is to certify that **Ms. Komal Jitendra Lonpande**, B.E., student in 6th semester **Mechanical Engineering** from **Swaminarayan Siddhanta Institute of Technology, Nagpur** has successfully completed the Summer **Internship** Programme at **KBM Industries, Hingna MIDC, Nagpur** during the period from 16.08.2022 to 16.09.2022.

We wish her, all the best in future endeavors.

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A

Project Report

On

"ENERVATION DETECTION & ALERT SYSTEM FOR FOUR WHEELER DRIVERS"

In Partial Fulfillment of the Requirement for the Degree of Bachelor of Engineering

In

"ELECTRONICS & TELECOMMUNICATION ENGINEERING"

Submitted By

SWETA MURLIDHAR ROKDE

MOSAMI RAMESH TONGE

SNEHA SURESH LANGDE

Under Guidance of

Prof. Pooja Thakre

SSIT

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SWAMINARAYAN SIDDHANTA INSTITUTE OF TECHNOLOGY NAGPUR,

MAHARASHTRA, INDIA

[2021-2022]

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

Certificate

This is to certify that, **Ms. Sweta Murlidhar Rokde, Ms. Mosami Ramesh Tonge & Ms. Sneha Suresh Langde** is the student of Eight Semester of Bachelor of Engineering (Electronics & Telecommunication Engineering) has satisfactorily completed their project work on the topic **"ENERVATION DETECTION & ALERT SYSTEM FOR FOUR WHEELER DRIVERS"** under my Guidance.

This is the partial fulfillment of the requirement for the award of degree of Bachelor of Engineering (Electronics & Telecommunication Engineering) of Rashtrasant Tukdoji Maharaj, Nagpur University, Maharashtra, INDIA. The Project work Submitted above is a bonafide work of **Ms. Sweta Murlidhar Rokde, Ms. Mosami Ramesh Tonge & Ms. Sneha Suresh Langde** at the institute during the Academic session of 2021-2022.

This work in the same form or in any other form is not submitted to any other university for the award of any degree or diploma. I find this work comprehensive, completed and fit for evaluation.

Date:

Place: Nagpur

Prof. Pooja Thakre
Guide

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SWAMINARAYAN SIDDHANTA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

Certificate

Forwarded herewith the Project entitled "ENERVATION DETECTION & ALERT SYSTEM FOR FOUR WHEELER DRIVERS" by **Ms. Sweta Murlidhar Rokde, Ms. Mosami Ramesh Tonge & Ms. Sneha Suresh Langde** student of this College in fulfillment of the requirement for the award of degree of Bachelor of Engineering (Electronics & Telecommunication Engineering) in the faculty of Engineering & Technology, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Maharashtra, INDIA 2020-2021.

Prof. Pooja Thakre
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Dept. of Electronics & Telecommunication Engg.
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Dr. D. Dey
PRINCIPAL
Principal
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SWAMINARAYAN SIDDHANTA INSTITUTE OF TECHNOLOGY
NAGPUR, MAHARASHTRA, INDIA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

PROJECT APPROVAL SHEET

Following team has done the appropriate work related to the "ENERVATION DETECTION & ALERT SYSTEM FOR FOUR WHEELER DRIVERS" in partial fulfillment for the award of Bachelor of Engineering in Electronics of "Rashtrasant Tukdoji Maharaj, Nagpur University, and Nagpur" and is being submitted to Swaminarayan Engineering & Technology, Kalmeshwar, Nagpur (Maharashtra).

Students Name: -

Ms. Sweta Murlidha Rokde
Ms. Mosami Ramesh Tonge
Ms. Sneha Suresh Langde

Asst. Prof. Pooja Thakre
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23.6.2022
External Examiner

Date: - 23.6.2022
Place: Nagpur

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Abstract

Drowsiness has been a major cause of horrific accidents all over the world causing deaths and fatal injuries. The number of fatal injuries is increasing day by day globally. Over the years, researchers have concluded that drivers lack sleep and more fatigue which causes the driver to fall asleep. This project shows that a new experimental model has been developed to detect driver drowsiness in order to reduce accidents caused by this problem which increases transport safety. In this work two methods are used to effectively detect the person's drowsiness.

First the driver's face is captured and retina of the eye is detected and facial feature extraction is performed and blinking values are calculated, then threshold values are set. Second, an Arduino module is used that integrates with elastomeric sensors for real-time calculation of driver's eye blinking is measured and if the threshold limit is exceeded then the buzzer will be on and vibrator is on until the driver doesn't turn the project off . The result of both methods is taken as input to make the final decision and alert the driver.

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A

Project report

On

"ANDROID CONTROLLED FIRE FIGHTER ROBOT"

In Partial Fulfilment of the Requirement for the Degree of Bachelor of

Engineering

In

"ELECTRONICS & TELECOMMUNICATION ENGINEERING"

Submitted By

KOMAL BABA MESHRAM

PRASAD ANIL DONGRE

SHUBHAM DEEPAK PANDHRAM

SHUBHAM VIJAYRAO TANDULKAR

Under Guidance of

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SWAMINARAYAN SIDDHANTA INSTITUTE OF TECHNOLOGY NAGPUR,

MAHARASHTRA, INDIA

[2021-2022]

-DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

ENGINEERING

Certificate

This is to certify that, **Mr. Komal Baba Meshram, Mr. Prasad Anil Dongre, Mr. Shubham Deepak Pandhram & Mr. Shubham Vijayrao Tandulkar** is the student of Eight Semester of Bachelor of Engineering (Electronics & Telecommunication Engineering) has satisfactorily completed their project work on the topic **"ANDROID CONTROLLED FIRE FIGHTER ROBOT"** under my Guidance.

This is the partial fulfilment of the requirement for the award of degree of Bachelor of Engineering (Electronics & Telecommunication Engineering) of Rashtrasant Tukdoji Maharaj, Nagpur University, Maharashtra, INDIA. The Project work Submitted above is a bonafide work of **Mr. Komal Baba Meshram, Mr. Prasad Anil Dongre, Mr. Shubham Deepak Pandhram & Mr. Shubham Vijayrao Tandulkar** at the institute during the Academic session of 2021-2022.

This work in the same form or in any other form is not submitted to any other university for the award of any degree or diploma. I find this work comprehensive, completed and fit for evaluation.

Date: 23.6.2022

Place: Nagpur

Prof. Pooja Thakre

Guide

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SWAMINARAYAN SIDDHANTA INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

Certificate

Forwarded herewith the project entitled **"ANDROID CONTROLLED FIRE FIGHTER ROBOT"** by **Mr. Komal Baba Meshram, Mr. Prasad Anil Dongre, Mr. Shubham Deepak Pandhram & Mr. Shubham Vijayrao Tandulkar** student of this College in fulfilment of the requirement for the award of degree of Bachelor of Engineering (Electronics & Telecommunication Engineering) in the faculty of Engineering & Technology, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Maharashtra, INDIA 2021-2022.

FIGHTER ROBOT" by Mr. Komal Baba Meshram, Mr. Prasad Anil Dongre, Mr. Shubham

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

PROJECT APPROVAL SHEET

Following team has done the appropriate work related to the **"ANDROID CONTROLLED FIRE FIGHTER ROBOT"** in partial fulfilment for the award of Bachelor of Engineering in Electronics of "Rashtrasant Tukdoji Maharaj, Nagpur University, and Nagpur" and is being submitted to Swaminarayan Siddhanta Institute Of Technology, Kalmeshwar, Nagpur (Maharashtra).

Students Name: -

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Mr. Prasad Anil Dongre

Mr. Shubham Deepak Pandhram

Mr. Shubham Vijayrao Tandulkar

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23.6.2022

External Examiner

Date: - 23.6.2022

Place: Nagpur

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ABSTRACT

Our proposed project aims to develop an android controlled fire fighter robot that can be used to extinguish fires through remote handling. The vehicle consists of a water tank along with a pump which can throw water when needed. The system uses an 8051 microcontroller for this purpose. The android device is used as a transmitter to send over controlling commands to the vehicle. The android device provides a good touch based gui for controlling the robotic vehicle. The Bluetooth receiver on the vehicle is used to receive those commands sent by the android device. These are then fed to the motors responsible for controlling the vehicle movements in front, back, left and right direction.

The Bluetooth receiver is interfaced with an 8051 microcontroller for this purpose. The microcontroller after receiving input commands, operates the motors through a driver IC for vehicle movements.

The use of android has one more advantage in addition to improved GUI. It allows use of Bluetooth technology for communication allowing the vehicle to operate in a good range from the device. The system can also be later enhanced through the use of a wireless camera to be used for monitoring purposes

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DESIGN OF A SECURE WIRELESS HOME AUTOMATION SYSTEM USING Wi-Fi TECHNOLOGY

Dissertation submitted
inpartial fulfilment of requirement for the award ofdegree of

Bachelor of Engineering

in

Computer Engineering

Submitted

by

HimanshuBachale

Guide

Prachi Bhure

SSIT

Department of Computer Engineering

Swaminarayan Siddhanta Institute of Technology, Nagpur

Session -2021-2022

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CERTIFICATEE

The thesis titled **"DESIGN OF A SECURE WIRELESS HOME AUTOMATION SYSTEM USING Wi-Fi TECHNOLOGY"** submitted by **Himanshu Bachale** for the award of degree of Master of Technology in CE, has been carried out under my supervision at the Department of CE of **Swaminarayan Siddhanta Institute of technology, Nagpur.** The work is comprehensive, complete and fit for evaluation.

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External Examiner

The B.E. Viva- Voice Examination of **Himanshu Bachale** has been held on 21/6/2022 and accepted.

Signature of External Examiner

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ABSTRACT

Technology is always evolves. To be able to design a product using the current technology that will be beneficial to the lives of others is a huge contribution to the human community. This paper presents the design and implementation of a low cost but yet flexible mechanism using a smartphone based home automation system. With the rapid expansion of the Internet, the owners have been requesting remote control and monitoring of these in home appliances. This leads to networking these appliances to form a kind of home automation system. An Android based home automation system allows users to control the appliances by an Android application or through a website is presented.

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