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# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_

#### AGHAV SANKET GAJANAN

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S611002</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of <u>Neodymium Magnetic solar Car</u>

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



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# CERTIFICATE OF COMPLETION

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#### BARGAJE SUJAL UMESH

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## CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_BAR

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# CERTIFICATE OF COMPLETION

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#### BHANDARI RANI MALLAYA

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# CERTIFICATE OF COMPLETION

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during academic year 2023-24

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## CERTIFICATE OF COMPLETION

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(PBL) Activity for the Project title of Automatic Solar Tracking Device

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(PBL) Activity for the Project title of Automatic Solar Irrigation System Using Arduino Uno

during academic year 2023-24

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This Certificate is awarded to OM SANJAY MANKAR

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(PBL) Activity for the Project title of Automatic Solar Irrigation System Using Arduino Uno

during academic year 2023-24

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This Certificate is awarded to MOHITE VAIBHAV VILAS

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(PBL) Activity for the Project title of Automatic Solar Irrigation System Using Arduino Uno

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# CERTIFICATE OF COMPLETION

This Certificate is awarded to **KOKARE NILESH DAGADU** 

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(PBL) Activity for the Project title of Automatic Solar Irrigation System Using Arduino Uno

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# CERTIFICATE OF COMPLETION

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#### PALANGE SHRUTIKA ASHOK

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(PBL) Activity for the Project title of Solar Fire Extinguisher

during academic year 2023-24

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# CERTIFICATE OF COMPLETION

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## CERTIFICATE OF COMPLETION

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# CERTIFICATE OF COMPLETION

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#### SHEJWAL HARSH RAJESH

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#### SINGH AMARJEET SUDAMA

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This Certificate is awarded to

### VICHARE SLESHA SHAILESH

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This Certificate is awarded to **CHORGE YASH SANJAY** 

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Prof. S. M. Godase HOD, Mechanical



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## CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_

### PAPUL PREM HANUMANT

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612060</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Solar Powered Grass Cutter

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🍘 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to **PATIL CHETAN CHHAGAN** 

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612061</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Solar Powered Grass Cutter

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to **ROMAN** 

ROMANPATIL TEJAS JAYSING

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612062</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Solar Powered Grass Cutter

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🍘 .zcoer.in

## CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_ SHELAR PRANAV RAJU

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612063</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Solar Powered Grass Cutter

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_

#### SINGH ANMOL SHYAMBIHARI

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. **S612064** for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Salted Water Purifier

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🗣 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🍘 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_

### VITHOKAR NEHA GAJANAN

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612065</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Salted Water Purifier

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🍘 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_\_

#### AHIRE SUMIT NITYANAND

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612066</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Salted Water Purifier

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_

### **BANSODE SUREKHA MUKUND**

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612067</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Salted Water Purifier

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_

### HASAN MEHBOOB MUJAWAR

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612068</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Fire Fighter Robot

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_ JADHAV KARAN SURENDRA

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612069</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Fire Fighter Robot

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_\_

LENDAVE ATHARV HARIDAS

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612071</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Fire Fighter Robot

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🗣 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🍘 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to \_\_\_\_\_ PATIL PRATIKSHA RAVINDRA

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612072</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Fire Fighter Robot

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical



🛇 S. No.39, Narhe-Dhayari Road, Narhe, Pune-411 041, 🕿 020 67206131, 💌 admission.zcoer@zealeducation.com 🌐 .zcoer.in

# CERTIFICATE OF COMPLETION

This Certificate is awarded to

### SARWAD ADITYA SUBHASH

of Second Year Mechanical Engineering Department, Zeal College of Engineering &

Research, Roll No. <u>S612073</u> for the successfully completion of Project Based Learning-II

(PBL) Activity for the Project title of Fire Fighter Robot

during academic year 2023-24

Prof. S. M. Godase HOD, Mechanical

Zeal Education Society's

### Zeal College of Engineering and Research

Narhe, Pune -411041



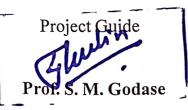
#### CERTIFICATE

This is to certify that *Mr. Khopatkar Amir Ashfaq, Mr. Kazi Rahil Liyakat, Mr. Pansare Tushar Sambhaji, Ms. Parnerkar Siddhi Jagdish* has successfully completed the Project Stage – II entitled "*Design and Fabrication of Cooling Chamber by using Thermoelectric Effect*" under my supervision, in the partial fulfilment of Bachelor of Engineering – Mechanical Engineering of University of Pune.

Date:29/05/24

Place: Pune

Prof. A.V Karande



Head of Department

**Prof. A.V Karande** 

Project Coordinator

Dr. A. M. Kate

Principal

**External Examiner** 



### Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041



CERTIFICATE

This is to certify that Suraj Kate, Trupti Kharade, Akash Mishra, Kiran Naik has successfully completed the Project Stage – II entitled "Investigation of Heat Exchanger Using PCM" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :29/057 24

Place : Pune

Prof. D. P. Kamble

\_\_Project Guide



Head of Department

V. Karande

**Project Coordinator** 

Arkate

Dr. A. M. Kate Principal

**External Examiner** 



Zeal Education Society's

Zeal College of Engineering and Research

Narhe, Pune -411041



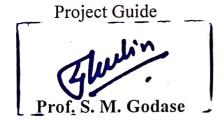
**CERTIFICATE** 

This is to certify that *Mr. Joshi Harsh Santosh*, has successfully completed the Project entitled "*Design & Development of Industrial Material Handling Manipulator*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 29/09/2024

Place : Pune

Dr. Y. M. Bhamare



Head of Department

V. Karande Prof. A.

Project Coordinator

Dr. A. M. Kate Principal

External Examiner Seal Zeal Education Society's

### Zeal College of Engineering and Research

Narhe, Pune -411041

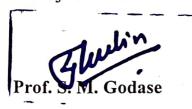


CERTIFICATE

This is to certify that *Mr. Joshi Harsh Santosh*, has successfully completed the Project entitled "*Design & Development of Industrial Material Handling Manipulator*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 29/09/2024 Place : Pune.

Dr. Y. M. Bhamare Project Guide



Head of Department

Prof. A. V. Karande

Project Coordinator

The

Dr. A. M. Kate Principal





17th APRIL, 2024

#### PROJECT COMPLETION LETTER

#### TO WHOMSOVER IT MAY CONCERN

This is to certify that the following students of fourth year bachelor of mechanical engineering, from Zeal College of Engineering and Research, Pune has successfully completed their project work in our company on "Design & Development of Industrial Material Handling Manipulator" from 24<sup>th</sup> August 2023 to 17<sup>th</sup> April 2024. All the project work and its result are approved by the concerned authority of our company.

- 1. HARSH JOSHI
- 2. BHAVESH KUDALE
- 3. CHINMAY PHUTAK
- 4. PRAJWAL KAKADE

During this period, we found them hard working and sincere.

We wish them every success in their future endeavours.

From Jaycee Equipments Pvt. Ltd. Ramtekadi, Hadapsar, Pune- 411013



#### Jaycee Equipments Pvt Ltd.

63/6, United Industrial Estate,
 Ramtekedi, Hadapsar, Pune 411 028, India

info@jaycee.co.in www.jaycee.co.in +91 98220 40508 CIN NO: U29299PN2010PTC136793



Date:24/08/2023

To,

The Head of Department, Department Of Mechanical Engineering, Zeal college of engineering and Research, Narhe, Pune- 411041.

#### Subject: Sponsorship Letter

Dear Sir,

Jaycee is in the business of providing complete automation solutions for manufacturing industry. Jaycee Equipment Pvt Ltd. is material handling and lifting equipment manufacturer and service provider. Jaycee has made Component handling easy with finely engineered lifting arms that make life easy for operators and companies.

Following students of final year Mechanical Engineering has been given project work for their Final year Projects on the topic-

#### "Design & Development of Industrial Material Handling Manipulator"

Mr. Bhavesh Mahendra Kudale	PRN:72152583M
Mr. Harsh Santosh Joshi	PRN:72152499M
Mr. Chinmay Sunil Phutak	PRN:72152765F
Mr. Prajwal Pradeep Kakade	PRN:72152512B

Hence, Jaycee Equipments Pvt. Ltd. Ramtekadi, Hadapsar, Pune, Maharashtra 411013 is Sponsoring the above mentioned project for above list of students.

Regards. Mr. John D'Souza | Director

Jaycee Equipments Pvt Ltd.

 63/6, United Industrial Estate, Ramtekedi, Hadapsar, Pune 411 028, India info@jaycee.co.in www.jaycee.co.in +91 98220 40508 CIN NO: U29299PN2010PTC136793

### Zeal Education Society's Zeal College of Engineering and Research

Narhe, Pune -411041



#### CERTIFICATE

This is to certify that *Mr. Shreyas M Aiwale, Mr. Ketan K Ambede, Ms. Sanika P Bhabal, Mr. Akshay R Chavan* has successfully completed the Project Stage – II entitled "Experimental Investigation Of Incremental Sheet Forming In The Manufacturing Of Titanium Based Plate With Different Geometric Shape" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/05/ 2024 Place : Pune

Prof. S S Adewar

Project Guide

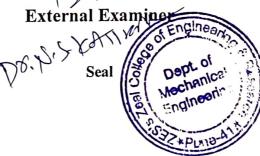


Head of Department

**Prof. A. V. Karande** Project Coordinator

Hokate

Dr. A. M. Kate Principal 10



#### Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that Mr. Duddoo Parth P., Mr.Dudhal Shantanu G. Mr.Dudhe Ghanashyam M., Mr. Warkade Sujeetkumar K. has successfully completed the Project Stage – II entitled "Design, Analysis And Development Of Double Stacked Heat Exchanger." under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date 29/04/24 Place : 1 PUL Prof. S. S. Borade Project Guide Prof. S. M. Godase Head of Department

Prof Karande

Project Coordinator

Dr. A. M. Kate Principal





### Mechatol Product Engineering Solutions Pvt Ltd

OFFICE ADDRESS

KETAN PARK, SECOND FLOOR, OPPOSITE TO SURAJ NAGAR NEAR GURUGANESH NAGAR SHANTIBAN CHOWK KOTHRUD, PUNE -411038

HROD, FONE -411030

April 29, 2024

#### SPONSORED PROJECT COMPLETION LETTER

То

Whomsoever It May Concern

This is to inform that following students have successfully completed their industrial project in the name of "Design, Analysis & Development of Double Stacked Heat Exchanger". In the academic year 2023-2024 with Mechatol Product Engineering Solutions Pvt Ltd, Pune

College Name: Zeal College of Engineering and Research, Narhe

#### **Candidates Name:**

- 1. Parth Prashant Duddoo
- 2. Shantanu Ganesh Dudhal
- 3. Ghanashyam Madhukarrao Dudhe
- 4. Sujeetkumar Kanhaiya Warkade

During their tenure we found above students reliable and responsible We wish them success in all their future endeavours.

Mr. Anand Bhise Director Mechatol Product Engineering Solutions Pvt Ltd Pune, India

### Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041



### CERTIFICATE

This is to certify that *Mr. Yash S. Jadhav, Mahesh U. Bhapse, Tejas S. Bhagwan, Ashik D. Ilamkar,* has successfully completed the Project Stage – II entitled "Evaporative Air Cooler with 360<sup>o</sup> Air Circulation using different cooling pad materials" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :29/4/24

Place : \_

Prof A. V. Karande



Head of Department

**External Examiner** 



-

Internal Examiner

Dr. A. M. Kate

Principal

#### Zeal College of Engineering and Research

#### Narhe, Pune -411041



#### CERTIFICATE

This is to certify that Mr.Koli Pranav Mallesha, Mr.Andhale Rohit Kisan Mr.Kodag Umesh Dhanaji, Mr.Gaikwad Raj Shantaram has successfully completed the Project Stage – II entitled "Design and Analysis of Modern Vertical Axis Wind Turbine (VAWT)" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of Savitribai Phule Pune University.

Date :29/05/24

Place : Pune

Dr. P. P. Ritapure

Project Guide

1Liv Prof. S.M. Godase

1100.05.111. Godase

Head of Department

Prof. A. V. Karande

Project Coordinator

**Dr. A. M. Kate** Principal

**External Examiner** 



Zeal Education Society's

Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Chirag G. Dangi, Mr. Sushant S. Gaikwad, Mr. Abhishek S. Rajvir, Mr. Anurag R. Tiwari* has successfully completed the Project Stage – II entitled "(*Design and Development of Compressed air to air heat exchanger*)" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/05/2024 Place : Pune. Prof. AU Gandigude Project Guide

Nill

Prof. S. M. Godase Head of Department

V. Karande

**Project Coordinator** 

Dr. A. M. Kate Principal

**External Examiner** 





#### Technotrend Innovations Pvt Ltd.

S: No. 22/2A/2, Kute Industrial Estate, Narhe, Pune 411 041 technotrendinnovations@gmail.com www.technotrendinnovations.com CIN: U29308PN2022PTC211473 PHONE: +91 9373428950/+91 7620401533

To,

Head of Department, Mechanical Engineering, Zeal Education Society's, Zeal College of Engineering & Research, Pune 411041

Subject: Completion of Final Year Engineering Sponsored Project

Respected Sir,

We hereby inform you that our sponsored project "Project- Design and Development of Compressed Air to Air Heat Exchanger" given to the students of your college named as below have Allocated the project. They have done the project under the Guidance of Prof. A.U Gandigade (College Guide).

This project includes design, modeling, analysis and manufacturing which has been successfully completed.

1) Rajvir Abhishek Suresh

2) Tiwari Anurag Rajeshkumar

3) Dangi Chirag Ghanshyam

4) Gaikwad Sushant Satish

Thanking You, INOI Regards.

Vijay Gunge (Project Co-Guide) Managing Partner, Technotrend Innovation Pvt Ltd., Narhe, Pune.

#### Zeal Education Society's

#### Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Sahil Badade, Sanidhya Ballal, Amulya Kadam,* has successfully completed the Project Stage – II entitled "*Design and Manufacturing of Paper Tube Cutting Machine*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/5/2024 Place : <u>Pune '</u>

Prof. L.B. Mali Project Guide

-Head of Department

Prof. A. V. Karande

Ton. A. v. Karanue

Project Coordinator

TTOR BE

Dr. A. M. Kate Principal

External Examiner



Seal

# Zeal College of Engineering and Research

Narhe, Pune -411041



This is to certify that *Miss. Vaishnavi Nanasaheb Gadhave, Miss. Siddhi Sandip Hadkar, Mr. Vivek Tanaji Govekar, Mr. Prajwal Ramkishan Wakade,* has successfully completed the Project Stage – II entitled "CFD *Analysis and Testing of Heat Transfer and Flow behavior of fluid flowing over the straight and twisted square fin*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of Savitribai Phule University of Pune.

Date:30/5/2024

Place: Pune

Prof. N. B. Surwase

Project\_Guide\_

**Prof. S. M. Godase** Head of Department

Prof. A. V. Karande Project Coordinator

Arkate

Dr. A. M. Kate



# Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041



### **CERTIFICATE**

This is to certify that Mr. Khule Harshal Sunil Mr. Kokitkar Sahil Shankar Mr. Kole Tejas Anil

Mr. Korvekar Chinmay Chandrakant

has successfully completed the Project Stage - II entitled "Vibration Analysis of CI Engine Using Diesel and Bio-Diesel" under my supervision, in the partial fulfilment of Bachelor of Engineering - Mechanical Engineering of Savitribai Phule Pune University.

Date :30/4/24 Place :\_ Prof A.R. Suryavanshi Project Guide-. Godase Head of Department Do. N.S. Etnikte **External Examiner** Collego

of. A.V. Karande

**Project Coordinator** 

Prof. A.M. Kate Principal

i

Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Ghorpade Prasad Rajiv*, *Mr. Gore Nikhil Ramhari*, *Mr. Gharal Mukund Pandharinath*, has successfully completed the Project Stage – II entitled "Design and Development Automated Sun Tracking Solar Panel" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date 29/4/24 Place: Prof. P.B. Magad Project Guide

1XV Prof. S. M. Godase

Head of Department

Karande

Project Coordinator

Dr. A. M. Kate Principal



# Zeal College of Engineering and Research Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Tejas Dattatray Bheske, Mr. Lalaso Sanjay Valkunde, Mr. Jaydeep Ananda Chile,* has successfully completed the Project Stage – II entitled **Design and Manufacturing of Ceiling Fan Cleaning System** under my supervision, in the partial fulfilment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/5/24

Place: Pune

Prof M. Godase

Head of Department

V. Karande

Project Coordinator Dr. A. M. Kate

Principal

External Examiner



# Zeal College of Engineering and Research

Narhe, Pune - 411041



CERTIFICATE

This is to certify that *Mr. Shantanu S. Ghate*, *Mr Arya V. Vilasagar*, *Mr. Manthan S. Naik*, *Mr.Sangram S. Sutar* has successfully completed the Project Stage – II entitled "*Performance Evaluation Of Battery Cooling System For EVs By Forced Cooling*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/5/2024

Place : Pune

Prof. S. K. Maknikar

Project Guide

1 Million

Prof. S. M. Godase

Head of Department

of. A. V. Karande

Project Coordinator

Dr. A. M. Kate Principal

External Examiner



## Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is certify that *Mr. Prasad misal, Mr. sourav latke, Miss. Kulkarni Arpita M., Miss. Bhoite Mayuri M.*, has successfully completed the Project Stage – II entitled "(*Design and Development of Heat Pump*)" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : //29 5/24

Place :

Prof. Guide Name \_ Dr. A. B. Ubale

Head-of Department

Project coordinator Prof. A.V. Karande

Artate

Dr. A. M. Kate Principal

**External Examiner** 



# Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. (Athare Nikhil) Ms. (Avhad Jyoti), Mr.* (Gondhale Ritesh), *Ms. (Pujari Laxmi)*, has successfully completed the Project Stage – II entitled "(*Productivity Improvement in Ultra BIW Line*)" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/05/2024 Place : Pune

. Karande Prof. Project Guide 1. Godase Pro

Head of Department



Internal Examiner

Principal





### **CERTIFICATE**

This is to certify that, the project work titled: "PRODUCTIVITY IMPROVEMENT IN LCV ULTRA BIW LINE" is bonafide work carried out by Mr.Gondhale R G (B611056), Athare N B (B611007), Avhad J M (B611008) and Pujari L S (B613014) student for the Graduateship Examination of the , under my guidance and direction.

Dur

Signature of the Guide: Name: Mr. Suhas Dhodare Designation: Deputy General Manager Address- H Block, H-4, First Floor Tata Motors Ltd, Pimpri, Pune-Maharashtra

Place: Pimpri, Pune

Date: 4 March 2024

#### TATA MOTORS LIMITED

MIDC, Bhosari, Pimpri-Chinchwad, Maharashtra 411018

# Zeal College of Engineering and Research

## Narhe, Pune -411041



CERTIFICATE

This is to certify that Shivsamb Pawar, Satyajit Mokal, Praful More, Prathmesh Mule has successfully completed the Project Stage – II entitled "Design and Manufacturing of Weighing and Sorting Machine" under my supervision, in the partial fulfillment of Bachelor of Engineering – Mechanical Engineering of University of Pune.

Date :30/05/2024

Place : Pune

Prof. D. P. Kamble

Project Guide

- Prof. S. M. Godase -Head of Department

Prof. A. V. Karande Project Coordinator

Arkate

Dr. A. M. Kate Principal

External Examiner Do. N.S. KATIER





# **Project Completion Certificate**

#### **Certificate of Completion**

This is to certify that BE Mechanical students' names listed below from 'Zeal collage of Engineering & Research, Pune' has successfully completed the project titled 'Design & Manufacturing of Automatic Billet Sorting Machine' on 31<sup>st</sup> March -2024. This project was undertaken by listed students in the capacity of Support & physical activities for Design & Manufacturing, for there academic year of 2023-24.

Throughout the duration of the project, all Project members / students demonstrated exceptional skills in group discussions, new Idea generations & executions, which helped towards contributed significantly to the successful completion of the project deliverables.

We appreciate the dedication and expertise that project group students brought to this project, which was completed to our full satisfaction.

This certificate is issued as a testament to the professional achievements and contributions of these students.

Student's Name	Collage Name	Collage Guide	Company Name	Company Authorities & Guides
<ol> <li>Satyajit Mokal</li> <li>Praful More</li> <li>Shivsamb Pawar</li> <li>Prathamesh Mule</li> </ol>	Zeal Collage of Engineering & Research	Prof. D. P. Kamble	Success Industries	<ol> <li>Mr. Sachin Saruk - Director</li> <li>Mr. Sachin Patil - Manager Marketing</li> <li>Mr. Mahavir Patil - Technical Manager</li> <li>Mr. Gopal - Design</li> </ol>



Issued on -15th April 2024.



Global Leader in Air Leak & Flow Test

Chapel Pather A Series MVC SUMPER Global Leader in Machining Spindles

#### Ref:. SI/LTR/2023-24/012

#### Date. 09.11.2023

#### To Whomsoever It May Concern

This is to certified that Mr. Satyajit Mokal, Mr. Shivshamb Pawar, Mr. Prathamesh Mule, Mr. Praful More students of final year BE Mechanical engineering at Zeal college and engineering research Pune have carried out the project entitled Automatic Weighing and Sorting Machine.

. .

This project has been conducted manufacturing plant of **Success Industries MIDC Chinchwad,Pimpari-Chinchwad,Pune - 411019.** The observations recorded and calculation scared out by them have been verified and found correct for the it is being started that manufacturing plant is in the process of implementing they are suggestions on energy conservation.

The conduct of this student during the tenure all the project works observed to be sincere effort taking and responsible. We extend our best wishes for their prosperous career and future ahead.

This certificate is being issue to them for their reference, record and academic use.

Authorized signatory, For SUCCESS INDUSTRIES For Success Industries, rietor

No. 12/27, D.I. Block MIDC Charactwood: Nr. Citrus Hotel. 12: +91+9637123413 Mox Chole: Akurdi Pure 411019, Moharashiro/INDIA: 12: +91+9146699413 🕞 www.successind.com 🗠 esuccess.spinilignal.com 🗠 assign spinilisuccessind.com

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# Zeal College of Engineering and Research

## Narhe, Pune -411041



**CERTIFICATE** 

This is to certify that Mr. Wedant Saralkar, Mr. Dashrath Khopade, Mr. Pankaj Takale, Mr. Kishor Shinde, has successfully completed the Project Stage – I entitled (Design And Manufacturing Of Portable And Foldable Solar PV System For Domestic Use.) under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30 /57 24 Place :

Prof. P. S. Gadhave

Project Guide M. Godase

Head of Department

rof. A. V. Karande

**Project Coordinator** 

Dr. A. M. Kate

Principal

**External Examiner** 



# Zeal College of Engineering and Research Narhe, Pune -411041



This is to certify that *Mr. Dhawal Vinod Gaikwad, Mr. Sanjog Sanjay Gandhi, Mr. Prathmesh Gorakhnath Garud, Mr. Panchasheel Gulab Gaikwad* has successfully completed the Project Stage – II entitled "*Implementation Of Forced Convectional Mixed Mode Multipurpose Solar Dryer*" under my supervision, in the partial fulfilment of Bachelor of Engineering – Mechanical Engineering of University of Pune.

Date:30/ S/2024 Place: Pune

Karande

Project Guide

Prof. S. M. Godase

Head of Department

Prof. A.V Karande

**Project Coordinator** 

tikat

Dr. A. M. Kate

Principal

External Examiner

# Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Ghodnadikar Ganesh Sandeep, Ms. Khamkar Apurva Tukaram, Mr. Mohamad Zaidali Sajidali Khan, Ms. Kamble Lata Babasaheb,* has successfully completed the Project Stage – II entitled "Development of an Android /IOS/ Microsoft App for Industrial *Task Management and Record Storages*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/05/2024

Place: Pune

Prof. A.B.Ubale

Project Guide

Pro M. Godase

Head of Department

Prof. A. V. Karande

Project Coordinator

Dr. A. M. Kate

Principal

**External Examiner** 



# Zeal College of Engineering and Research

Narhe, Pune - 411041



CERTIFICATE

This is to certify that *Mr. Yash. S .Karanjkar , Mr Kartik. T .Drwatkar, Mr. Ashitosh. S .Kamble , Mr.Digvijay. Y .Parmekar* has successfully completed the Project Stage – I entitled "*Design And Manufacturing Of Rope Climbing Robot*" under my supervision, in the partial fulfillment of Bachelor of Engineering -Mechanical Engineering of University of Pune.

Date :30/5/2024 Place : Pune

Dr. H. P. Jagtap

Dr. n. r Sagiap

Project Guide

Prof. S. M. Godase

Head of Department

. Karande

Project Coordinator

Dr. A. M. Kate Principal

External Examiner



# Zeal College of Engineering and Research

### Narhe, Pune -411041



CERTIFICATE

This is to certify that Mr. GAWADE PRATIK BABAN, DAFAL SANKET MAHADEV, CHAVAN SIDDHARTH SHIVAJI, CHANDEL DIGVIJAY KIRANSINGH, has successfully completed the Project Stage – II entitled "Electronic Operated Moped Main Stand" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/5/24 Place : Pune.

Prof. (Wishvajeet C. Shinde Project Guide

Prof. S. M. Godase Head of Department

Prof A Karande

Project Coordinator

Dr. A. M. Kate Principal



Dr.NS.BATIKAL

# Zeal College of Engineering and Research Narhe, Pune -411041



# CERTIFICATE

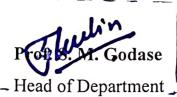
This is to certify that *Mr. Sunil V. Sirsath*, *Mr. Omkar P. Dhabale*, *Mr. Prasad R. Shinde*, *Mr. Anup J. Salunkhe*, has successfully completed the Project Stage – II entitled "*Development of PCM (Phase Change Material) based battery cooling system for Electric Vehicle*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/5/20 22

Place: Pune

Prof. S. K. Maknikar

Project Guide



**External Examiner** 



Internal Examiner

Dr. A. M. Kate Principal

Zeal College of Engineering and Research

Narhe, Pune -411041



CERTIFICATE

This is to certify that *Miss. Gayatri Deshmukh, Mr. Akhilesh Jadhav, Mr. Abhishek Kuril, Mr. Prabhanjan Katote* has successfully completed the Project Stage – I entitled "Design, Development and Analysis of zero waste eggs hatching machine" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/5/24 Place : <u>Norhe</u>



Project Guide



Head of Department

Prof. A. V. Karande Project Coordinator

Dr. A. M. Kate Principal





# Zeal College of Engineering and Research Narhe, Pune –411041



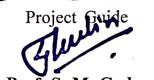
CERTIFICATE

This is to certify that *Mr. Vikas Bhagawan Shinde, Ms. Rani Arvind Salegave, Mr. Aslam Rasul Patan, Mr. Bhushan Ankush Ranpise,* has successfully completed the Project Stage – II entitled "Processing characterization of Mechanical properties of nano based PTFE with ceramic filler" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date: 30 15 124

Place:

Prof. Bharat Aldar



**Prof. S. M. Godase** Head of Department Internal Examiner

takto

Dr. A. M. Kate

Principal

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ZES's Zeal College of Engineering and Research, B.E (Mechanical)

# Zeal College of Engineering and Research

## Narhe, Pune -411041



**CERTIFICATE** 

This is to certify that *Miss. Neha Barkul, Miss.Swati Sanadi and Mr. Saurabh Kharade* has successfully completed the Project Stage – I entitled "**Design and Analysis of the diffuser augmented wind turbine**" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/05/2024 Place : <u>Pune</u>

Prof. Shilpa Gujar Project Guide

Prof. S. M. Godase Head of Department

of. A. V. Karande

Project Coordinator

Ankate

Dr. A. M. Kate Principal

Mechanical Do. N.S. 1/AP 12AR Engineerin

Seal

Dept. of

# Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. (Tejas Shinde, Onkar Sapkal, Ms. Tanaya Hagawane, Sukeshini Kedari)*, has successfully completed the Project Stage–II entitled "(*Development of semi-automated hydraulic murukku's making machine*)" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30 15 / 24

Place : Prof. Pramod Magad Project Guide

Prof. S. M. Godase

Head of Department



Project Coordinator ·

tikate

Dr. A. M. Kate Principal



### Applied Hydraulics & EDUCATIONAL



Educational Trainers & Mfg. Of Hydraulic Cylinders & Power Pack, Precision Engg. Works

Works : Sr. No. 37/2, Bhadavale Vasti, Opp. Anant Industrial Estate, Dhayari Narhe Road, Narhe, Pune - 411 041. E-mail : info.appliedhydraulics@gmail.com appliedhydraulic@rediffmail.com

Ref.:

Date :

#### To Whomsoever It May Concern

This is to certified that Mr.Tejas shinde, Mr.onkar sapkal, Ms.Tanaya Hagawane, Ms. Sukeshini Kedari students of final year BE Mechanical engineering at Zeal college and engineering research Pune have carried out the project entitled Semi- Automated Hydraulic Murukku's Making Machine.

This project has been conducted manufacturing plant of Aplied Hydraulics, Narhe industrial Area, Pune – 411041. The observations recorded and calculation scared out by them have been verified and found correct for the it is being started that manufacturing plant is in the process of implementing they are suggestions on energy conservation.

The conduct of this student during the tenure all the project works observed to be sincere effort taking and responsible. We extend our best wishes for their prosperous career and future ahead. This certificate is being issue to them for their reference, record and academic use.

Authorised signatory,

For Applied hydraulics and educational



# Zeal College of Engineering and Research Narhe, Pune –411041



CERTIFICATE

This is to certify that *Mr. Sahib Singh Rattan, Mr. Prajnesh Umesh Poonja, Mr. Pradumn Roy, Mr. Gaurav Raju Ghodke* has successfully completed the Project Stage – II entitled "Modification and Development of Shock Absorber Test Rig" under my supervision, in the partial fulfillment of Bachelor of Engineering – Mechanical Engineering of University of Pune.

Date: 30/05/2024

Place: Narke, Pupe

Prof. Dr, H.P.Jagtap Project Guide

Prof. S. M. Godase Head of Department

Prof. A.V Karande Project Coordinator

Dr. A. M. Kate Principal

**External Examiner** 



ZES's Zeal College of Engineering and Research, B.E (Mechanical)

## Zeal College of Engineering and Research

### Narhe, Pune -411041



### CERTIFICATE

This is to certify that *Mr. Vaibhav P. Pujare, Mr. Prathmesh B. Poman, Mr. Rohit D. Dhamale, Mr. Siddharth S. Prajapati,* has successfully completed the Project Stage – II entitled "*Design of powertrain for electric Scooter*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :// 30/05/24 Place : Pupe

Prof. V. C. Shinde

Project Guide

Juli M

Prof. S. M. Godase Head of Department

**Prof. V.A. Karande** Project Coordinator

Arkate

Dr. A. M. Kate Principal

**External Examiner** Seal Dr. N.S. KANEAZ of Enc Igineer



#### **CERTIFICATE**

This is to certify that, the project work titled: "DESIGN OF POWERTRAIN IN ELECTRIC SCOOTER" is bonafide work carried out by Mr. Vaibhav P. Pujare, Mr. Prathmesh b. Poman, Mr. Rohit D. Dhamale and Mr. Siddharth S. Prajapati student for the Graduateship Examination of the, under my guidance and direction.

Signature of the Guide:

Name: Mr. Vaibhav Kshirsagar

Address- Plot No. 122, Tiny co-operative Industrial Estate, Undri-Pisoli Road, Pune - 411048

Place: Pune

**Date:** 14 March 2024

## Zeal College of Engineering and Research

Narhe, Pune -411041



**CERTIFICATE** 

This is to certify that *Ms. Sneha S. Gurav "Ms. Aasawari M. Mahagaovnkar*, *Mr .Sambhaji R. Ingale, Mr. Omkar S. Pawar* has successfully completed the Project Stage – II entitled "IoT-Enabled Solar Panel Cleaning System" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :29/5/24

Place : Pune\_

Prof. S. H. Gujar

Project Guide

**Prof. S. M. Godase** Head of Department

Prof. A. V. Karande Project Coordinator

Torkate

Dr. A. M. Kate Principal

External Examiner



# Zeal College of Engineering and Research

# Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr. Mahesh Zirpe, Suyash Kadu, Atharva Thopate, Ganesh Sogam* have successfully completed Project Stage – II entitled "To **Design & Manufacture of Adaptive Cruise Control for Two Wheeler**" under my supervision, in the partial fulfillment of Bachelor of Engineering -Mechanical Engineering of University of Pune.

Date :30/5/2024

Place : Narhe, Pune-41

Prof. V. A. Randive Project Guide

LINKY >

Prof. S. M. Godase

Head of Department

V. Karande Prof. A.

Project Coordinator

Dr.A.M.Kate Principal

po.N.S.KANKA2 Ex

Design Analysis and Development of Twin shredder machine for electronic waste items

Zeal Education Society's Zeal College of Engineering and ResearchNarhe, Pune -411041



#### CERTIFICATE

This is to certify that Mr. Omkar N Nanaware, Mr. Manjush P Nikam, Mr. Abhishek D Shinde, Mrs. Harshada A Khade has successfully completed the Project Stage – II entitled "Design Analysis and Development of Twin shredder machine for electronic waste items" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date: 29/5/24

Place: Pune (Narhe)

Prof. S. M. Godase

Project Guide

Intin

Prof. S. M. Godase Head of Department

Prof. A.V Karande Project Coordinator

Dr. A. M. Kate Principal

Zeal college of engineering and research, Part Dengineering and research, Part Dengineering



# **Mechatol Product Engineering Solutions Pvt Ltd**

OFFICE ADDRESS

KETAN PARK, SECOND FLOOR, OPPOSITE TO SURAJ NAGAR NEAR GURUGANESH NAGAR SHANTIBAN CHOWK

#### KOTHRUD, PUNE -411038

April 29, 2024

#### SPONSORED PROJECT COMPLETION LETTER

' To

Whomsoever It May Concern

This is to inform that following students have successfully completed their industrial project in the name of "Design Analysis and Development of Twin shredder Machine for electronic waste items." In the academic year 2023-2024 with Mechatol Product Engineering Solutions Pvt Ltd, Pune

College Name: Zeal College of Engineering and Research, Narhe

#### **Candidates Name:**

Omkar N Nanaware
 Manjush P Nikam
 Abhishek D Shinde
 Harshada A Khade

During their tenure we found above students reliable and responsible We wish them success in all their future endeavours.

Mr. Anand Bhise Director Mechatol Product Engineering Solutions Pvt Ltd Pune, India

# Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041

CERTIFICATE

ER

This is to certify that *Mr. Rushikesh B. Kolte, Mr. Kunal G. Kongari, Mr. Soham D. Kumbhar, Mr. Omkar A. Patil,* has successfully completed the Project Stage – II entitled "*Testing and Analysis of Polymer Matrix Composite material using Jute and glass as fiber material for Prosthetic Leg Socket*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30/5/2024 Place: Pune. Prof. A. V. Karande Prof. Dipak Wagh **Project Coordinator** Project Guide - Thekate Dr. A. M. Kate Prof. S. M. Godase Principal Head of Department Do.N.S. KANKUR External Examiner

# Zeal College of Engineering and Research Narhe, Pune -411041



CERTIFICATE

This is to certify that *Mr.Bharat Navnat Mahajan*, *Mr.Onkar Shrikant Kshirsagar*, *Mr.Ganesh Ramchandra Thite*, has successfully completed the Project Stage – I entitled *Design*, *Analysis And Manufacturing Of Automated Precision Driling Machine* under my supervision, in the partial fulfilment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30 /05/2024

Prof.

Project Guide

Nil

Prof.JS.M. Godase

Head of Department

Place : Northe pune

Prof. A. V. Karande Project Coordinator

Kate

Dr. A. M. Kate Principal



ZES's Zeal College of Engineering and Research, B.E (Mechanical)



# HIRA AUTOMATION PVT. LTD.

COMPLETE ENGINEERING SOLUTIONS

Date: 24 April 2024

This is to certify that:

Mr. Bharat Navnath Mahajan

Mr. Onkar Shrikant Kshirsagar

Mr. Thit Ganesh Ramchandra

(BE - Mechanical Department)

#### Zeal college and engineering research, Pune

#### Sub: Sponsorship Letter

Have successfully completed the Sponsorship Project on Automated Precision Drilling Machine at Hira Automation Pvt. Ltd., Sr.No.60/1, Jambhulwadi Rd, Opp. Viva Sarovar, Siddhivinayak Society, Pune, Maharashtra 411046 Company. Their dedication, hard work, and innovative contributions have significantly contributed to the successful implementation of this project.

We commend their commitment to excellence and commendable teamwork throughout the duration of this project. May this achievement be a steppingstone to further success in their academic and professional pursuits.

Thanks & Regards,

Mr./Indrajit Gaikwad

(Director)



Signature

Email : sales@hiraautomation.com

Hira Automation Pvt. Ltd.

## Zeal College of Engineering and Research

Narhe, Pune-411041



### CERTIFICATE

This is to certify that Mr. Makarand Vijay Mane, Mr. Nagesh Dattatray Mali, Mr. Pavan Sambhaji Mandavkar, Mr. Rushikesh Mahesh Mane have successfully completed the Project Stage - II entitled "Design and Manufacturing of Automated Vertical Storage System for Industry" under my supervision, in the partial fulfillment of Bachelor of Engineering -Mechanical Engineering of University of Pune.

Date :30/05/2024

Place : Pune Prof. L. B. Mali

Project Guide

less's

Prof. S. M. Godase Head of Department

Prof. A. V. Karande **Project Coordinator** 

Dr. A. M. Kate Principal

**External Examiner** DS. N.S. KATINA

Hege ,

# Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune – 411041



CERTIFICATE

This is to certify that Mr. Zade Pritesh Prasad, Mr. Todkar Atharva Deepak, Mr. Patankar Ayush Ashish, Mr. Thakur Neeraj Satyanarayan have successfully completed Project work entitled "Automatic Measurement of Payload for prevention of Overloading in Heavy Vehicles" under my supervision, in the partial fulfillment of Bachelor's degree in Mechanical Engineering of the Savitribai Phule Pune University.

Date:





Prof. S. S. Borade

Guide

External Examiner

Prof. S. M. Godase
 Head of the Department

Dr. A. M. Kate Principal, ZCOER



Zeal College of Engineering and Research

Narhe, Pune -411041



## CERTIFICATE

This is to certify that *Mr.Chaudhari Prajwal, Miss.Kalambe Madhura* and *Miss.Shinde Aditi* has successfully completed the Project Stage – II entitled "*Automated Quality Inspection Machine Using Computer Vision*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of the University of Pune.

Date: 30<sup>-1h</sup> May'24 Place: <u>Pune</u>

Prof. N.B.Surwase Project Guide

M.Godase Prof.

Head of Department

.Karande Project Coordinator

Achete

**Dr.A.M.Kate** Principal

External Examiner

External Examiner DS. N.S. KATIWA

## Zeal College of Engineering and Research

Narhe, Pune-411041



### CERTIFICATE

This is to certify that *Mr. Sonavane Raviraj Bhatu, Mr. Sonavane Rohit Shukleshwar, Mr. Kagwade Anant kumar,* have successfully completed the Project Stage – II entitled "*Thermoelectric Generation and Thermoelectric Cooling Battery Cooling System*" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date : 30/05/2024

Place : Pune



**Prof. U.K.Gadpayle** Project Guide

Prof. S. M. Godase Head of Department

Prof. A. V. Karande

**Project Coordinator** 

Ackte

Dr. A. M. Kate Principal

Do. N.S. YaAnkAR **External Examiner** 



Date: 10/04/2024

To,

The Department of Mechanical Engineering,

Zeal College of Engineering, and Research Pune.

Sub.: Completion & Validation of Project Work for Final year Project (Mechanical Engg.)

#### Respected Sir,

This is to certify that Sonawane Rohit Shukleshwar, Sonawane Raviraj Bhatu & Kagwade Anant Kumar. BE (Mechanical Engineering) Student from ZEAL College Of Engineering Pune have completed the project work entitled "Thermoelectric Generation and Thermoelectric Cooling Battery Cooling System" Used For battery cooling effect on electrical vehicles. in our company from 10th October 2023 to 05th April 2024 as part of their curriculum under our supervision, in the partial fulfilment of Bachelor of Engineering in Mechanical Engineering of University Of Pune.

We have noticed that, during the period, they have shown keen interest in their assigned work and were also regular in attendance. The data provided for the project by the students is satisfactory. This project is completed and validated by our engineer with the students successfully.

Thanks and Regards,

Mr. Vitthal Kakade (Mgr - Vehicle Assly) For Bajaj Auto Limited Authorised Signatory Authorised Vide Resolution dtd.25.01.2023

Mr. Vitthal Kakade

(MANAGER)

Bajaj Auto Limited Chakan, Pune

Zeal Education Society's Zeal College of Engineering and Research Narhe, Pune -411041

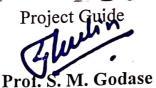


**CERTIFICATE** 

This is to certify that Mr. Akash Bhingare, has successfully completed the Project Stage - II entitled "Effect of silica addition on Mechanical Behaviour of Tyre Material" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of Savitribai Phule University of Pune.

Date :# 30-5-24 Place :

Dr. P.P. Ritapure



Head of Department

of. A.V. Karande

**Project Coordinator** 

Dr.A.M.Kate

Principal

Seal Dro. N. J. UAPKed2 External Examine

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# Zeal Education Society's Zeal College of Engineering and Research

## Narhe, Pune -411041



# CERTIFICATE

This is to certify that Shubham Ekawade, Prajwal Patil, Rushikesh Gavali, Shreenarayan Sutar, has successfully completed the Project Stage – II entitled "**Design analysis & Development of Slat Conveyor**" under my supervision, in the partial fulfillment of Bachelor of Engineering - Mechanical Engineering of University of Pune.

Date :30 15724

Place : Pune M

Prof. S.M. Godase Project Guide

in

Prof. S. M. Godase Head of Department

**Prof. A. V. Karande** Project Coordinator

Achte

Dr. A. M. Kate Principal

