ELECTRONICS

DEPARTMENT

MAGAZINE

2022-23

Principal's Desk

Dr. Lakshmappa Ragha is a Senior Professor and has been working as Principal at Terna Engineering College, Nerul, Navi Mumbai. He was a research scholar at BARC, Mumbai from 2007 to 2011 for his research study on "Technological, Environmental and Biological aspects of Microwave and communication fields".

His primary research interest is Microwave bioeffects and numerical simulation of radiating systems. He received his Ph.D. Degree in Electronics Engineering from University of Mumbai in 2011 and has been involved in teaching and administration.

He has 32 years teaching experience at different institutions. His teaching expertise covers a wide range of core subjects. He has huge enthusiasm for his subjects, and always tries to focus on a 'roadmap' for each course to encourage learning while being as organized as possible for all classes. He is a member of many professional societies and supervised a number of research projects at graduate, post graduate and Doctoral studies. He has published more than 40 research papers in international journals and conferences.

Dr Lakshmappa Ragha
Terna Engineering College
PRINCIPLE

HOD's Desk

As the Head of the Department of Electronic Engineering, I am delighted to share some insights about this exciting and enhancing field.

Electronic Engineering is a highly diverse and ever-evolving field that deals with the design, development, and maintenance of electronic circuits and systems. The field's range is extensive, encompassing anything from the creation of consumer electronics, telecommunications networks, and medical devices, to the design of microprocessors and semiconductors. The world has been revolutionized by electronic engineering, and its applications are ubiquitous in our daily lives.
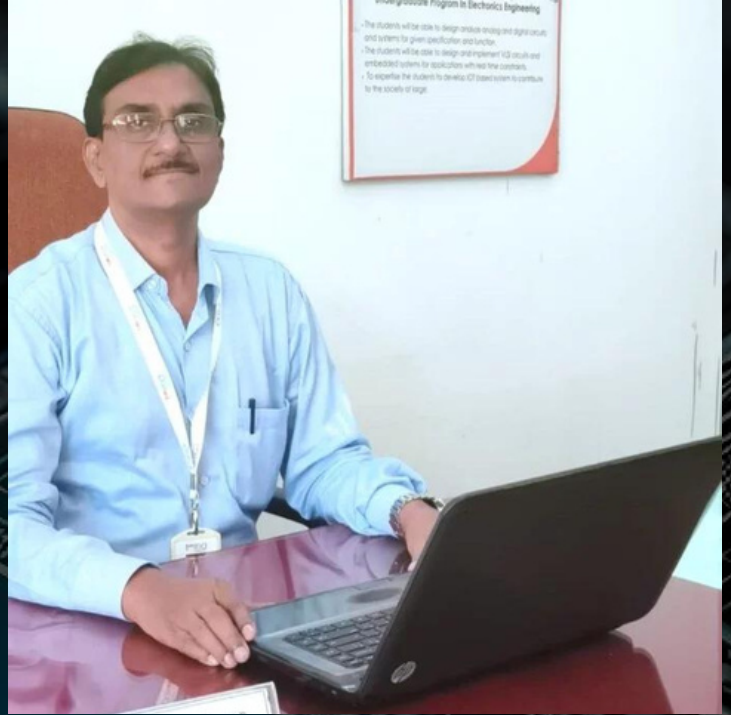
The versatility that electronic engineering offers is among its many noteworthy benefits. Graduates of this program can pursue a range of careers in various sectors, including research and development, manufacturing, telecommunications, aerospace, and the automotive industry. Furthermore, electronic engineering graduates can also opt for a career in academia, where they can contribute to the development of new technologies and mentor future generations of engineers.

The job opportunities in electronic engineering are vast and varied. Due to the increased use of electronic systems in all sectors, there is a high demand for electronic engineers not only in Indian industries but foreign industries as well. Electronic engineers can work in design and development of electronic systems, manufacturing, testing and maintenance of electronic equipment, and in research and development.

In conclusion, Electronic Engineering is a highly sought-after field that offers significant job opportunities and career growth. As a department, we are committed to providing the best possible education and training to our students to ensure they are ready to tackle the challenges of this dynamic and promising field.

Sincerely,

- Dr. Balaji G Hogade

Magazine Coordinator

I congratulate the students of TEC ELECTRONICS 2022-23 who have taken the initiative and have contributed to this edition of the department magazine. It's a great pleasure to present this issue of Department magazine. Magazine of this kind provide an opportunity to the engineering students to express their latent talent, ideas and thoughts in the form of articles, poems, views about the life and experiences inside and outside the campus. It shows that technical minds are no less when it comes to creative writing and expressing their philosophical and technical minds. The clean green eco-friendly nature of the magazine has been a remarkable concept.

It has been a wonderful experience to work with the editorial team and to see the creations taking shape. I thank you all for your contributions. Thanks to our Principal, HODs, Faculty members and staff for the contributions. I sincerely hope that you enjoy reading this magazine.

Asst.Prof.Amit Deshmukh M.E, PhD (perusing)
Magazine co-ordinator and Training placement Dep.

MAGAZINE COMMITTEE

SURAJ SHARMA
BE

SURAJ SHARMA
TE

ADARSH NAYAK
SE

POOJA KUMAWAT
SE

UDAYKUMAR KOTA
SE

DEEP NAIK
TE

MISSION

"

To continuously strive for the total development of students by Educating them in "State-of-the-Art" technologies & helping them imbibe professional ethics and Societal Commitments, so that they emerge as competent Professionals to meet the global Challenges.

"

VISION

" "

To be recognized by the society at large as an excellent department offering quality education in Electronics Engineering.
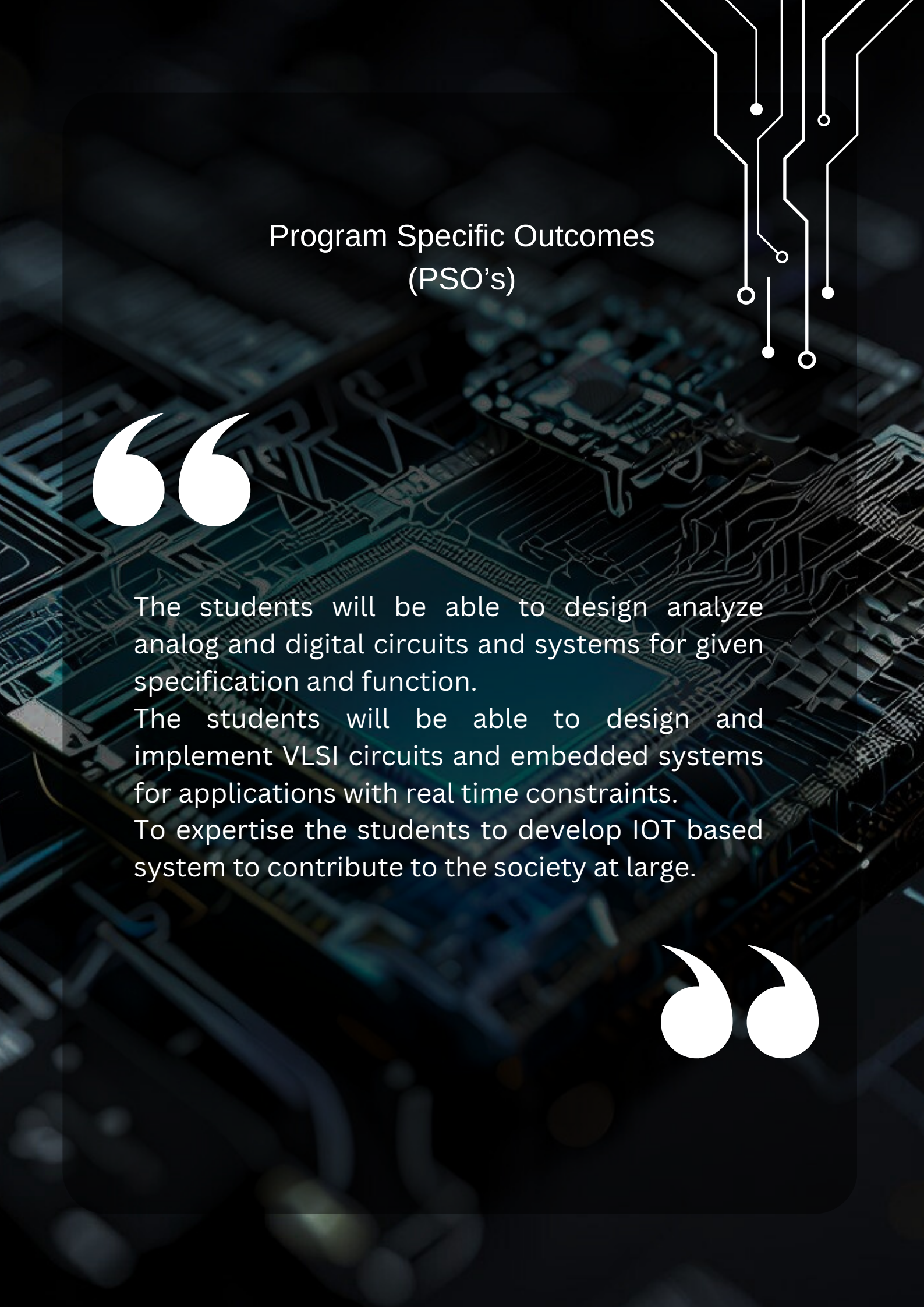
" "

Programme Educational Objectives (PEOs)

"

To Prepare the Learner with a sound foundation in the mathematical, scientific and engineering fundamentals.

To motivate the Learner in the art of self-learning and to use modern tools for solving real life problems.

To include a professional and ethical attitude, good leadership qualities and commitment to social responsibilities in the Learner's thought process.

To prepare the Learner for a successful career in Indian and Multinational organizations.

"

Program Specific Outcomes (PSO's)

"

The students will be able to design analyze analog and digital circuits and systems for given specification and function.

The students will be able to design and implement VLSI circuits and embedded systems for applications with real time constraints.

To expertise the students to develop IOT based system to contribute to the society at large.

"

Program Outcomes (POs)

- POs describe what students are expected to know or be able to do by the time of graduation from the program. Graduate students in Electronics Engineering should have,
- Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
- Problem analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching sub stained conclusions using first principles of mathematics, natural sciences and engineering sciences.
- Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, social and environmental considerations.
- Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- Modern tool usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of limitations.
- knowledge of, and need for sustainable development.

- The engineer and society: Apply reasoning informed by the contextual knowledge to assess social, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the
- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
- Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

FACULTY

Dr. Balaji Hogade
Head of Department & Professor

He received Ph.D. in EXTC (Smart antenna for wideband wireless Networks) from NMIMS Mumbai in 2014, M.E. in Power Electronics from Gulbarga University, Karnataka, in 1999, B.E. in Electronics from Marathwada University Aurangabad in 1991. He is Head and Professor in Electronics Engineering Department in Terna Engineering College, University of Mumbai; He has guided number of projects and thesis in graduate and post-graduate level program. Four students have completed their Ph. D. under his guidance. Presently he is guiding 2 Ph. D. students in Mumbai University. He has evaluated 2 Ph. D. Thesis from Savitribai Phule University, Pune.He has produced several national and international publications. He has worked as a Member of BOS in Electronics Engineering and Electrical Engineering in University of Mumbai. His research interests include Wireless Network, Smart Antenna and Power Electronic and Drives.

Prof. Kanchan Gorde
Assistant Professor

Having 17+ years of experience of teaching. Specializing in Embedded and VLSI Design Circuit uses that experience to teach and motivate students to enhance their skill for real world applications. Received NPTEL Discipline star recognition award and also Certificate of Excellence for ICT for Education-Teaching Learning process from MHRD-IITB. Also publish papers in International journals and international and national conferences and receive Best Paper Award in OTCON 2.0, 2023.
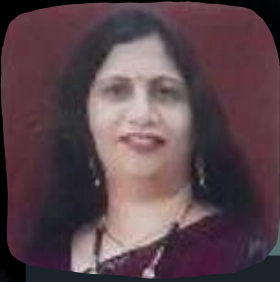
Prof. Rupali Thorat
Assistant Professor

I completed ME Electronics in Aug 2014, attended 2 Conferences during this time as well as published 3 papers in Journal and presented 1 paper in Conference, also attended 9 FDP programs, organized 2 FDP programmes, 2 training and Successfully completed 6 Online Certification courses, during last 7 Years. I also attended few online seminars on different topics as well as taught different subjects in Electronics. I have total experience of 20 years in teaching Field.

Prof. Amit Deshmukh
Assistant Professor

Asst. Prof. Amit Deshmukh, ME in Electronics and Telecommunication, PhD [Appear]. Currently, I am working as an Assistant professor in Terna engineering college, Nerul. I am having 17 years of teaching experience. My area of interest is wireless communication, Digital electronics and control system. I am working in the area of wireless communication from last 3 years and published many papers, National and international conferences. I have also attended many FDP, Workshop.

Prof. Raosaheb Waghmare
Assistant Professor

I Raosaheb Waghmare completed my UG from Dr. B.A.M.U Aurangabad and PG from Mumbai University. I am having 25+ years of experience which include industrial and academic both. I have published research papers during my PG research work. I am carrying various departmental responsibilities includes lab in charge, class advisor etc.

Prof. Maruti Limkar
Assistant Professor

Completed ME in Power Electronics from Gulbarga University in JAN 2003.
3 years handeled charge of Controller of Examination (TEC).
2 years handeled charge of HOD of Electronics Engineering Department (TEC).
More than 1500 students under graduated .
More than 25 students completed Master degree project under my guidance.

Prof. Shailaja Kadam
Assistant Professor

Presently working as an Assistant Professor, in the Department of Electronics Engineering, Terna Engineering College, Navi Mumbai and working as department exam coordinator. My area of interest is signal processing and Communication Engineering.

Prof. Prachi Kamble
Assistant Professor

ME in Electronics and Telecommunication. Currently, I am working as an Assistant professor in Terna engineering college, Nerul. I am having 9 years of teaching experience. My area of interest is wireless communication and IOT. I am working in the area of IOT from last 3 years and published many papers on IOT in National and international conferences. Published One patent on IHM-SYSTEM: INTELLIGENT HEALTH MONITORING SYSTEM in July 2020. I have received appreciation certificate as a Mentor from Padmabhushan Dr. Vijay Bhatkar in October 2019. I have also conducted and organized many workshops on Internet of things for students and Faculty.

Prof. Varsha Pande
Assistant Professor
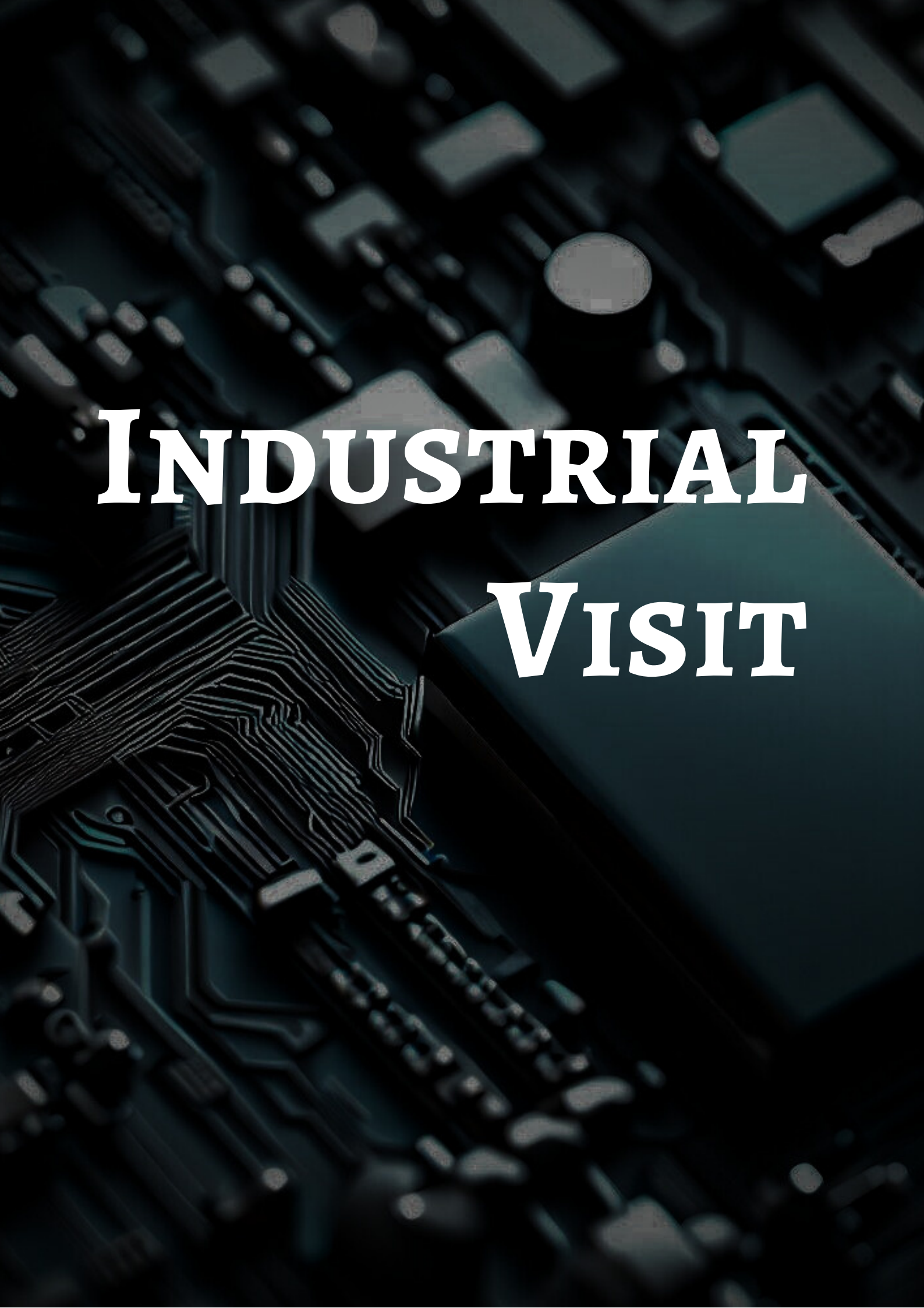
Industrial Visit

# INDUSTRIAL VISIT
REPORT
AUTOMATION EXPO 2022

An Industrial visit to "AUTOMATION EXPO 2022 BEC, Goregaon (E), Mumbai", was organized by the Electronics Department of TEC NERUL on Friday, 19th August 2022. Twenty one second year [SE], Twenty two Third year [TE] Electronics Department students and one faculties visited to AUTOMATION EXPO 2022 BEC, Goregaon (E), Mumbai. Automation Expo is India's biggest and South East Asia's 2nd biggest Exhibition, to interact with the Industry to understand current market scenarios, latest most-demanding technologies & criteria for selection etc. In this visit students were very eagerly waiting for listening to industrial higher authorities.

26/08/2022

In the session We divided our students in the batch of 20 students per batch for the visit and the interaction with the industry person. The Technical Head conducted very informative session for the students. Also he motivated to the students to select their domain and area of interest. He also guided the students to select the areas Automation in PLC, SCADA, HMI etc. He also guided on PLC technology which is their working technology.
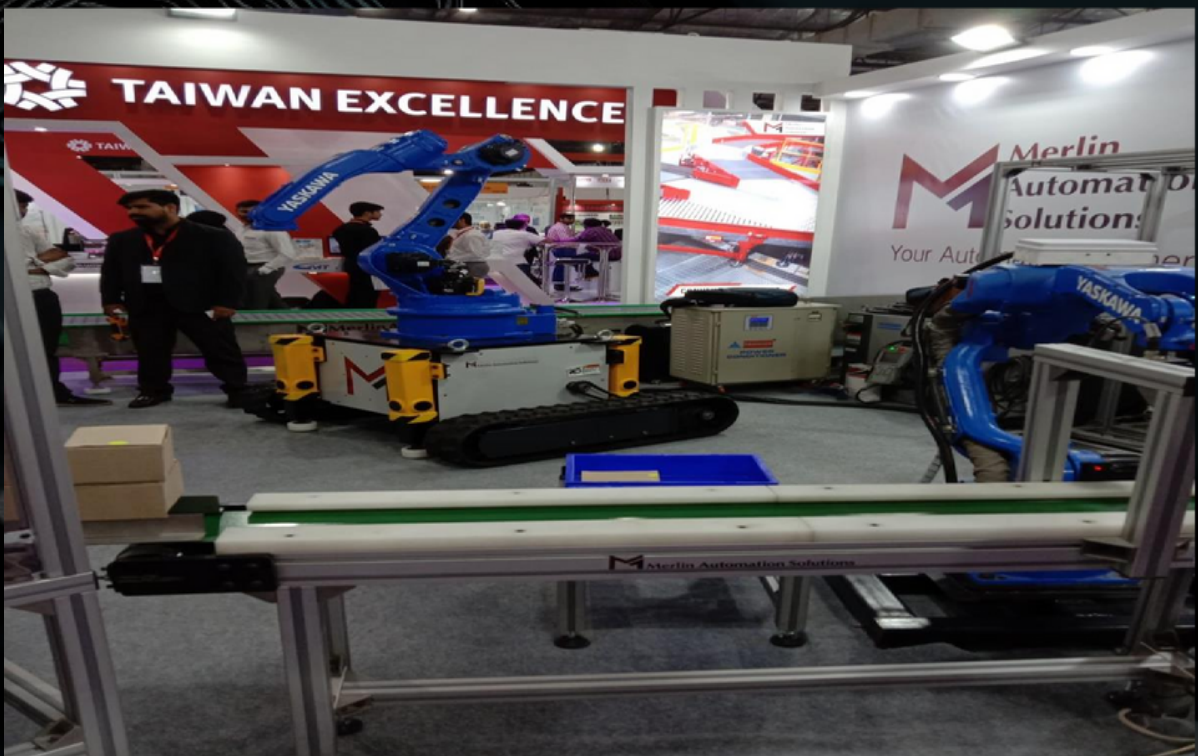
The session was concluded with Question- Answer session. Many of the students asked different questions to the Technical Head on current demanding technologies, market scenarios etc. and he cleared all the doubt and myths which was in students mind about the technologies and software sector. All students were satisfied after the session. Company motivated to the students.

Finally, we left the premises, It was an informative, interesting and a successful visit. As students of Electronics Department they understand a live Software applications and importance of technology selection, etc. We express our thanks to the Technical Head and all team members of AUTOMATION EXPO 2022 BEC, Goregaon (E), Mumbai, who spent their valuable time for us. We also thank to our respected Director Mr.Malhardada Patil saheb, C.E.O Mr. P T. Deshmukh sir, Principal Dr.L.K.Ragha and HOD Dr.B.G.Hogade who motivate us to arrange such an informative program. Lately we request you to arrange more industrial visit in the future for the students which will be helpful for the students and help to train our students.

Asst.Prof. Amit Deshmukh
Industry visit coordinator
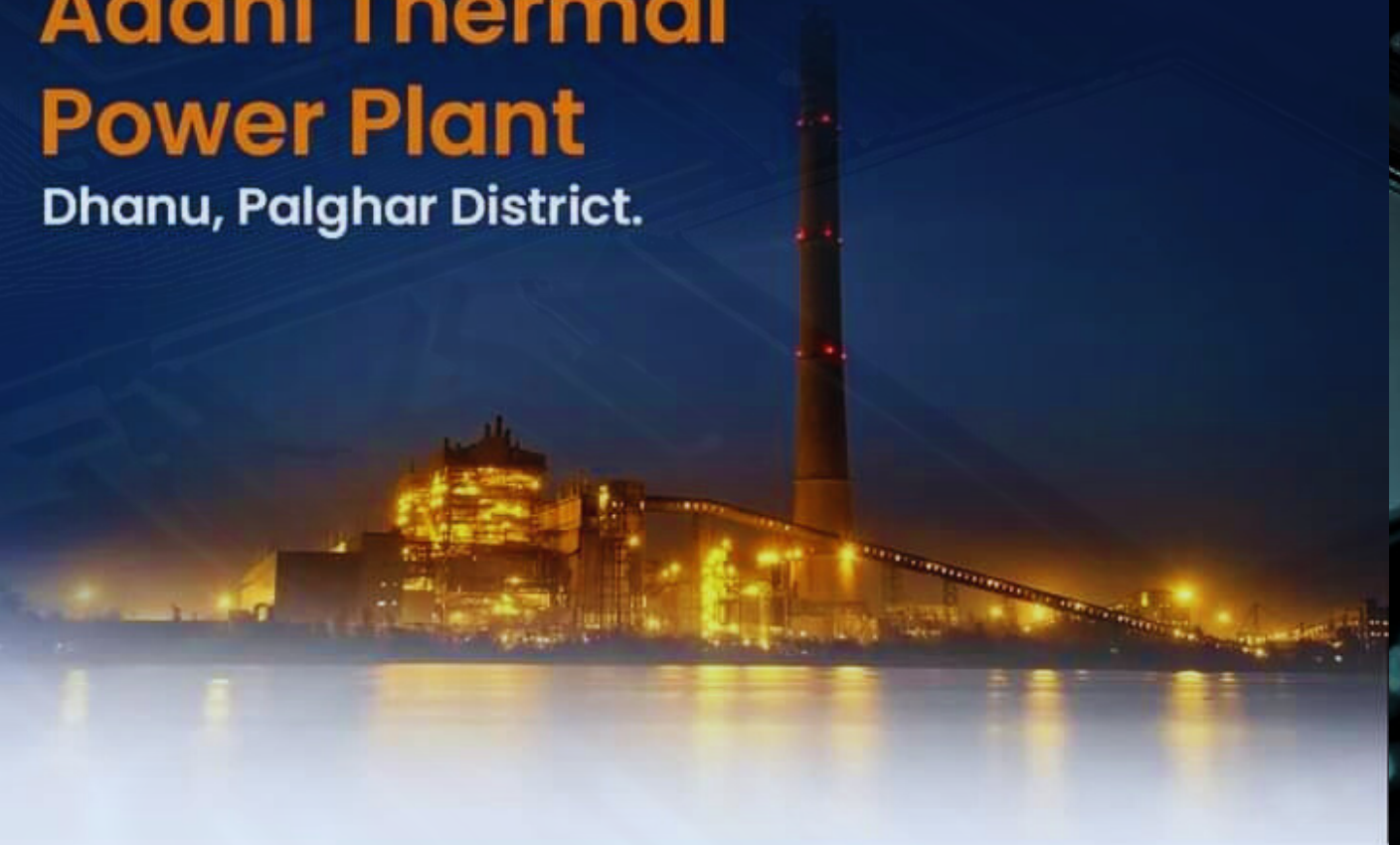Electronics Dept.
TEC, Nerul, Navi Mumbai.

INDUSTRIAL VISIT
REPORT
2023

Industrial Visit – Adani - Dahanu Thermal Power Station (ADTPS)

Event Title: Power Plant

Event Date: 2nd March 2023

Event Conduction Duration:7.00 AM to 10:00 PM

Event Venue:

 Event Resource Person
Details: Mr. Premnath Raut,
         Project Head, Adani Dahanu Thermal Power
         Station,9372683392

Name of Event Coordinator with contact details: Amit Deshmukh (9987908182)

Event Outline & Outcome of the event:

Objective of Program:

 The industrial visit was organized for students to learn about differentsections of a thermal power plant and practically observe the concepts they have learnt in theory. Adani - Dahanu Thermal Power Station (ADTPS), consisting two units of 250 MW, is one of the best power generation plants in the country, which commenced its commercial operations in January 1996. Recognized with innumerable awards, this power plant is known for its distinctive features that set it apart from others in terms of technological innovation, superior performance and continuous sustainability for a longer period. Adani - Dahanu Thermal Power Station has implemented integrated management systems (IMS) in its processes and is certified for quality management, environment management, occupational health and safety assessment studies, social accountability management, information security management, energy management and accreditation for ADTPS coal testing laboratory.

Output of Program:

Students observed and understood all the details of a Thermal power plant structure and working. They visited different sections like Imported Coal Section, Quality Checking of Coal, Actual Operation of Power Plant, Turbines, Exciter, Boiler, Ash handling plant, Coal Handling Plant, Conveyor Belt, 220 MV Distribution etc. The plant is equipped with the highest chimney in Asia. Students also observed different Control panels and the control section.

Number of Students: 48 and 3 staff members

Event Photos

Asst. Prof.Mr.Amit A Deshmukh
Industrial Visit coordinator

2022

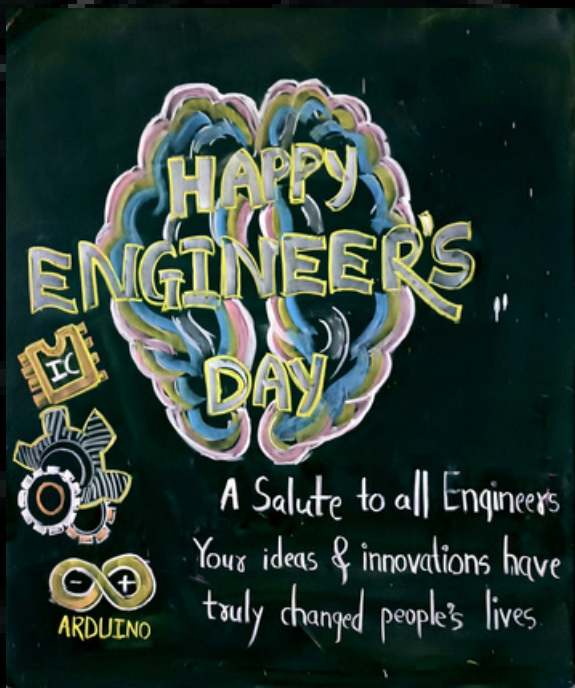## DEPARTMENT OF ELECTRONICS ENGINEERING

ENGINEER'S DAY REPORT

"EVERY MAN WHO HAS BECOME GREAT AWES HIS ACHIEVEMENT TO INCESSANT TOIL"
-SIR M.VIVESVARAYA

![Terna logo]

Engineer's Day Report- 2022

A little bit about e

The Electronics Department of Terna College Of Engineering celebrated Engineer's Dayy on 15 Sep, 2022 along with the rest of the nation applauding the engineers of the country for their work. The Engineering Community across India is celebrating Engineer's Day on 15 september every year as a remarkable tribute to the greatest Indian Engineesr Bharat Ratna Sir. Mokshagundam Visvesvaraya (popuarly known as Sir MV). He is held in high regard as pre-emient engineers of India. "Role of Engineers' in developing India" was the theme of the event. This event is planned to create awareness to the student and faculties on the Role of engineers in the development of our nation. On this day, Dr. Balaji Hogade, HOD of the Department of Electronics Engineering gave a lecture on the aforementioned subject. Studentst from SE, TE, BE and all teaching faculty members of Electronics Department had participated in commemorating the fellow engineers.

Inauguration started by the welcome speech by our host. Our HOD, Dr. Balaji Hogade explained wonderfully about "Role of Engineers in developing India," which greatly motivated the students and was met with an outstanding applause.
 Many participants aka students delivered their speeches and shared their opinions on Engineer's Day, careers & life among students and about what future brings along.
 Teaching faculties from SE, TE & BE also particiapted and delivered thier thoughts, ideas and boosted the moral of students.

QUOTE

No one person can shape the life of another . Your success and happiness depends upon own self. Think for yourself and have a plan of life.
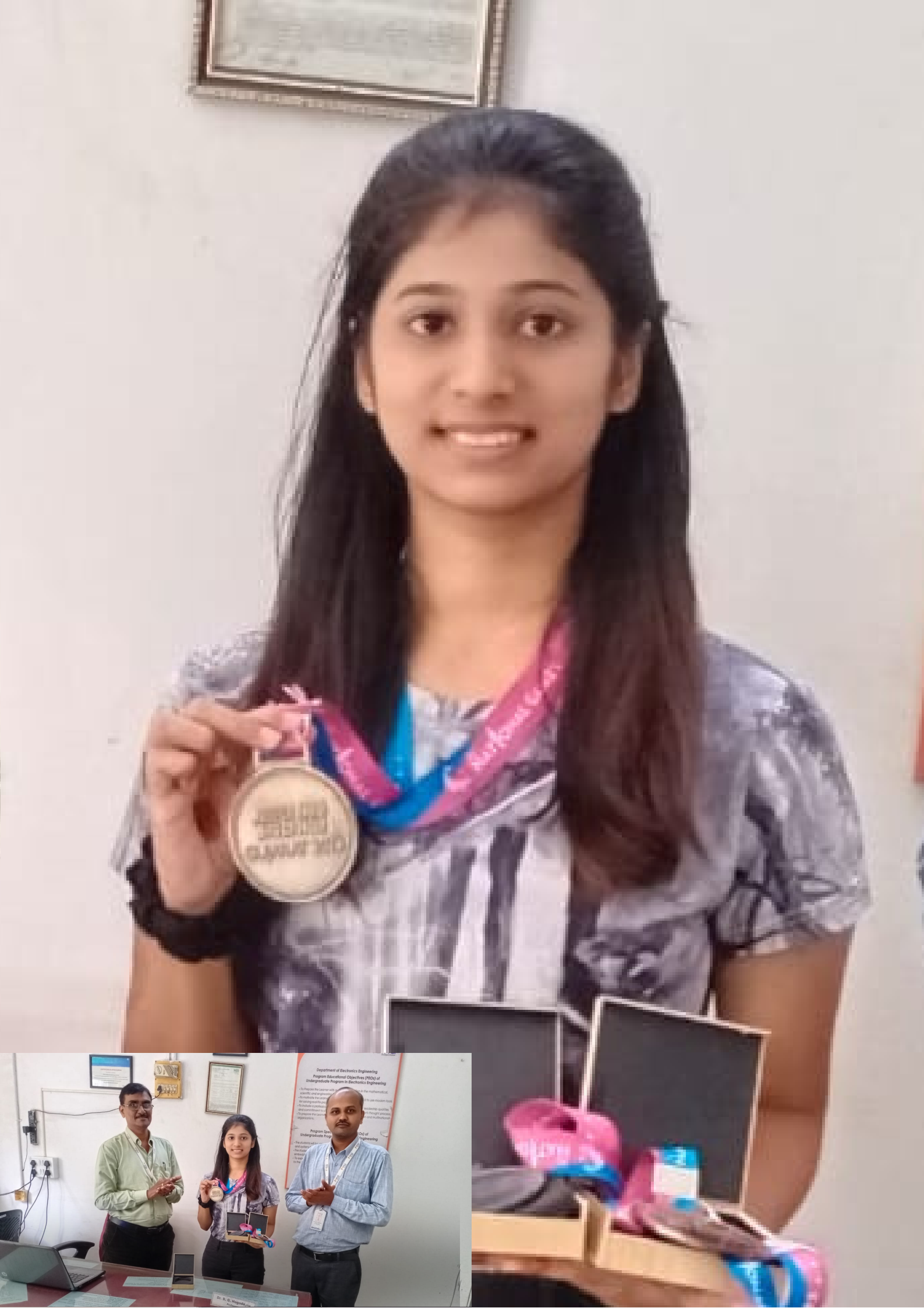
~Sir M Visvesvaraya.

The Engineer's day celebration was concluded with our HOD expressing gratitude and we all enjoyed a hot cup of tea. This function will truly be memorable in our lives.

Mr. Suraj Sharma
Miss. Subhashree Sampathkumar

Class Advisor
Asst Prof Amit Deshmukh

Sports Activities

Cultural Activities

Title: Building a Smart Home with Arduino: Your Guide to Home Automation

Introduction:
Welcome, tech enthusiasts, to the world of smart living! In this blog, we will embark on an exciting journey to create our very own home automation system using Arduino. Imagine controlling your lights, fans, and appliances with just a smartphone or even your voice – it's the future of living, and you can build it as a college student.

What is Arduino?
Before we dive into the project, let's quickly understand what Arduino is. Arduino is an open-source electronics platform based on easy-to-use hardware and software. It's perfect for beginners and seasoned hobbyists alike, allowing you to create interactive electronic projects with relative ease.

Getting Started:
To get started, you'll need the following components:
Arduino Board (e.g., Arduino Uno or Arduino Nano)
Relay Modules (for controlling appliances)
Bluetooth Module or Wi-Fi Module (for smartphone control)
Sensors (optional, for automation triggers)
Power Supply and Connecting Wires
Step 1: Setting Up Arduino:

The first step is to set up your Arduino board. Connect the relay modules to the Arduino pins, and ensure proper wiring connections. You can find detailed pinout diagrams in the Arduino documentation or online resources. Don't forget to power up your Arduino!

Step 2: Controlling Lights and Fans:
With the relay modules in place, you can now control lights and fans using Arduino. Write a simple Arduino code to switch the relays on and off, and thus control the corresponding appliances. Test it out and see your first automation in action!

Step 3: Adding Smartphone Control:
Let's take it up a notch! Incorporate a Bluetooth or Wi-Fi module (like the HC-05 or ESP8266) to your Arduino setup. This will allow you to control the home automation system through your smartphone. You can either create a custom app or use readily available apps like Blynk or MIT App Inventor to build an intuitive control interface.

Step 4: Implement Voice Commands (Optional):
Want to impress your friends and family? Why not add voice command functionality to your home automation system? Integrate a voice recognition module like the EasyVR Shield or use cloud-based speech recognition APIs. Now, you can simply say, "Turn on the lights," and watch your room light up!

Step 5: Automation Triggers (Optional):

Take your smart home to the next level by incorporating automation triggers. You can use various sensors like motion detectors, temperature sensors, or even LDRs to create automated responses. For example, turn on the lights when someone enters the room or adjust the fan speed based on the room temperature.

Conclusion:

Congratulations! You have successfully built your Arduino-based home automation system, giving your college room a touch of futuristic technology. From controlling lights and fans with your smartphone to adding voice commands and automation triggers, you've explored the endless possibilities of Arduino.

As a student, this project serves as a fantastic learning experience, allowing you to apply electronics and programming knowledge in a practical and exciting way. So, let your creativity flow, continue exploring the world of Arduino, and build more innovative projects to make life smarter and more convenient!

Remember, the key to mastering Arduino lies in continuous experimentation and learning. So, embrace the challenge, and let your imagination soar in the world of home automation. Happy tinkering!

Om Talekar
SE Electronics Dept

Surakshita Thandul

Gayatri Bhosale

Shot on OnePlus
By Renuka

REVIVE 2023