

DEC 2022

VIDYUT

NEWSLETTER FOR DEPARTMENT
OF ELECTRICAL ENGINEERING



CONTENTS

Biannual Newsletter of Department of Electrical Engineering



DEPARTMENT INFORMATION

- From the desk of HOD. 1
- Vision, Mission, PEO 1
- Brief About department 2

PROJECTS

- ACADEMIC PROJECTS 3-5
- R & D Activities 6



STUDENTS ARTICLE

- FUTURE OF ELECTRIC VEHICLES -7
- SKILLS WHICH HIGH-LIGHTS ENGINEERS-8

PROGRAMS AND PUBLICATION

- Journal Publication- 9
- Program Organized- 9-10



VIDYUT

Biannual Newsletter of Department of Electrical Engineering
Rajarambapu Institute of Technology, Rajaramnagar, Islampur,
Maharashtra

CONTENT OF THE PAGE

From HOD Desk
Vision, Mission & PEOs

VISION , MISSION

PEO

“DONT
STOP
UNTIL
YOU
PROUD”

Nelson Mandela

From HOD Desk

Dear Friends,

It's immense pleasure to present this biannual newsletter "Vidyut". Electrical Engineering department is the dynamic and vibrant department with the blend of young and experienced Faculty. Department is actively involved in academic as well as research work



in current areas of Electrical Engineering and multi-disciplinary streams. The department has well-equipped labs with the state of the art software, hardware, and machinery. The faculty members are constantly publishing technical papers in national and international journals and conferences. Also, they are involved in consultancy activities. The department is fortunate to have dedicated teachers, devoted students, and committed supporting staff and expert technical staff. Especially, I congratulate my students to participate in various extra-curricular activities, research work, and competitive exams. My best wishes to all for their bright carrier and successful life.

Dr. V. N. Kalkhambkar

Vision, Mission & PEOs

Vission

Develop globally competent electrical engineers to serve future needs and challenges of the society.

Mission

To impart technical education and research skills in close interaction with industry and society for the development of young minds, sensitive to ethical and environmental issues.

Programme Educational Objectives(PEOs)

PEO 1: Apply knowledge and skills to pursue successful career in power sector, manufacturing and process industries.

PEO 2: Utilize expertise to become an academican, practicing engineer and entrepreneur to serve the society, ethically and responsibly with concern to environment.

PEO 3: Engage in lifelong learning to seek excellence in professional life.



Department of Electrical Engineering

BRIEF ABOUT DEPARTMENT:

The department is involved in energy auditing work to cater to the needs of local industries. Also promotes the use of renewable energy. The department has well-equipped laboratories. It has a laboratory of 'Automation & control' equipped with PLC trainer kit, SCADA & HMI especially for final year B. Tech students. E-Yantra is a central facility located in the department. Newsletter-'Vidyut' is published half-yearly. One of the strengths of the department is different Papers are published in reputed journals, and international & national Conferences by faculty, PG and UG students. The main features are MOU's with different industries, Industry-Institute interaction for training as well as placement activities, GATE coaching & Guest Lectures. The scope of employment is in various organizations like the Indian Army, Reliance Energy, TATA Power, GSW, Bharat Forge Ltd., Simens and Syntel and Government Organizations like DRDO, ISSRO, and DAE. The first batch is passed out in May 2008 with 90% placement in reputed companies like Reliance Energy, JSW, Bharat Forge, Uttam Steel, Ocean Shipping company etc. with the Salaries ranging from 1.85 to 4.5 lakh per annum.

No
resistance
can drop
our
potential

One of the strengths of the Department is paper publication in reputed journals, international & national Conferences by faculty, PG, and UG students. The main features are MOU's with different industries, Industry-Institute interaction for training as well as placement activities, GATE coaching & Guest Lectures. The scope of employment is in various organizations like the TATA Power, GSW, Bharat Forge Ltd., Siemens and Syntel, TCS, Cognizant, KPIT, Capgemini, Wipro, HCL technology, SLK software, torrent power, and Government and semi-government organizations like DRDO, ISRO, PGCL, Railway, Mahadiscom, Mahatransco, and Mahagenco Pvt. Ltd.

ACADEMIC PROJECTS

Capstone Project



1

PROJECT NAME -

Automation in irrigation

FACULTY NAME -

Dr. P K Katti

2

PROJECT NAME -

Artificial intelligence based
self driving vehicle

FACULTY NAME -

Dr. V N Kalkhambkar

3

PROJECT NAME -

Regenerative braking of
electric bicycle using
battery-supercapacitor
system

FACULTY NAME -

Dr. V N Kalkhambkar

4

PROJECT NAME -

Comparative analysis of
PWM techniques for
Multilevel inverter

FACULTY NAME -

Prof. K M Nathgsovi

5

PROJECT NAME -

Online monitoring
submersible inspection robot
for internal inspection of
power transformer

FACULTY NAME -

Prof. A J Patil

6

PROJECT NAME -

Smart ventilator system
using Arduino

FACULTY NAME -

Dr. D B Talange

7

PROJECT NAME -

Implementation of IOT
technique on distribution
substation for energy
management

FACULTY NAME -

Prof. A S Pandey

8

PROJECT NAME -

Making prototype for coded
electricity

FACULTY NAME -

Dr. A R Thorat

9

PROJECT NAME -

Automated irrigation
system to provide optimum
solution for efficient use of
water and electricity

FACULTY NAME -

Prof. R A Metri

ACADEMIC PROJECTS

Capstone Project



10

PROJECT NAME -

IOT based battery management system for electric vehicle

FACULTY NAME -

Prof. C L Bhattar

11

PROJECT NAME -

Design advance metering infrastructure in smart grid with internet of things

FACULTY NAME -

Dr. D B Talange

12

PROJECT NAME -

Transformer overload protection using microcontroller

FACULTY NAME -

Dr. A R Thorat

13

PROJECT NAME -

Renewable energy based EV charging and bill monitoring system

FACULTY NAME -

Prof. S S Patil

14

PROJECT NAME -

Data integration for advanced metering infrastructure using cloud computing

FACULTY NAME -

Dr. P P Gupta

15

PROJECT NAME -

IOT based distribution transformer health monitoring system

FACULTY NAME -

Prof. V B Patil

16

PROJECT NAME -

Selection of Motor, Controller & Battery and Design of wiring for AGV

FACULTY NAME -

Prof. S S Kumbhar

17

PROJECT NAME -

Battery Management system for electric vehicle

FACULTY NAME -

Dr. Sujil A

18

PROJECT NAME -

Conditional monitoring of three phase induction motor using PLC

FACULTY NAME -

Prof. S P Burud

ACADEMIC PROJECTS

Capstone Project

19

PROJECT NAME -

Effective utilization and management of electricity consumption

FACULTY NAME -

Prof. K M Nathgosavi

20

PROJECT NAME -

Design and development of regenerative breaking system for electric system

FACULTY NAME -

Prof. S S Kumbhar

21

PROJECT NAME -

GSM and GPS based underground cable fault detection with Aurduino

FACULTY NAME -

Prof. O Swami

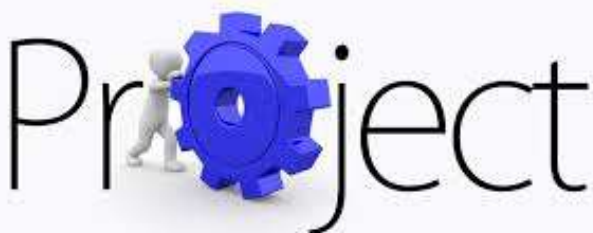
22

PROJECT NAME -

Design & Simulate Relay Co-ordination in Distribution System

FACULTY NAME -

Prof. Y N Bhosale



R & D ACTIVITIES



1

Title of Project-

Energy audit of BKL
Walawalkar Hospital &
Research Center, Sawarde,
Chiplun.

Name of the Faculty-

Dr. V. N. Kalkhambkar

Amount

1,18,000/-

Sponsored By

BKL Walawalkar Hospital &
Research Center, Sawarde,
Chiplun



2

Title of Project-

IRG for training on "Electrical
Design and Drafting for SY &
TY B.Tech student.

Name of the Faculty-

Prof. Amarjeet Pandey

Amount

52,000/-

Sponsored By

Hotel Shubhshree Comfort ,
Vijaypur Karnataka

3

Title of Project-

Analysis of Electrical
Installation and Energy
Efficiency in Building

Name of the Faculty-

Dr. A.R. Thorat

Amount

15,000/-

Sponsored By

Educational Institute Student



STUDENT ARTICLE

FUTURE OF ELECTRIC VEHICLES

MRUNAL K KADAM (2008009)
FINAL YEAR, B.TECH, EE

The future of electric vehicles (EVs) is charged with promise and potential, poised to reshape the automotive landscape in profound ways. As the world confronts the challenges of climate change and seeks to reduce carbon emissions, EVs are at the forefront of sustainable transportation. With technological advancements driving increased performance and affordability, the mass adoption of EVs is on the horizon.

Advancements in battery technology are central to the future of EVs. As batteries become more energy-dense, cost-effective, and quicker to charge, the range anxiety that has been a barrier to EV adoption will dissipate. Moreover, investments in charging infrastructure are expanding, ensuring that convenient charging options are readily available, even for long road trips. Governments and industries worldwide are embracing electrification as a means to reduce emissions and promote cleaner, more efficient transportation.

The future of EVs isn't just about cleaner and quieter vehicles; it's about transforming the entire mobility ecosystem. Self-driving EVs are on the horizon, with the potential to revolutionize ride-sharing and public transportation. The integration of EVs with the energy grid through vehicle-to-grid (V2G) technology promises more efficient energy usage, grid stabilization, and cost savings. As governments enact policies to phase out internal combustion engines and automakers accelerate their EV production, the future is indeed electric, and it holds the promise of a more sustainable and cleaner transportation landscape for generations to come.

The time is
right for
electric
cars - in
fact the
time is
critical.





STUDENT ARTICLE

SKILLS WHICH HIGHLIGHTS ENGINEERS

ARUNA A LADE (2008016)
FINAL YEAR, B.TECH, EE

Engineers are the architects of innovation, armed with a unique skill set that places them at the forefront of technological advancements. One of the defining qualities of engineers is their analytical thinking, enabling them to dissect intricate problems and formulate structured solutions. Their proficiency in mathematics and science equips them with the tools to make precise calculations and predictions, a hallmark of their expertise. Engineers are not just limited to their technical knowledge; they are also visionaries, constantly pushing the boundaries of possibility through creativity and innovation.

Moreover, engineers are adept project managers, overseeing complex endeavors that demand time management, resource allocation, and risk assessment. Their ability to communicate effectively is equally vital, whether they are conveying complex ideas to clients, collaborating with diverse teams, or presenting findings to peers. Perhaps one of the most commendable aspects of an engineer's skill set is their unwavering commitment to ethical responsibility, ensuring that their work contributes to the betterment of society while prioritizing safety and sustainability. These skills collectively underscore the dynamic and indispensable role of engineers in shaping the future of technology and solving the world's most pressing challenges.

Throughout history, there have been many notable engineers and inventors who have changed the way we live through their creations and innovations



PROGRAMS & PUBLICATIONS

JOURNAL PAPER PUBLICATION

- Revankar, Swapnil R., and Vaiju N. Kalkhambkar. "Optimal Operation Model of Vehicle to Vehicle Charging System." *Journal of Electrical and Electronics Engineering* 15, no. 1 (2022): 52-58.
- Gupta, Pranda Prasanta, Vaiju Kalkhambkar, Prerna Jain, Kailash Chand Sharma, and Rohit Bhakar. "Battery energy storage train routing and security constrained unit commitment under solar uncertainty." *Journal of Energy Storage* 55 (2022): 105811.
- Sutar, Maneesh, and H. T. Jadhav. "An economic/emission dispatch based on a new multi-objective artificial bee colony optimization algorithm and NSGA-II." *Evolutionary Intelligence* (2022): 1-36.

EVENT ORGANIZED

IEEE

08

EESA

03

ISTE

03



EVENTS

Engineers Day Celebration



A webinar on Lean Start-up



EESA

Electrical Engineering Students association (EESA)

The Electrical Engineering Students' Association (EESA) represents students within the Electrical Engineering department. EESA is an initiative by the students, for the students.

Goal:

The main purpose of the EESA is to provide a variety of educational experiences that will encourage organization members to broaden their knowledge and increase their enthusiasm for their chosen occupational areas (i.e. occupational-related field trips, seminars, etc.).

Objectives:

- To provide opportunities for social interaction among organization members.
- To conduct various events like seminars, industrial visits, guest lectures, soft-skills development programs, fresher's party etc. and also technical and nontechnical events for assisting students
- To increase knowledge and skills in planning, delegating, decision making
- To develop a more positive and realistic attitude toward themselves, their peers and their colleagues.



EDITORIAL BOARD



Dr. V. N. Kalkhambkar
Head Of Department



Dr. Sujil A
Editor in Chief

This newsletter has covered all the events from July 2022 to December 2022 which were organized in and by Electrical Engineering Department. We are here going to invite suggestions for improvement, if any, with warm regards.

Student Editorial TEAM



Harish Vishal Londhe



Sucheta Jagtap



Mrunal Kiran Kadam