News letter of Department of Electrical and Electronics Engineering.
K.Ramakrishnan college of Engineering,Samapuram, Tiruchirapalli.
Issue 2 (DEC 2022)

K.Ramakrishnan College of Engineering
Autonomous| Affiliated to Anna University Chennai

INSTITUTE VISION AND MISSION

VISION

- "To achieve a prominent position among the top technical institutions"

MISSION

- To bestow standard technical education par excellence through state of the art infrastructure, competent faculty and high ethical standards.
- To nurture research and entrepreneurial skills among students in cutting edge technologies.
- To provide education for developing high-quality professionals to transform the society.

ABOUT THE DEPARTMENT

The Department of Electrical and Electronics Engineering (EEE) at K. Ramakrishnan College of Engineering (KRCE), established in 2008, is committed to delivering quality education, fostering innovation, and providing industry-oriented learning. The department offers undergraduate and postgraduate programmes, including an M.E. in Power Systems Engineering (since 2013), designed to meet global technological demands.

The department has a team of 16 highly qualified faculty members. All faculty members hold postgraduate degrees in various specializations such as Power Systems Engineering, Power Electronics and Drives, Embedded Systems, Control and Instrumentation, High Voltage Engineering, Power Management, Process Dynamics and Control, and Energy Engineering. Among them, 7 are Ph.D. holders and 8 faculty members are pursuing doctoral research, fostering a strong academic and research culture.

With well-equipped laboratories such as Electrical Machines Laboratory, Power Electronics and Drives Laboratory, and Control & Instrumentation Laboratory, along with advanced research facilities, the department ensures hands-on learning and technical excellence. ICT-enabled classrooms, high-speed internet connectivity, and 24/7 Wi-Fi access creates a smart learning environment.

The department has an outstanding academic record with 36 University Rank holders, including a University First Rank. The institution is accredited by NAAC with an "A" grade, and the EEE program was accredited by the National Board of Accreditation (NBA) in 2019. KRCE attained Autonomous Status in 2020, enabling the department to design a dynamic and industry-relevant curriculum aligned with emerging technologies.

To enhance employability, structured training is provided from the third semester and dedicated placement drives for core companies are conducted. Over 95% of interested students have been placed in leading multinational companies such as TCS, Wipro, Cognizant, HCL Technologies, Hitachi, Capgemini, and Zoho, as well as in core engineering companies such as ABB, Schneider Electric, General Electric (GE), PDCS, 3 Phase Engineering, and ModPro.

The department strongly promotes higher education and global exposure. Students have qualified in competitive examinations and are pursuing higher studies in premier institutions such as Anna University and National Institutes of Technology (NITs), as well as internationally reputed universities including the University of Hertfordshire (UK) and Steinbeis University (Germany).

Research and innovation are key strengths, with four recognized research supervisors, publications in SCI and Scopus-indexed journals, and funding support from agencies such as AICTE, DST, IEEE, ISTE, IEI, and TNSCST. Strong industry collaboration through MoUs, consultancy works, and internships enhances real-world learning.

Students actively participate in and win accolades at national-level competitions such as TCS CodeVita, YUKTHI Innovation Challenge, and AICTE Vishwakarma Awards. Professional development is further supported through active student chapters of IEEE and IEI.

With a focus on academic excellence, global competence, and holistic development, the department prepares future-ready electrical engineers to address industry requirements and societal challenges worldwide.

DEPARTMENT VISION AND MISSION

VISION

"To emerge as a renowned department for high quality teaching,learning and research in the domain of Electrical and Electronics Engineering, producing professional engineers, to meet the challenges of society."

MISSION

- To establish the infrastructure resources for imparting quality technical education in Electrical and Electronics Engineering.
- To achieve excellence in teaching, learning, research and development.
- To impart the latest skills and developments through practical approach along with moral and ethical values.

RESEARCH

Research activities of EEE department is centered around the core domains of Power systems, Power Electronics, Electrical Drives, High Voltage Engineering, Optimization, Electrical machines, Renewable Energy systems, Power quality, FACTS, Energy conservation, and management. To impart and promote research interest among students in the above core domains of EEE, we encourage the students to perform regular R&D projects resulting in journal and conference publications or patents. Workshops, industry oriented seminars and conferences are also organized in our department to help the students of our department to enhance the knowledge in state-of-the art. Our R & D team is also actively involved in getting funds from IEEE, TNSCST, MNRE,DST etc.

Our department is recognized as R & D centre by Anna University, Chennai where several research scholars are doing Ph.D. in various domains. The Research laboratory is developed with the aim of enhancing the research capabilities for power engineers in the Electrical and Electronics Engineering department. These laboratories will be devoted to solving problems in cutting edge research topics of promise to future applications. It supports undergraduate, postgraduate and research scholars to enhance rapid technology transfer in various domains in the field of Energy, Power Systems Engineering and Power Electronics and Drives.

HIGHLIGHTS OF RESEARCH CENTRE

1. The department has been recognized as Research Centre by Anna University, Chennai since November 2017.
2. The research centre has two research supervisors recognized by Anna University, Chennai.
3. Eleven Research Scholars have registered for Ph.D. programme in the department research centre, in Part-Time category.
4. The faculty members and research scholars of our department consistently publish papers in referred national & international journals/conferences.
5. The Department is regularly conducting International Conference on Innovations in Engineering, Technology and Science (ICIETS) every academic year to promote academic research.
6. The Department of EEE has state of art facilities in research laboratory and is actively involved in collaborating with industries for research and consultancy works.

DESCRIPTION

The Research lab shows a new mechanism to improve the innovation ability of research scholars and to collaborate with the industry persons. It provides a platform for the research scholars in the department to share their knowledge in their field of expertise. It also helps the post graduate students to understand the basic necessity in doing research and to acquire guidance from the experts in various domains. The lab also supports in conducting lab sessions while conducting national/international short term training programs and workshops to all the participants satisfying their thirst in the recent fields of power systems and power electronics. Research in the department may be broadly divided into so-called "thrust" areas:

Renewable Energy Systems
Smart Grid Technology
Power System Deregulation
Soft Computing Techniques
Design and Analysis of Power Converters
Energy Conservation
Electrical Drives

RESEARCH SOFTWARES:

1. Mi Power Software Version 9.1, 5 User Network Licence, Unlimited number of buses and nodes
2. ETAP version 7.5.2, 10 user, 50 bus system
3. Matlab R2015a, software, 15 user
4. NI LabVIEW Full Package, 25 user
5. PSPICE software 25 user
6. PROTEUS software
7. MYRIO hardware ,10 user
8. MYDAQ hardware 10 user

RESEARCH EQUIPMENTS

1. EM-Type Over current Relay testing kit
2. Fluke 438- II / INTLI - Power Quality& Motor Analyzer.
3. AC Drives Training kit G120 with Sinamics 3 phase IM (Siemens)
4. DC Drives Training kit Sinamics DC Master 6RA80(Siemens)
5. Speed control of DC motor using Chopper
6. Re-programmable logic devices & programming (V/F Control)
7. Automatics voltage regulation of three phase Synchronous generator
8. 250KW Roof Top Solar power Plant with Grid Connected facility
9. Wind speed sensor DWT 8102
10. Air Temperature sensor DWT 8103
11. Relative humidity sensor DTH 8103
12. Module(Surface temperature model DWMT 8104)
13. Pyrometer Sensor DWR 8101
14. 4 Channel data logger DWL 1002
15. Hand held Anemometer DHA 111
16. 60KV Transformer BDV Oil test kit
17. Solar PV Module Training Kit
18. Fuel Cell Module Trainer Kit
19. Various electrical machines and meters

The research laboratories will be devoted to solving problems in cutting edge research topics of promise to future applications. EEE department will continue to help students in shaping them as future professionals and assist them to improve their performance by imparting career oriented courses periodically. Hands-on experience on practical power quality analyzer and motor analyzer are employed. This laboratory provides periodical in-house training programs and national level workshops for the UG/PG engineering students to bring out professional and technical excellence in them in order to bridge the gap between industries and academia. The main objective is to disseminate knowledge and appropriate skill practices through proper systems of training testing and certification.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1: Have Stong foundation in Electrical and Electronics Engineering to Excel in professional career, in higher studies or research.

PEO2: Analyze, design and develop various interdisciplinary projects and products, to contribute industrial needs and societal development.

PEO3: Have Professional ethics and effective communication skills with life-long learning attitudes.

PROGRAM OUTCOME (PO)

PO1 Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 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, societal, and environmental considerations.

PO4 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.

PO5 Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6 The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

PO10 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.

PO11 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.

PO12 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

PROGRAM SPECIFIC OUTCOME (PSO)

PSO 1: Apply logical, analytical and technical skills to model and develop electrical systems and appliances that meet societal requirements.

PSO 2: Apply fundamental and advanced knowledge of Electrical and allied Engineering in the design and development of hardware and software tools for non-conventional electrical power generation and distribution.

DEPARTMENT ACHIEVEMENTS AND ACADEMIC EXCELLENCE

The Department of Electrical and Electronics Engineering at K. Ramakrishnan College of Engineering continued its tradition of academic excellence, innovation, and professional development during the academic year 2022–2023. The department actively organized technical events, quizzes, workshops, symposiums, entrepreneurship programs, and awareness initiatives to enhance students' knowledge and industry readiness.

The department demonstrated remarkable growth in:

- Technical event organization
- Student participation in national-level activities
- Research publications
- Conference presentations
- Placement achievements
- Innovation and entrepreneurship development
- Intellectual Property Rights awareness

A large number of students participated in professional society activities conducted under:

- IEEE
- IEEE PES
- IEEE WIE
- ISTE
- IEI
- IIC
- EnSav Club
- Telectra Charges

These activities provided students with opportunities to strengthen technical competency, leadership skills, research exposure, communication abilities, and innovation mindset.

The department also focused extensively on:

- Renewable Energy Systems
- Energy Management and Auditing
- Electrical Core Engineering
- MATLAB Applications
- Entrepreneurship
- Research Methodology
- Intellectual Property Rights
- Human Rights Awareness
- Sustainable Technologies

The year also witnessed excellent placement records and remarkable publication contributions in reputed IEEE international conferences.

TECHNICAL EVENTS AND QUIZ SERIES

The Department of EEE conducted a continuous series of technical quizzes and knowledge enhancement programs throughout the academic year. These events helped students improve conceptual understanding and competitive skills.

Basic Electrical and Electronics Engineering Quiz Series

The department organized multiple editions of "Quiz Series on Basic Electrical and Electronics Engineering" under IEEE-PES, ISTE, and IEI chapters. The quiz sessions were conducted regularly from July 2022 to November 2022.

Objectives of the Quiz Series

- Strengthen core electrical engineering concepts
- Encourage competitive learning
- Improve analytical thinking
- Prepare students for GATE, placement, and higher studies

The quiz programs covered:

- Electrical Circuits
- Machines
- Power Systems
- Control Systems
- Electronics
- Measurements and Instrumentation

Students enthusiastically participated in all editions from Quiz Series-05 to Quiz Series-25. These sessions significantly enhanced technical confidence among students.

Energy Management and Auditing Quiz Buzz Series

The "Quiz Buzz Series" organized by IEEE, ISTE, IEI, and EnSav Club focused on:

- Energy Conservation
- Energy Auditing
- Sustainable Energy
- Renewable Technologies
- Smart Energy Systems

From Series-39 to Series-64, the department conducted regular awareness-oriented technical quiz programs to create awareness on energy-efficient technologies and sustainable engineering practices.

The initiatives aligned with:

- Green energy goals
- Sustainable engineering education
- Industry-focused energy management practices

These events created strong awareness regarding efficient energy utilization and environmental responsibility among students.

WORKSHOPS, TRAINING PROGRAMS AND INDUSTRY ORIENTED EVENTS

The department organized several workshops and technical training programs to bridge the gap between academic learning and industrial expectations.

MATLAB Fundamentals Workshop

A “Hands-on Interactive Session on MATLAB Fundamentals” was conducted from 20.07.2022 to 25.07.2022.

Highlights

- MATLAB programming basics
- Simulation techniques
- Signal analysis
- Electrical system modeling
- Real-time engineering applications

Students gained practical exposure to simulation environments widely used in industries and research organizations.

NITTTR Chandigarh Sponsored Programs

The department successfully conducted advanced faculty and student development programs in collaboration with NITTTR Chandigarh.

Programs Conducted

1. Nanosensors and Device
2. Smart Grid & Renewable Energy Sources
3. Tools for Engineering Research

Outcomes

- Research awareness
- Advanced technology exposure
- Smart grid understanding
- Renewable integration concepts
- Research methodology skills

These programs enhanced research culture within the department and motivated students towards innovation-driven learning.

Prospects of Core Placement

An awareness session on “Prospects of Core Placement” was conducted to guide students toward career opportunities in core electrical industries.

Topics included:

- Electrical core company recruitment process
- Skill expectations
- Resume preparation
- Technical interview preparation
- Government and private sector opportunities

The program motivated students to pursue careers in core engineering sectors.

ENTREPRENEURSHIP, IPR AND INNOVATION ACTIVITIES

The Institution Innovation Council (IIC) and Department of EEE jointly organized several innovation and entrepreneurship-related activities during the academic year.

Intellectual Property Rights Awareness

Programs on Intellectual Property Rights (IPR) were organized to create awareness among students regarding:

- Patents
- Copyrights
- Trademarks
- Industrial designs
- Innovation protection

Students actively participated in IPR awareness and training sessions. These initiatives encouraged students to protect innovative ideas and pursue research-based development.

Innovation – The Need of the Hour

This session emphasized:

- Creativity in engineering
- Problem-solving approaches
- Innovation ecosystems
- Startup opportunities

The program inspired students to identify real-world engineering problems and develop innovative solutions.

Art of Entrepreneurship

A special session on entrepreneurship educated students on:

- Startup creation
- Business planning
- Funding opportunities
- Leadership
- Market analysis

Students gained understanding about transforming technical ideas into successful business models.

Entrepreneurship and Startups

The department organized a dedicated event focusing on:

- Startup ecosystems
- Entrepreneurial opportunities
- Innovation-based enterprises
- Industry collaboration

The session motivated aspiring entrepreneurs among EEE students.

Idea Plan Competition

Students presented innovative business and technical ideas during the “Idea Plan Competition.” Industry experts and mentors guided participants on transforming ideas into implementable projects.

STUDENT PARTICIPATIONS AND ACHIEVEMENTS

EEE students actively participated in national and state-level technical events, workshops, symposiums, and training programs.

Intellectual Property Awareness Training

A large number of students participated in Intellectual Property Awareness and Training Programs conducted at national level.

The participation demonstrated:

- Research awareness
- Innovation interest
- Technical curiosity
- Professional development

Students such as:

- Adithya R
- Akash S M
- Anusuya E
- Aravindh M
- Balamurugan P
- Divyabharathi M
- Gokulakrishnan S M
- Suswin Ganesh R

  and many others actively participated.

Energy Literacy Training

One of the major student engagement initiatives was the “Energy Literacy Training” program.

Objectives

- Promote sustainable energy awareness
- Improve energy conservation understanding
- Develop responsible engineering practices

More than 70 students from the department actively participated in this national-level initiative.

Human Rights and Professional Awareness

Students participated in:

- Human Rights Training Programs
- Renewable Energy Workshops
- Chemical and Electrochemical Research Workshops

These programs helped students develop professional ethics, social responsibility, and multidisciplinary awareness.

STUDENT AWARDS AND RECOGNITIONS

The Department of EEE students earned several recognitions and awards during the academic year.

ISTE Best Student Awards

Awardees

- S. Irfan Basha
- M. Saraswathi

The students received the prestigious ISTE Student Award for their academic excellence, technical participation, and professional involvement.

The award recognized:

- Technical competency
- Leadership
- Academic performance
- Active participation in professional societies

This achievement brought pride to the department and motivated fellow students toward holistic development.

National Level Technical Symposium Achievements

Students secured First Prize in various national-level competitions conducted at SRM Trichy Arts and Science College.

Prize Winners

- Balamurugan P – Quiz Program
- Karthick S – Debugging
- Suswin Ganesh R – Debugging
- Gopika – Paper Presentation and Debugging

These achievements showcased the technical strength and problem-solving abilities of EEE students.

Academic Excellence

Prashad M secured:

State First Rank – Diploma Board Examination (V Semester)

This remarkable academic achievement reflected the department's commitment toward excellence in academics and mentoring.

Sports Achievement

Kirubhashini M secured recognition in the National Level Sports Fest conducted at SASTRA University, Tanjore.

RESEARCH PUBLICATIONS AND CONFERENCE PRESENTATIONS

The Department of EEE demonstrated strong research contributions through publications in reputed IEEE international conferences.

IEEE Conference Publications

Students published papers in:

- ICESC
- ICOSEC
- ICAECT
- ICAISS
- ICACCS

These publications covered emerging areas such as:

- Sustainable Communication Systems
- Smart Electronics
- Augmented Intelligence
- Advanced Computing
- Renewable Energy
- Intelligent Systems

Major Contributors

S. Irfan Basha

One of the leading contributors from the department, S. Irfan Basha published multiple research papers in IEEE conferences including:

- ICESC
- ICOSEC
- ICAISS

The publications reflected strong research aptitude and technical innovation.

Other Student Contributors

- V Pavithra
- P Vishal
- J Dharinee
- K Harikrishnan
- S Harish
- KJ Kansuman
- N Sudharson

All papers were successfully presented in international conferences and indexed in IEEE Xplore. These achievements strengthened the department's research profile and international academic visibility.

The department encouraged students to engage in:

- Research paper writing
- Technical documentation
- Conference presentation
- Innovation-oriented projects

Such initiatives significantly improved students' research competency and higher education readiness.

TECHNICAL SYMPOSIUMS AND ASSOCIATION ACTIVITIES

TELECTRA CHARGES – Department Association

The Department Association “TELECTRA CHARGES” was inaugurated on 22.09.2022.

The association served as a platform for:

- Technical interaction
- Leadership development
- Student coordination
- Event organization
- Knowledge sharing

Various technical and non-technical events were organized under this association.

KRYPTO Technical Symposium

The department conducted “KRYPTO” Technical Symposium featuring:

1. Paper Presentation
2. Debugging
3. Programming Contest
4. Circuit Debugging
5. Technical Quiz

Students from various institutions participated enthusiastically, making the symposium a grand success.

Engineers Day Activities

Special quiz programs and technical events were organized in connection with Engineers Day celebrations.

The programs highlighted:

- Engineering innovations
- Role of engineers in society
- Emerging technologies
- Professional ethics

Students actively participated and enhanced their engineering awareness.

PLACEMENT ACHIEVEMENTS

The academic year 2021–2022 witnessed excellent placement records for the Department of EEE.
Students secured placements in reputed companies such as:

- Cognizant
- TCS
- Aptean
- Kyndryl
- Mphasis
- Hexaware
- Wipro
- Zoho
- Mindtree
- Wiley
- Omega Healthcare
- Musigma
- Zuci Systems
- Motherson

Major Recruiters

Cognizant

A significant number of students were recruited by Cognizant, reflecting the strong employability skills of EEE students.

TCS
Students received placements through TCS recruitment drives and demonstrated excellence in aptitude and technical interviews.

Core and Product Companies

Students also secured placements in:

- Kyndryl
- Aptean
- Wiley
- Zoho
- Kaar Technologies

These placements demonstrated the department's balanced focus on:

- Core engineering
- IT industry readiness
- Communication skills
- Technical competency

Placement Support Activities

The department conducted:

- Placement training
- Technical coaching
- Aptitude sessions
- Interview preparation
- Resume development workshops

Faculty members continuously guided students to achieve successful careers in reputed organizations.

NEWSLETTER VERIFICATION & ACKNOWLEDGEMENT

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Student Editorial Team

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Department: Electrical and Electronics Engineering

Verification & Approval

This is to certify that the above newsletter has been **prepared by the students under my guidance**, and the contents are **verified and approved** for publication.

Signatures

Newsletter Faculty Coordinator **Signature of Head of the Department**