



KCG

COLLEGE OF TECHNOLOGY



Department of
Electrical and
Electronics
Engineering

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EnErgizE

Volume - II
January - June 2022

VISION

KCG College of Technology aspires to become a globally recognized centre of excellence for science, technology & engineering education, committed to quality teaching, learning and research while ensuring for every student a unique educational experience which will promote leadership, job creation, social commitment and service to nation building.

MISSION

- Disseminate knowledge in a rigorous and intellectually stimulating environment.
- Facilitate socially responsive research, innovation and entrepreneurship.
- Foster holistic development and professional competency.
- Nurture the virtue of service and an ethical value system in the young minds.

KCG College of Technology was founded in 1998 to fulfill the Founder-Chairman, Dr. KCG Verghese's vision of **"To Make Every Man a Success and No Man a Failure"**. It is a Christian minority institution, affiliated to Anna University (Autonomous), Chennai and approved by AICTE, New Delhi.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VISION

The Department of Electrical and Electronics Engineering aims to be a centre of excellence recognized for high quality teaching, learning and research, producing competent professionals to serve the nation.

MISSION

- Impart quality technical education in Electrical and Electronics Engineering domain
- Nurture industrial collaboration in research and development activities
- Maintain state-of-the-art facilities to provide opportunities for knowledge up-gradation
- Invoke the desire and ability of life-long learning in the students for a successful career

EDITOR'S DESK

Welcome to the second issue of EnErgizE, the official Newsletter of the Department of Electrical and Electronics Engineering at KCG College of Technology. This publication reflects our department's milestones, from academic achievements to innovative research contributions. It highlights the dynamic and industrious spirit of our faculty and students as they contribute to the world of technology.

Chief Editor	Dr. T.Anuradha
Editor	Dr. R.Murugan
Faculty coordinator	Dr. B.BrindhaSakthi
Students representatives	1. Ilakkiya.C.S- II YEAR 2. Snega.K - II YEAR 3. Suraj.B- II YEAR 4. Alen Thomas-II YEAR 5. Prem Kumar- III YEAR 6. Ayush Pandey- III YEAR 7. Kamaliga S- III YEAR

RESEARCH ACTIVITIES

Faculty Research Publications

The faculty members of the Electrical and Electronics Engineering (EEE) department at KCG College of Technology have made significant contributions to various international journals. The highlights include:

- Publications in prestigious IEEE XPLORE journals, covering a wide range of topics such as renewable energy, smart grid, artificial intelligence, and power systems.
- Articles in reputable Elsevier journals, focusing on optimization techniques for combined heat and power economic dispatch.
- Collaborative research work involving faculty members from both the EEE

International Journal of Energy Research:

Design of coil parameters for inductive type wireless power transfer system in electric vehicles:
Dr. P. Deiva Sundari, Ms. Brindha Sakthi. May 2022



Engineering Applications of Artificial Intelligence:



A hybrid Grasshopper Optimization Algorithm and Harris Hawks Optimizer for Combined Heat and Power Economic Dispatch problem: Dr. P. Deiva Sundari, Dr. R. Murugan. May 2022

A Ranking-based Fuzzy Adaptive Hybrid Crow Search Algorithm for Combined Heat and Power Economic Dispatch: Murugan R, Seyedali M, Mohan Malli R, Christoher Asir Rajan Charles G, Deiva Sundari P, Arunachalam S. Volume 197, Issue 1, July 2022

IEEE XPLORE:

Dr. Anuradha T has been actively contributing to research in cutting-edge technologies. Recent publications include:



- 5G Network Virtualization for the Remote Driving Enhancement: N. Sendhil Kumar, Upinder Kaur, T. Anuradha Sankararao Majji, Santoshachandra Rao Karanam, Radhika G Deshmukh. February 2022
- Power Management on a Fuzzy Base Small Scale Microgrid Based on Hybrid Wind and Solar Battery: Abu Backer T, Akash S, Dhakshayani P, Anuradha T. March 2022
- Broadcasting of IoT-connected Automation Vehicles in VANETS Using Artificial Intelligence: Upinder Karur, Anuradha T, Papararo Nalajaja, Sankararao Majji, Sushma Jaiswal, Dinesh Jamthe. January 2022
- Optimization Strategies for High-Speed Electrical Trains Based on Artificial Intelligence for Cost and Energy Reduction: 1 A. Geetha Devi, Rajendar Sandiri, T. Anuradha, Bijaya Bijeta Nayak, Rajeeb Kumar Sahu, M. Thenmozhi. April 2022

EVENTS

Seminars and Workshops

The Electrical and Electronics Engineering (EEE) department at KCG College of Technology organized several conferences, seminars, workshops, and faculty development events in 2022.

The highlights include:

- Solar Workshop: Providing hands-on training and insights into solar energy technologies.
- "Save Energy The Planet" Awareness Program: Educating the faculty and staff on energy-saving practices in the workplace.
- AICTE Sponsored Faculty Development Programs: Offering comprehensive training on the trends and challenges in the electric vehicle (EV) ecosystem, with experts from academia and industry as resource persons.

These events demonstrate the department's commitment to staying updated with the latest advancements, fostering knowledge sharing, and enhancing the professional development of the faculty members.

Conferences / Seminars / Workshops Organized

Solar Workshop

A workshop focused on solar energy was successfully conducted on April 13, 2022. The event featured Dr. K. Karthikeyan, Associate Professor in the Department of EEE at KCG College of Technology, and Ms. Ramya Manickavel, also from the Department of EEE at KCG College of Technology, as the key resource persons. The workshop was well-attended, with 100 participants eager to learn more about this important renewable energy source.



Centre of Excellence in Sub- station Automation



A significant event focused on the Centre of Excellence in Sub-station Automation took place on March 31, 2022. The occasion featured Dr. Murty V.V.S. Yalla, Vice President and General Manager at Beckwith Electric Co. in Florida, USA, and an Elected Member of the National Academy of Engineering. Dr. Yalla's presence and expertise undoubtedly added considerable value to the event, highlighting the importance of advancements in sub-station automation.

Save Energy The Planet-How to save 100 units per day in the workplace

May 6th, 2022, a focused workshop titled "Save Energy The Planet - How to save 100 units per day in the workplace" empowered 35 participants with practical techniques to reduce energy consumption. Held at KCG College of Technology, the session was led by Dr. Anuradha T, HOD/EEE, and Dr. K. Karthikeyan, Associate Professor, both from the Department of EEE.

The workshop addressed the critical need for energy conservation in today's world, emphasizing the significant impact even small changes in workplace habits can have. Participants explored strategies for optimizing energy use across various office settings, from lighting and HVAC systems to computer usage and equipment operation.



Faculty Development Events Organized

AICTE Sponsored Two Weeks Online Faculty Development – Phase I on "Trends and Challenges in EV Ecosystem"



DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

AICTE SPONSORED TWO WEEKS ONLINE FACULTY DEVELOPMENT PROGRAMME (Phase I)

1st to 13th January 2022

Trends & Challenges in EV Ecosystem

Inaugural Address

Dr. Sreejith S
Professor, Department of EEE
National Institute of Technology, Silchar

Online Platform: MS TEAMS

www.kcgcollege.ac.in

Resource Persons

On-board Charger Design Fundamentals for Electric Vehicle Mr. Jithan Executive Power Electronics Unit Head, Aurore	Electric Vehicle Charging Infrastructure Ms. Thygesha Shanmugasundaram Senior Consultant for EV Unit A&T, Aurore
Challenges for Design & Selection of EV Motors Dr. Deepak, Communication Design Engineer of Industrial Systems Pvt Ltd, Chennai	Design of Hybrid Electric Vehicle Dr. A. K. Parvathy, Asst. Prof. Business Institute of Technology and Science, Chennai
Automotive Vehicle Overview Dr. S. Suresh Babu Project Manager Robert Bosch, Chennai	Power Converters for EV Dr. S. Aradhya Kumar Professor, IIT PSC College of Technology, Erode
Over view of Electric Vehicle and EMI / EMC Testing Mr. K. C. Sundar Senior Technical Manager, Robert Bosch, Bangalore	EV for Sustainable Development Dr. Lakshminarasimhan Professor, IIT Anna University, Chennai
E-Mobility Roadmap, Technologies, Opportunities and Challenges Dr. Karthikeyan Engineer, IIS, Chennai, Bangalore	Grid Integration of EV Dr. M. R. Sathish Associate Professor, IIT National Institute of Technology, Tiruchirappalli
Multi-level System Design in EV Application Dr. V. Vignesh Prabhu Professor, Automobile Engineering IIS Institute of Science & Technology, Chennai	Recent Research Progress on Battery Thermal Management Systems for Lithium ion Batteries Dr. M. Srinivasan Post Doctoral Researcher, Center for Alternative Energy, Xue Bin Institute, Shanghai
Integration of Power Electronics for Performance Improvement in EV Dr. S. Suresh Babu Associate Professor, IIT Anna University, Chennai	Battery Technologies and Charging Methodologies Dr. M. R. Sathish Associate Professor, IIT Anna University, Chennai
Energy Storage Systems for E-Mobility Dr. K. A. Prabhakaran Managing Director High Energy Systems, Tiruchirappalli	AI for EV Dr. Venkatesh Kumar Professor, IIT Anna University, Chennai
PEMFC and H2C drive for EV Mr. Arjun Kumar IIS, Infotech Solutions, Aurore	Battery Charging Architecture for EVs Mr. Arjun Kumar IIS, Infotech Solutions, Aurore
Modeling and Simulation of Electric Vehicle Powertrain Mr. Praveen Kumar Technical System, Robert Bosch, Bangalore	National Education Policy Dr. R. Anil Kumar Associate Professor, International Engineering KJ Somaiya Institute of Technology, Mumbai

Validation
Dr. G. Srinivasan
Associate Professor, International Engineering
KJ Somaiya Institute of Technology, Mumbai

A two-week online Faculty Development Program (FDP) sponsored by the All-India Council for Technical Education (AICTE) was successfully conducted from January 1st to 13th, 2022. The program, titled "Trends and Challenges in EV Ecosystem," provided valuable insights into the rapidly evolving landscape of electric vehicles.

The FDP featured a diverse panel of experts from both academia and industry, offering participants a well-rounded perspective on the key issues and advancements in the field. Ms. Suganya A.V. and Ms. Jitha Varghese served as the Faculty Incharge for this program.

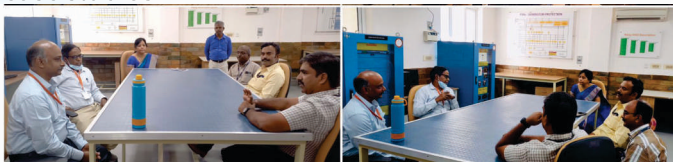
AICTE Sponsored Two Weeks Online Faculty Development – Phase II on "Trends and Challenges in EV Ecosystem"

Following the successful Phase I, a second two-week online Faculty Development Program (FDP) sponsored by the All India Council for Technical Education (AICTE) further explored the "Trends and Challenges in the EV Ecosystem." Held from February 14th to 28th, 2022, this Phase II program built upon the foundation laid in the first session, offering continued insights into the dynamic world of electric vehicles.

Like its predecessor, this FDP featured a diverse group of experts from both academic institutions and industry, providing participants with a comprehensive understanding of the latest developments and hurdles facing the EV sector. Ms. Suganya A.V. and Ms. Jitha Varghese again served as the Faculty Incharge, ensuring the smooth execution and success of the program.

Trends in commercial vehicle industry in India

The Department of Electrical and Electronics Engineering organized a seminar on Trends in commercial vehicle industry in India by Mr. V. Murugan, Retd. DGM Product Development Technical Centre, Ashok Leyland Ltd. on 30th April 2022. The discussion focused on the trends in commercial vehicle design, configuration, chassis, engine, drive train & battery management system of EV with several case studies.



STUDENT ACHIEVEMENTS

The students of the Electrical and Electronics Engineering (EEE) department at KCG College of Technology have achieved remarkable accomplishments during the period from January 2022 to June 2022.

The highlights include:

- Kamaliga S. excelling in various literary and language competitions.
- Karthi C H and Edwin Immanuel Mathi Yuvarajan securing prizes in prestigious national-level competitions like the AICTE Chhatra Vishwakarma Awards and hackathons.
- Suraj D being recognized among the top 100 projects in the KPIT Sparkle 2022 competition.
- Vijay S. showcasing his prowess in state and national-level karate tournaments, winning multiple gold and silver medals.

These accomplishments demonstrate the students' diverse talents, academic excellence, and their ability to excel in both curricular and extracurricular activities. The department's support and guidance

Kamaliga S. (EEE/III year)

- I Prize for Tamil Speech in Matribasha Diwas conducted by Hindustan Institute of Science & Technology (21.02.2022)

Karthi C H, Edwin Immanuel Mathi Yuvarajan (EEE/IV year & III year)

- I Prize for AICTE LILAWATI AWARD 2021-22 under the Sub Theme Self Defense (08-03-2022)

Vijay S. (EEE/II year)

- II Prize (Silver Medal) for Karate tournament in Anna University inter zonal competitions (25.02.2022 & 26.02.2022)
- I Prize (Gold Medal) for Karate tournament in Tamilnadu south zone competitions conducted in Hyderabad Telangana (03-03-2022 to 07-03-2022)

INDUSTRY INTERACTION

S. No.	Name of the Faculty	Date	Name & Address of The Organization / Industry/ Venue	Purpose
1	Dr. G. Sambadhan, Dr. P. DeivaSundari, Dr. T. Anuradha Ms. Jitha Varghese Ms. A. V. Suganya	01.01.2022	Dr. Sreejith S Assistant Professor , Department of Electrical and Electronics Engineering, National Institute of Technology ,Silchar	Guest speaker for AICTE sponsored Two weeks Faculty Development Program Phase - I
2	Dr. G. Sambadhan, Dr. P. DeivaSundari, Dr. T. Anuradha	02.01.2022	Mr. Thayalan Shanmugam Senior consultant for EV, Siri AB ,Sweden	Guest speaker for AICTE sponsored Two weeks Faculty Development Program Phase -I

STUDENT'S CORNER



*Sometimes we want things, don't know why,
Yet feel we need them, so we try.
We work, we hope, we pray they'll come,
But if they don't, then they're not ours to be won.*

*If they do, it's fate at play,
Guiding us along the way.
For every wish and every choice,
Leads us to our destined place.*

-Afreen Sultana A

AWARDS RECEIVED BY FACULTY & DEPARTMENT

The faculty and department of the Electrical and Electronics Engineering (EEE) department at KCG College of Technology have received notable awards during the period from January 2022 to June 2022.

The highlights are:

Dr. T. Anuradha

- I Prize for AICTE LILAWATI AWARD 2021-22 under the Sub Theme Self-defence (08-03-2022)

Dr. T. Anuradha, the Head of the Department of EEE, was awarded the I Prize for the AICTE LILAWATI AWARD 2021-22 under the Sub Theme Self Defence. This prestigious recognition showcases her contributions and expertise in the field of electrical engineering.



These awards not only highlight the individual accomplishments of the faculty member but also the overall excellence and recognition of the EEE department at KCG College of Technology. These accolades demonstrate the department's dedication to fostering a culture of innovation, research, and social responsibility.

