VOLUME 13 | ISSUE 1 | JULY 2024

RECEEN-1

EMPOWERING INNOVATION, CONNECTING FUTURES!

AEEF

SSN

CONTENTS

THE CREW

Meet the dynamic team bringing this edition to you

Chief Faculty Editor
Dr. R. Leo

Faculty Editor
Dr. Sajjan Kumar

Chief Student Editor
Supraja Venkatesan

Content Head
Bhuvanesh N P

Design Head
Harini M

Documentation Head
Sudharshan S

PG Student Editor
Sanjeev Guhan K S

STUDENT COORDINATORS

Dhanushram K

Komal Y

Prasanth V A

Yogitha Lakshmi R

FROM THE HOD DESK

A Message from the Head of our Department

On behalf of the department of EEE, I am delighted to welcome you all to the current issue of our Newsletter **REDEEEM**. The present issue with the new student editorial members will enlighten the readers with the **activities of the department, faculty and students during the second quarter of 2024.** This quarter has been filled with intense activity, and it is exciting to present the details that reflect the buoyancy of the department.

Dr. V. Rajini

Continuing with its stellar performance in getting the **highest accreditation status of 6 years**, it is great to witness our faculty and students engaging in various R & D activities and community engagements.

I congratulate all my faculty members, students, alumni and employers for their consistent efforts. The sports day of the college was inaugurated by Mr. Srinivasan, a national level cricketer and a proud alumnus of our department. My hearty congratulations to Kathir Ezhil, Keerthi Shivani and Sherin for bagging many sports prizes.

I congratulate Mr. Thaga Sheriff for being recognized as the best outgoing student of EEE Department of 2024 batch in the college day celebrations.

This edition also features the journey of Ms. Akshitha Blessy, a 2020 batch student and graduate of IIM Ahmedabad.

I thank the entire editorial team for their efforts in conceptualizing this newsletter. I hope and expect that you all enjoy reading this newsletter as much as I enjoyed bringing it forth to you.

I look forward to the forthcoming editions, brimming with even more captivating activities and feature.

EDITORIAL

Thought-provoking perspectives from our editorial board

In this competitive world talent matters. But talent has a broad definition. Most of the time, it's not about having a gift. It's about having grit. discipline is also a talent. And so is patience. Trusting yourself is a talent. Embracing the process, loving the process, is a talent. Managing your life, managing yourself..., managing others... these can be talents, too. An open mind and good attitude are talents. Building social capital is talent. Some people are born with them. Others have to work at them. When you're focusing a point, it is the most important thing in the world. A moment of choice is a *moment of truth*. It's the testing point of our character and competence. This mindset is really crucial, because it frees you to fully commit to the next moment and the next one after that... with intensity, clarity and focus. Just because you are logically sound and intelligent, it doesn't mean that you are talented in all 360 degrees. Human beings become more beautiful with their good attitude and innocence than the conventionally defined one.

The truth is whatever things you do in life... sometimes you're going to lose. A point, a match, a season, a job... it's a roller coaster, with many ups and downs. And it's natural, when you're down, you doubt yourself. To feel sorry for yourself. But negative energy is wasted energy. You want to become a master at overcoming hard moments and by the way, your opponents have self-doubt, too. Don't ever forget that. Take advantage of that. You build confidence over your driving skills if you know that not just you are scared, but the others also fearful about the damages happen to their car if they crash.Nature is perfect and abundant to have inclusiveness across all types of human being.

Nature has its own limitations. As you grow older you can see the signs of its limitations. The wise will accept and respect the limitation and live a healthy life and the other defy the natures limitations and go all the way out of their sheer desire and ignorance as if nature is meant only for them, without understanding the inclusiveness of the nature. Life is beautiful only if you know limitations,how to use time, emotions and energy wisely

EDITORIAL

Thought-provoking perspectives from our editorial board

When you look at others' vehicle it always looks fresh and good, the minor scratches won't get into your notice, but your vehicle always looks bad as you are well aware of the minor scartches. Learn to look at your vehicle as you look at other's vehicle to get some contentment.

The best in the world is not the best because they win every time. It's because they know they'll lose... again and again... and have learned how to deal with it. You accept it. Cry it out if you need to... then force a smile. You move on. Be relentless. Adapt and grow. Work harder. Work smarter. Know that skills and expertise matters most in the present scenario than education and experience. Never lose appetite to see the long view of this very big world.

"If you don't produce, you won't thrive - No matter how skilled and talented you are"

-Cal Newport

FACULTY ACHIEVEMENTS

Honoring the notable accomplishments of our distinguished faculty

External Recognition

Dr. K. K. Nagarajan, acted as a Session Chair for the conference titled **3rd International Conference on Recent Advances in Electrical, Electronics, Ubiquitous Communication and Computational Intelligence,** RAEEUCCI 2024 held during 17 -18, April 2024 organized by Department of ECE, SRM IST, Kattankulathur Campus, Chennai on 18/04/2024.

Dr. R. Seyezhai, acted as a Judge for the **IEEE Madras Section Student Project Funding 2023 -24** on 25/05/2024 organized by IEEE Madras Section.

Dr. M. Senthil Kumaran was invited for a guest lecture on **IC Fabrication Techniques** at Sri Venkateswara institute of Science and Technology, Kolundhalur, Tiruvallur, on 03/05/2024.

Dr. K. Murugesan was invited for a guest lecture on **Filter Design for Digital Signals** at Sri Venkateswara institute of Science and Technology, Kolundhalur, Tiruvallur, on 03/05/2024.

Dr. R. Ramaprabha, acted as a Jury for **IGNITE-An IDEATHON** conducted by SSN-IEEE Power Electronics Society Student Branch Chapter and Department of Electrical and Electronics Engineering during PELS Day Celebrations on June 24, 2024 organized by SSN-IEEE Power Electronics Society Student Branch Chapter and Department of Electrical and Electronics Engineering.

Research Milestones

R. Jeya, G. R. Venkatakrishnan, R. Rengaraj, M. Rajalakshmi, K. Pradeep Mohan Kumar, Sampath Boopathi, "Water Resource Managements in Soil and Soilless Irrigation Systems Using AI Techniques" (book chapter) for IGI Global on 27/04/2024.

Vidhya S, Balaji M, Kamaraj V, "Satellite Image Classification using CNN with Particle Swarm Optimization Classifier" in International Journal Procedia Computer Science April 2024, Volume 233, pp 979-987, ISSN 1877-0509,, DOI doi.org/10.1016/j.procs.2024.03.287, Impact factor 0.5 indexed in Scopus.

K. Murugesan, M. Senthil Kumaran, V. Vaithianathan, Pavithra Guru, "Optimizing Solar Panel Systems using Machine Learning and Ant Colony Optimization" in International Journal of Electrical Systems April 2024, Volume 20, pp 238 to 248, ISSN 1112-5209, DOI https://doi.org/10.52783/jes.1276, Impact factor 0.22 indexed in WOS/TR/SD.

S. Srinivasan, T. Padmapriya, K. Murugesan, Thiyagesan M, Vanitha R, "Influence Factors of Powerline Communication by Artificial Intelligence Approach based on Rock Electric Signal" in International Journal of Electrical Systems April 2024, Volume 20, pp 2272 to 2281, ISSN 1112-5209, DOI , Impact factor 0.17 indexed in WOS/TR/SD.

K.C. Rajarajeshwari, K. MohaideenAbdul Kadhar, Nithya Kumar, S. Tamilselvi, MohammadZakirBellary, Vijayanandh Raja, Abdulrajak Buradi, B Vinoth Kumar, Addisu Frinjo Emma, "Single input multiple output maze shaped array antenna for millimeter wave applications" in International Journal Results in engineering - elsevier April 2024, Volume 22, pp 453-465, ISSN: 2590-1230, DOI https://doi.org/10.1016/j.rineng.2024.102097, Impact factor 5 indexed in WOS/TR/SD.

Usha.K, Amrutha.S, Raghavendra.V, Sethuram Gautham. R, "Health care Monitoring System Using LIFI and IOT" in National Journal Indian Journal of Natural Sciences April 2024, Volume , pp 71422, ISSN 0976 – 0997, Impact factor 2.742 indexed in WOS/TR/SD.

J. Poornima, K. K. Nagarajan, "Critical review on water quality analysis using IoT and machine learning models" in International Journal of Information Management Data Insights, April 2024, Volume 4, Issue 1, pp 100210, ISSN 2667-0968, DOI https://doi.org/10.1016/j.jjimei.2023.100210, SJIR Impact factor 2.14 indexed in Scopus.

Krishnaveni S, Marutham Rathna Valli M , Keerthana S and Kaviyamalar A D, "Automatic Power Factor Correction Unit using Arduino for Smart Homes" in National Journal, Indian Journal of Natural Sciences, April 2024, Volume 15, pp 725-737, ISSN 0976 – 0997 , Impact factor 2.742,indexed in WOS/TR/SD.

B Selavapriya, V.Rajini, B Sowmya, "Preserving the Legacy of Ancient Tamil Script with Deep Learning and Fuzzy C Means Algorithm: Intelligent Approach to Digitization" in International Journal Journal of Electrical Engineering and Technology, June 2024, ISSN 2093-7423, DOI https://doi.org/10.1007/s42835-024-01941-5, Springer, Impact factor 1.9 indexed in WOS.

V. Rajini, K. B. Sundharakumar, V. S. Nagarajan, H. Karunya, H. Babu Manogaran and W. Abitha Memala, "A classification approach for induction motor faults based on empirical mode decomposition and machine learning algorithms" in International Journal Electrica, 24(2), 515-524, 2024. June 2024, Volume 24 ISSN 2619-9831, DOI 0.5152/electrica.2024.23038, Impact factor 0.9 indexed in WOS/TR/SD.

FACULTY ACHIEVEMENTS

Continuum of Academic Excellence

S. Rudhra, S.Vinod, M. Balaji, J. Arul Prakash, "An Initiative Towards Efficient and Sustainable V2G Technology Fed STATCOM for Grid connected Wind Energy System" in International Journal of Electrical Systems May 2024, Volume 20, pp 2416-2423, ISSN 1112-5209, DOI https://doi.org/10.52783/jes.4087, Impact factor 0.17 indexed in WOS/TR/SD.

R. Jeya, G.R. Venkatakrishnan, Dinesh Ram Kumar, "Optimization of power system problem with renewable energy sources using enhanced differential evolution algorithm" in International Journal Tuijin Jishu June 2024, ISSN 10014055, Impact factor ,353 indexed in Scopus.

R. Jeya, G.R.Venkatakrishnan, R. Rengaraj, M. Rajalakshmi, Neythra Jayaprakash, "IoT Integrated Smart Water Management System for Efficient Water Conservation Framework" in International Journal SSRG-International Journal of Electronics and Communication Engineering June 2024, ISSN 2348-8549, Impact factor 0.6 indexed in Scopus.

R. Jeya, G.R.Venkatakrishnan, R. Rengaraj, M. Rajalakshmi, Praveen, "AIR-IoT ITINEARY: Deep DenseNet based Air Quality Monitoring using Real Time Sensors in Urban Areas" in International Journal SSRG-International Journal of Electronics and Communication Engineering June 2024, ISSN 2348-8549,Impact factor 0.6 indexed in Scopus.

Mathivanan, Anbuselvi., Palaniswamy, Saravanan. & Mohammed Gulam Nabi Alsath, "An ultra-miniaturized equipoise swastik-shaped THz absorber", Optical Quantum Electronics 56, 1232 (2024)." DOI https://doi.org/10.1007/s11082-024-06878-7, Impact factor 0.47 indexed in Thomson Reuters.

Krishnaveni. S, Anguselvi. S, Pazhanimurugan. R, "Management of Electrical Appliances for Smart Home to Regulate Energy Consumption using Arduino and GSM in National Journal" Indian Journal of Natural Sciences June 2024, Volume 15, pp 74288-74293, ISSN 0976 – 0997, DOI , Impact factor 2.452 indexed in WOS/TR/SD.

Conference Insights

Tarun J, P.Pradeep, R.Rohin, Dr.R.Seyezhai & Sabarish L, "Comparative Evaluation of DC-DC Converter Configurations for Solar-Assisted E-Bikes" in First National Conference on Multi disciplinary Research & Innovations in Engineering and Technology conducted by Knowledge Institute of Technology, Salem in Online/India on 06/04/2024.

Uppili Narasimhan G, R.Seyezhai, G Sasikaran KS & M.Prathyuman, "Analyzing Different DC-DC Converters for Efficient Power Transfer in Electric Vehicles" in Second International Conference on Recent Trends in Science Technology,Engineering & Mathematics conducted by RRASE College of Engineering,Chennai on 06/04/2024.

A. Akash Raj, F. Agilbert Sesu Felick, S. Aravind and R. Ramaprabha, "Implementation of PV fed five level inverter for low power applications" in 5th International Conference on Computational Intellegence and Industry 5.0 (ICCII - 2024) (ISBN:978-81-967851-7-8 conducted by Velammal Institute of Technology, Chennai on 03/04/2024.

A. Harish, M. Karthicthangam, A. Muthukumar and R. Ramaprabha, "Design and development of high gain bi-directional inverter suitable for microgrid system" in 5th International Conference on Computational Intellegence and Industry 5.0 (ICCII - 2024) (ISBN:978-81-967851-7-8 conducted by Velammal Institute of Technology, Chennai on 03/04/2024.

Rajamithra K, Rashmika V, Renuka B and R. Ramaprabha, "Development of Soldier Vest For Enhanced Military Performance and Safety" in 2nd International Conference on Recent Trends in Science, Technology, Engineering & Mathematics (ICSTEM 2024) conducted by RRASE College of Engineering, Chennai on 06/04/2024.

M Aathiswari, M Deepika, S Aswin and R. Ramaprabha, "Simulation of Single-Phase Quadratic Switched Boost Inverter for PV Application" in 2nd International Conference on Recent Trends in Science, Technology, Engineering & Mathematics (ICSTEM 2024) conducted by RRASE College of Engineering, Chennai on 06/04/2024.

Vignesh J, M Balaji, "Development of Human Machine Interface for Battery Mangaement System" in Fifth International Conference on Computational Intelligence and Industry 5.0 conducted by Velammal Institute of Technology, Chennai, India on 03/04/2024.

Daawood, Pradeep. P, Surya. J, K. Murugesan, M. Senthil Kumaran, "Machine Learning Based Real Time Text Recognition Using Raspberry Pi" in International Conference on Recent Trends in Science, Technology, Engineering & Mathematics (ICSTEM-2024) on 6th & 7th April 2024. conducted by RRASE College of Engineering, Chennai, India. on 07/04/2024.

FACULTY ACHIEVEMENTS

Continuum of Academic Excellence

R. Rengaraj, G. R. Venkatakrishnan, Ranganath R, Sethuram Gautham R ,Sriram V, "Design and Implementation of real time monitoring system of diesel generator using IoT" in IEEE Sponsored Second IEEE International Conference on Netwrooking and Communications 2024 (ICNWC 2024) conducted by SRM Institute of Science and Technology, Vadapalani in Chennai on 03/04/2024.

H. T. Charakanam, I. Damarla, R. Panda, M. K. Kosuri, A. A. Ramisetti and H. C. Potluri, "Optimal Power Allocation of BESS in Microgrid using Machine Learning Techniques" in 2024 Second International Conference on Emerging Trends in Information Technology and Engineering (ICETITE) conducted by IEEE in Vellore, India on 18/04/2024.

V.Rajini, R Raghul, "Exploring sensored and sensorless BLDC MOtor control: A comparative study with Sine PWM experimentation for enhanced electric vehicle performance" in the 5th international conference on computational intelligence and industry 5.0 - ICCII2024 on 3rd April 2024 at Velammal institute of Technology,Chennai.

Dr. R.Seyezhai, S.Devi, "Two Switched Impedance Source Network Inverter Simulation and Implementation for Enhanced PV System Performance" in 5th Electric Power and Renewable Energy Conference (EPREC-2024) conducted by NIT, Jamshedpur in Online/India on 25/05/2024.

Dr. R.Seyezhai, S.Devi, Muthukkumar RB Harshvardhini M Aman Panjiyar, "Lifetime Assesment Of Photovoltaic Quasi Impedance Source Inverter" in 5th Electric Power and Renewable Energy Conference (EPREC-2024) conducted by NIT, Jamshedpur in Online/India on 25/05/2024.

Veerasundaram, Dr. M.Balaji, "Combined Power Quality Disturbances Detection and Classification using Machine Learning Algorithm" in International Technical Conference on "Control in Electric Vehicles and Smart Grid with Renewable Energy Synergies for Sustainable Development" conducted by VIT Chennai in India on 11/05/2024.

S.Krishnaveni, "Design of High Efficiency Power Eelectronic converters for fuel cell system applications in SMART SYSTEMS FOR ELECTRICAL" ELECTRONICS, COMMUNICATION AND COMPUTER ENGINEERING IC(SEC)² – 2024 conducted by PSG Institute of Technology and Applied Research in Coimbatore on 28/06/2024.

G. R. Venkatakrishnan, R. Rengaraj, R. SaiKanna, J. RaymondJude, T. D. Saraswathy,V. S. Harini Sree, "Parking Management Using Computer Vision Techniques" in Scopus Indexed International conference on Recent Applications of Artificial Intelligence in Energy, Electronics and Computer Engineering - IconRAAEECE 24 conducted by Mepco Schlenk Engineering College, Sivakasi in Sivakasi on 28/06/2024.

G.R. Venkatakrishnan, R. Rengaraj, R. Jeya, P.Sathrapathy, R. Saimugil, "Home Automation and Monitoring using IoT" in Scopus Indexed International conference on Recent Applications of Artificial Intelligence in Energy, Electronics and Computer Engineering - IconRAAEECE 24 conducted by Mepco Schlenk Engineering College, Sivakasi in Sivakasi on 29/06/2024.

R. Jeya, G.R. Venkatakrishnan, R. Rengaraj, Ritesh N, Sam, F, Sanjiv Ramanathan, NirmalKrishna, "Power Generation using human energy with piezoelectric sensors" in Scopus Indexed International conference on Recent Applications of Artificial Intelligence in Energy, Electronics and Computer Engineering - IconRAAEECE 24 conducted by Mepco Schlenk Engineering College, Sivakasi in Sivakasi on 29/06/2024.

Project Highlights

Dr. G. R. Venkatakrishnan / EEE / SSNCE 2. Dr. R. Rengaraj / EEE / SSNCE 3. Dr. M. Devesh Raj / EEE / SSNCE applied for a External funded project titled **Enhancing the properties of copper extracted from EoL electronics using combined bio-chemical leaching for wires and cables in underground mines** on 27/04/2024 to the funding agency Ministry of Mines for a duration of 3 years for a funding amount of 50,47,450 Rupees.

Dr. M. Devesh Raj / EEE / SSNCE 2. Dr. R. Rengaraj / EEE / SSNCE 3. Dr. G. R. Venkatakrishnan / EEE / SSNCE applied for a External funded project titled **AI based Development of Automated Recycling Technologies for End-of-Life Solar PV Cells using Ultrasonic Sensors** on 25/06/2024 to the funding agency DST for a duration of 3 years for a funding amount of 27,82,000 Rupees.

FACULTY ACHIEVEMENTS

Continuum of Academic Excellence

Title: Design, development and implementation of semi-autonomous Multifunctional reconfigurable robot platform for harvesting flowering/fruiting crops
Team: **Dr. Satheesh Kumar Gopal, Asso. Prof / Mech as PI, Dr. Vimal Samsingh, Asso. Prof / Mech, Dr. Julie Charles, Asso. Prof /Physics and Dr. P. Saravanan, Asso. Prof /EEE** as Co-PIs
Budget: Rs. 49,15,000/-
Scheme: BIRAC, PACE (AIR-Academic Innovation Research).

Title: Design, development and demonstration of Na-ion: supercapacitor integrated power delivery system
Team: **Dr.S.A.Srinivasan Asst.Prof / Mech as the Principal Investigator and Dr. Julie Charles Asso. Prof /Physics, Dr. G.Satheesh Kumar Asso. Prof / Mech, Dr. P.Saravanan, Asso. Prof /EEE** as Co-PIs
Budget: 210.62 Lakh
Scheme: NEW AND EMERGING ENERGY STORAGE TECHNOLOGIES (NEST), DST.

Patent Info

R.Seyezhai and M.Sridhar applied for a National patent for Idea titled **ONE-STAGE POWER CIRCUIT WITH RIPPLE MINIMIZER FOR LED on 12/04/2024.**

Dr. R.Seyezhai and M.Sridhar was **granted** with a National patent for Idea titled **A Novel Encode-decode Power Electronic Circuit for Data Transmission** on 8th May 2024.

Scholar Summary

Dr. R. Seyezhai attended Synopsis meeting in Physical mode as a DC Member for the research scholar Mrs.Payal soni gupta on 24/04/2024.

Dr.R.Ramaprabha attended Confirmation meeting in Online (SRMIST) as a DC Member for the research scholar SUBRAMANIYAN J on 10/04/2024.

Dr.M.Balaji attended Synopsis meeting in SRM Institute of Science and Technology as a DC Member for the research scholar Ms. Subbulakshmy R on 16/04/2024.

Dr. R. Seyezhai Attended Viva Voce meeting in Physical mode as a Examiner for the research scholar Mr.Gopinath on 24/05/2024.

Dr.V.Rajini acted as one of the external examiner for the public viva voce examination of Mr.MUHAMMAD HUSNAIN ASHFAQ , Universiti Malaya on 30-5-24. Dr. John Fletcher, UNSW was the other examiner.

Events Conducted

Workshops

Dr. V.Rajini, Dr. R.Seyezhai, Dr.R.Ramaprabha & Dr.M.Balaji organized a Workshop titled **IEEE-PELS Day Celebration -IGNITE-AN IDEATHON Event-** Around 10 teams participated in the Ideathon event and the top three idea presentations were awarded prizes. at offline event on 24/06/2024.

Industrial Collaboration

Dr. R. Ramaprabha & Dr. R. Seyezhai submitted a project proposal to **L & T Digital Energy Solutions** through SSN -ifound on Mar 08, 2024 for Rs. 31.33 lakhs after preliminary discussions with Mr. J. Dheepan & Mr. Giri. The first level discussion on the proposal submitted is held on April 04, 2024 with L&T technical team on April 04, 2024.

Dr. R. Seyezhai, Dr. R. Ramaprabha & Dr. M. Balaji met The **Director, Real Time Systems,** IGCAR, Kalpakkam on 12.04.2024 for second phase discussion. The team – IGCAR is asked to submit collaborative project proposal on 12/04/2024.

Other Items

Dr.R.Seyezhai, P/EEE reviewed four papers for the IEEE International Conference on **Smart Power Control and Renewable Energy 2024** to be held at NIT rourekala from 19th to 21st July 2024 on 22-04-2004.

Dr.R.Seyezhai, P/EEE demonstrated the **working of Solar Trike & E-cycle** to the II Sem. M.E., PED students for the course on Electric Hybrid Vehicles at REC & RES lab. Also, demonstrated the working of PEM fuel cell, super capacitors EV battery testing , Design of gate drive circuits for power converters. Mr.Sowrirajan, Lab assistant, EEE assisted in the demonstration on 25/04/2024.

Dr.V.Rajini, HoD/EEE and Dr.R.Seyezhai, P/EEE reviewed the list of applications for the external research internship program. After a thorough evaluation, they finalized the selection of candidates for the EEE department on 19/04/2024.

Dr.M.Balaji had discussion with **HCL Communications Team regarding M.E. Power Electronics and Drives program** on 04/04/2024.

FACULTY ACHIEVEMENTS

Continuum of Academic Excellence

Mr.Deepesh Katari & AVN Hiteshwar, III Year EEE, A succesfully completed the **two months internship at Shrimitha Energy Solutions Private Limited**, SSN Incubation Fondation.Their work was critically reviewed by the team of members comprising of Dr.R.Seyezhai, P/EEE, Dr.J.Bhuvana, ASSP/CSE and industry expert (FIS) at regular intervals on 15/04/2024.

Final year batch under the guidance of **Dr. R. Ramaprabha** completed their **internal funded student project**. Title: **Implementation of Adjustable Gain Three Port Converter Microgrid System by A. Harish, M. Karthic Thangam, A. Muthukumar (IV year) & R. B. Alagar Karthick (II Year) –** Sanctioned Amount - Rs. 23,000; Utilized amount - Rs. 22,935.

Final year batch under the guidance of **Dr. R. Ramaprabha** completed their **internal funded student project**. **Title: Development of PV fed multilevel inverter for low level power applications by S. A. Akash Raj, F. Agilbert Sesu Felick and S. Aravind (IV year)–** Sanctioned Amount - Rs. 26,000; Utilized amount - Rs. 24,887.

Final year batch under the guidance of **Dr. M. Balaji (Guide) & Dr. R. Ramaprabha (Co-guide)** completed their **internal funded student project. Title: Design and implementation of solar tracking system by M. Thanga Sheriff, N.S. Vishwajith and S. J. Raghul (IV year) –** Sanctioned Amount - Rs. 30,000; Utilized amount - Rs. 26,200.

Dr. R. Ramaprabha reviewed 2 papers for 2024 IEEE International Conference on **Smart Power Control and Renewable Energy ICSPCRE-2024** conducted by NIT, Rourkela, which will be held during Jul 19 – 21, 2024 on 17/04/2024.

Mini Technical Tour - M.E. Power Electronics and drives I-year/ 2 semester students along with research scholars doing coursework for the **subject PPE2223 – Design of Solar Photovoltaic Systems** have been taken for mini-technical tour for 2 hours on April 24, 2024 to get exposure on physical visualization & working of rooftop on/off-grid solar systems, laboratory set-ups for carrying out additional experiments/research facilities available at Solar Energy research lab.The students were explained about the 100 kW, 50 kW & 10 kW array with PCU. They also visited the research facilities in SSNRC. Mr. Balaji, SSNRC explained the solar cell fabrication lab facilities to the students. This was arranged and accompanied by **Dr. R. Ramaprabha,Associate Professor/EEE** who handled the subject on 25/04/2024.

Dr. Rajesh Panda Reviewed 5 conference papers for **8th Students' Conference on Engineering and Systems (SCES2024)** to be held at MNNIT Prayagraj from June 21-23 2024.

Dr. Rajesh Panda Submitted reviewer comment for the **Journal Carbon management,** Taylor and Francis on June 25,2024

Dr. R. Seyezhai, P/EEE conducted the third review for II Year M.E., PED and the projects were reviewed by the **Industry expert Ms. E. Maheswari, Senior Engineer, BOSCH, Coimbatore.** She interacted with the students regarding the opportunities in industries and reviewed the projects.

Dr. R. Ramaprabha, ASSP/EEE arranged demonstration of the usage of **Fluke TiS20 Thermal Imager by M/s. Elmack Engineering Services Pvt. Ltd., Chennai** on May 09, 2024 at 10.00 a.m. at LIC Lab. The faculty members, Lab technicians & research scholars got trained to use this equipment.

Dr. Rajesh Panda acted as a reviewer and submitted review comments for journal **Energy Conversion and Economics, IET**.

Dr. Rajesh Panda acted as a reviewer and submitted review comments for **Journal International Transactions** on Electrical Energy Systems.

The NBA expert team visited dept of EEE for **accreditation** on 31-5-2024 and 1-6-2024.

Dr.V.Rajini on 06/06/2024 completed 3 reviews for manuscript submitted to **International journal of Frontiers in energy research.**

Dr.V.Rajini attended the exit meeting of NBA visit on 01/06/2024.

Dr. R. Ramaprabha attended online meeting regarding the free software for accreditation and several other purposes demonstrated by **Campus Technology,** a portfolio company of Times of India group on June 05, 2024.

Dr. R. Ramaprabha reviewed 2 papers for **RSER (Elsevier)** on June 19, 2024.

Dr. Sajjan Kumar reviewed two papers for **8th edition of the 2024 IEEE Students Conference on Engineering and Systems (SCES-2024),** organized by the Department of Electrical Engineering, MNNIT Allahabad on 27/06/2024.

FACULTY ACHIEVEMENTS

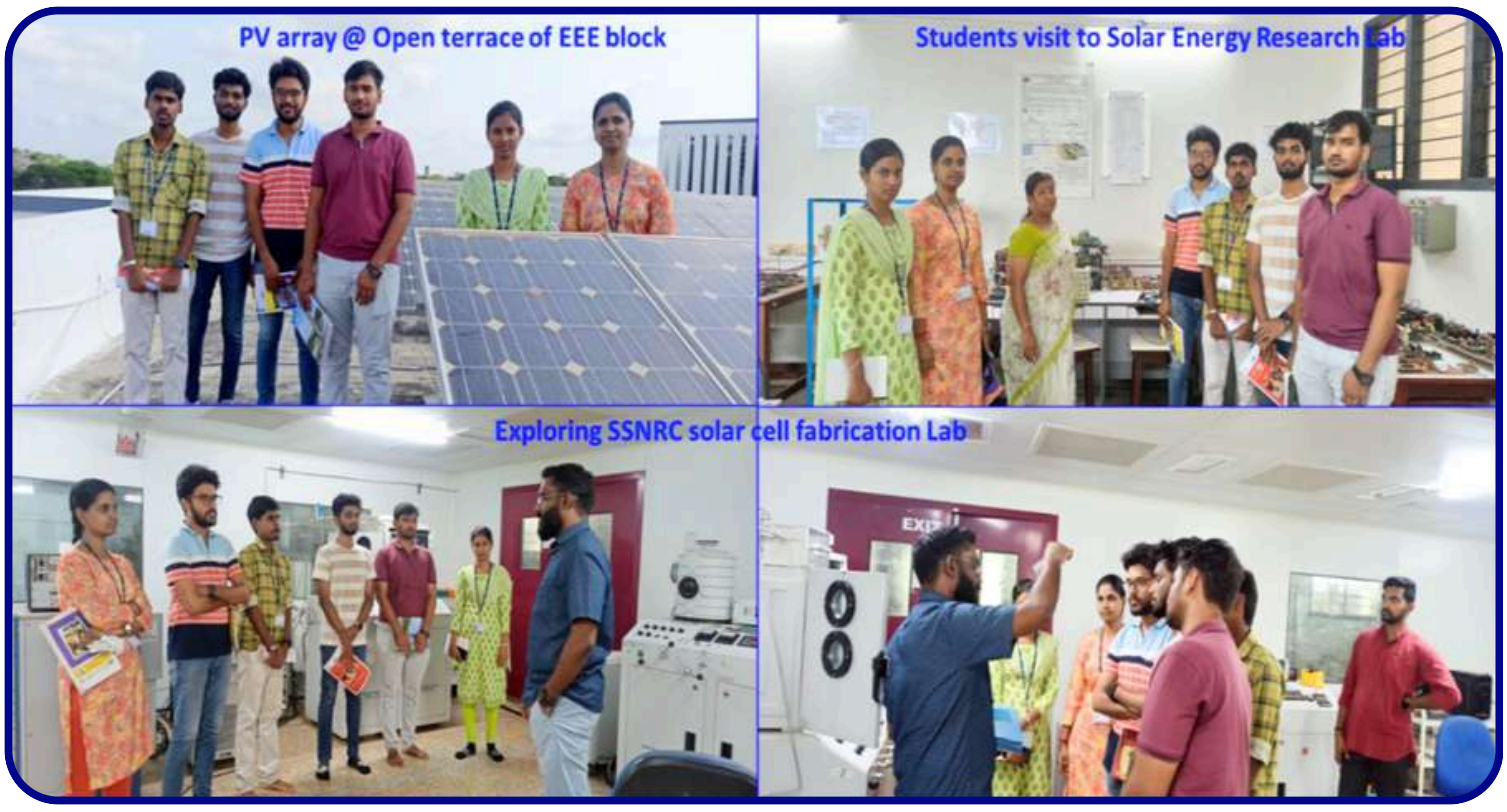
Continuum of Academic Excellence

Mini-Technical Tour

Report by Dr. R. Ramaprabha

On April 24, 2024, the first-year, second-semester M.E. Power Electronics and Drives students, along with research scholars enrolled in the coursework for PPE2223 – Design of Solar Photovoltaic Systems, participated in a mini-technical tour. This two-hour tour aimed to provide students with hands-on exposure to the physical visualization and operation of rooftop on/off-grid solar systems. The event was organized to enhance their understanding of solar photovoltaic systems through direct interaction with advanced laboratory setups and research facilities.

During the tour, the students were introduced to various solar arrays, including 100 kW, 50 kW, and 10 kW systems, along with their Power Conditioning Units (PCUs). This exposure was crucial in helping them grasp the intricacies of solar power generation and management. Additionally, the group visited the research facilities at the SSN Research Center (SSNRC), where they were given an overview of the solar cell fabrication lab.



Mr. Balaji from SSNRC provided detailed explanations of the solar cell fabrication processes, enriching the students' knowledge about the practical aspects of solar cell production and the cutting-edge research being conducted in this field. The entire tour was arranged and accompanied by Dr. R. Ramaprabha, Associate Professor, who also handles the subject PPE2223. Dr. Ramaprabha's guidance ensured that the students could connect theoretical knowledge with practical applications, making the tour a highly educational experience.

Overall, the mini-technical tour was a significant opportunity for the students and research scholars to witness the real-world application of their studies, fostering a deeper understanding of solar photovoltaic systems and inspiring future research and innovation in the field.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

Interaction with Final Year Students

On April 25, 2024, Dr. J Sujanth Roy, a Senior ASIC Design Engineer at Aheesa Digital Innovations Pvt. Ltd. in Chennai, engaged with final-year Electrical and Electronics Engineering (EEE) students at SSN College of Engineering. During this interaction, Dr. Sujanth provided valuable insights into current industry requirements, helping students understand the skills and knowledge necessary to succeed in the rapidly evolving field of ASIC design and digital innovations.

He also took the time to evaluate the students' project works, with Dr. Thiyagarajan, offering constructive feedback and professional guidance to enhance their academic and practical endeavors. This session not only bridged the gap between academia and industry but also inspired students to align their projects with real-world applications and industry standards. The interaction was highly beneficial, fostering a deeper understanding of industry expectations and preparing students for their future careers.

Seminar on Impact of Energy Storage on Power Systems

On May 9, 2024, a significant seminar was organized by Dr. R. Deepalaxmi, Associate Prof. in the Seminar Hall of the Electrical and Electronics Engineering (EEE) Department at SSN College of Engineering. The seminar, titled "Impact of Energy Storage System on Power Systems," featured an in-depth lecture by Prof. Dr. C. Vaithilingam, a distinguished faculty member from Vellore Institute of Technology (VIT) in Chennai.

Dr. Vaithilingam's expertise in the field brought valuable insights into the evolving role of energy storage systems in enhancing the efficiency and reliability of power systems. The event attracted a diverse audience, including students, faculty members, and industry professionals, fostering a rich exchange of ideas and knowledge about the future of energy storage technology.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

Circuit Craft Event

Aswin Kumar A, 2nd Year

On May 17, 2024, the IEEE Power Electronics Society hosted an exciting event titled "Circuit Craft," a circuit simulation competition designed to test and enhance participants' skills in circuit analysis and problem-solving. The competition saw a remarkable turnout with around 100 participants, either competing individually or forming groups of 2-3 members.

Each team was allocated 100 points and presented with a complex question statement that needed to be solved within the allotted time. The competition was structured to include strategic elements; teams had the option to exchange their points for hints if they found the problem particularly challenging. This added a layer of decision-making, as teams had to balance the need for assistance with the desire to retain as many points as possible.

The competition concluded with the announcement of the winners. Their victory was a testament to their exceptional problem-solving skills and adeptness in circuit simulation.

Winner: Ashwin Kumar A, Dipak Kumar B, Francis Rohith A (2nd Year)

First Runner: D Shyamsundar, Sidharth S, Venkatachalam (2nd Year)

Second Runner: Ajitessh R, Rithvikha V, Anamika Arivu (3rd Year)

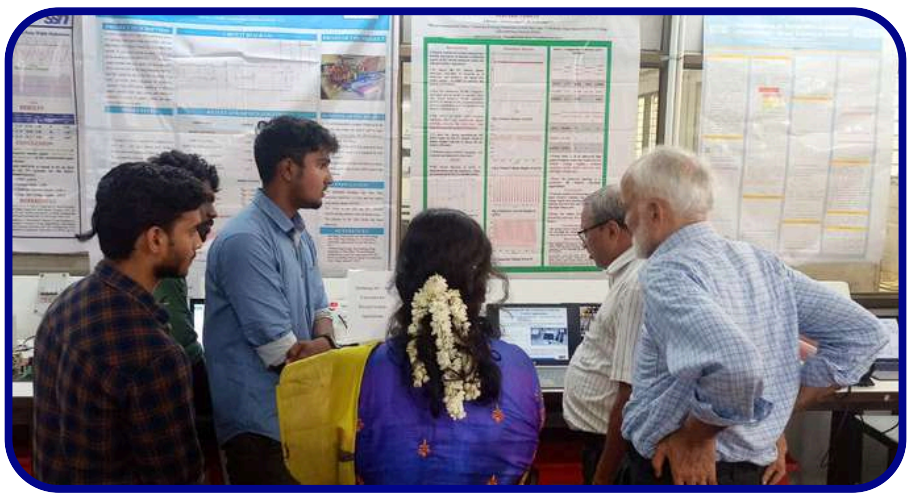
The event was highly praised for its organization and educational value. Participants left with a deeper understanding of circuit simulation and enhanced problem-solving abilities. The "Circuit Craft" competition not only provided a platform for students to showcase their talents but also significantly contributed to their learning experience in the field of power electronics.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

NBA Visit

On **June 1st, 2024**, the National Board of Accreditation (NBA) visited the SSN campus, focusing on the Electrical and Electronics Engineering (EEE) department. This visit marked an important milestone as the department sought to showcase its strengths and achievements.



The NBA team, **Dr. Anwar** and **Dr. Sunil Bhat,** had an engaging session with second-year EEE A and B section students. The interaction was lively and insightful, with students discussing their academic experiences and aspirations. The NBA representatives asked thought-provoking questions, encouraging students to share their thoughts and feedback on the curriculum and overall learning environment. Following the student interaction, the NBA team held discussions with the Head of the Department and faculty members. They provided valuable feedback and shared their observations on the department's performance, curriculum development, and research initiatives.

The NBA team visited the final-year students to review their technical projects. The students showcased their hard work and innovation to both the NBA officials and faculty members. During the session, the final-year students elaborated on the working mechanisms, advantages, and real-time implementation of their projects. The projects covered a diverse range of topics, reflecting the students' comprehensive understanding of their field and their ability to apply theoretical knowledge to solve real-world problems. The NBA officials took a keen interest in the detailed project presentations and engaged with the students, asking insightful questions and providing valuable feedback.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

Additionally, They also meticulously reviewed the project reports of the current year, assessing the quality and depth of the students' research and development efforts and the officials were briefed on the upcoming projects, gaining insights into the future endeavors and innovations that the students are planning.

The NBA visit was a successful and enriching experience for the EEE department at SSN. The positive feedback and recommendations from the NBA team will play a crucial role in further improving the department's quality of education and maintaining its commitment to excellence. The officials appreciated the EEE department at SSN and they mentioned about well-defined vision, mission and PEOs, good structure of curriculum with industrial participation, good research and project works with consultancy. Also they suggested to improve the knowledge about entrepreneurship among students in the assesssment period and on creating impression on students for pursuing higher studies. Finally they mentioned that EEE department has made a good impression in overall processes and awarded 6 years of Accreditation.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

PELS Day Celebrations 2024 Event: Ignite – Ideathon

Date: 24.06.2024 & **Venue**: EEE Seminar Hall

Event Overview:

The PELS Day 2024 event, titled "Ignite," was a highly successful ideathon organized by the SSN IEEE PELS Student Branch Chapter. This event brought together bright minds to tackle a range of topics, including those aligned with the United Nations' Sustainable Development Goals (SDGs). The ideathon was honored by the presence of Associate Professor Venmathi from St. Joseph's College of Engineering as the chief guest.

Conducted by:

The ideathon was meticulously organized by the IEEE PELS SBC Team of 2024-25 under the guidance of Dr.V.Rajini, Prof. & Head/EEE and Dr. R. Seyezhai, the faculty in charge. Their collective efforts ensured the event's smooth execution and success.

Jury Panel:

A distinguished panel of juries evaluated the participants' ideas, consisting of:

- Dr. Venmathi - Associate Professor, St. Joseph's College of Engineering
- Dr. R. Ramprabha - Professor, SSN College of Engineering
- Dr. V. Thiayagarajan - Associate Professor, SSN College of Engineering
- Dr. N. B. Muthuselvan - Associate Professor, SSN College of Engineering

Chief Guest:

Dr. Venmathi is a distinguished faculty member from St. Joseph's College of Engineering, provided invaluable insights and guidance throughout the event. Her expertise and encouragement were instrumental in inspiring participants to develop innovative and sustainable solutions.

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

PELS Day Celebrations 2024 Event: Ignite – Ideathon

Ideathon Objectives:

"Ignite" aimed to promote innovation and collaboration among students and young professionals. Participants were encouraged to devise creative solutions addressing a variety of challenges, with a particular focus on IoT-based health monitoring devices, renewable energy microgrids, and electric vehicles. The event served as a platform for showcasing ideas that contribute to technological advancement and sustainability.

Event Proceedings:

The ideathon commenced with an inspiring opening speech by Associate Professor Dr Venmathi, who underscored the importance of integrating sustainable practices in engineering and technology. She highlighted the crucial role of young innovators in achieving the UN's SDGs and driving societal progress.

Participants participated in teams and presented ideas particularly focusing on:

- IoT-Based Health Monitoring Devices
- Renewable Energy Microgrids
- Electric Vehicles
- Energy Conservation Promoting App

THE EEE SPARK

Dynamic chronicles of events and innovations in the EEE department

PELS Day Celebrations 2024 Event: Ignite – Ideathon

1. IoT-Based Health Monitoring Devices: This project proposed innovative devices designed to monitor patients' health in real-time, providing critical data to healthcare providers. These devices could track vital signs and send alerts in case of anomalies, significantly improving patient care and response times.

2. Renewable Energy Microgrids: A project focused on developing localized microgrids powered by renewable energy sources. These microgrids are designed to enhance energy access and reliability in rural communities, reducing dependence on traditional power sources and promoting sustainability.

- Electric Vehicles (EVs): Various teams explored different aspects of electric vehicle technology, including efficient battery management systems, smart charging infrastructure, and integrating renewable energy sources with EVs. One notable project proposed a network of IoT-enabled smart charging stations that optimize energy use and provide real-time data to users and grid operators.

- Energy Conservation Promoting Apps: Teams developed innovative apps aimed at promoting energy conservation. These apps provide users with real-time data on their energy consumption, tips on reducing energy use, and incentives for adopting energy-efficient practices. One project featured a gamified approach to encourage users to compete in energy-saving challenges, fostering a community-driven effort towards sustainability.

Winners:

The Ideathon concluded with the announcement of the winners:

First Place: Chennai Institute of Technology
- Team Members: Ajay Nirmal, Kishore, Diwakar, Faiz Mohammad

Second Place: SSN College of Engineering
- Team Members: Vineeth, Ajiteesh, Justin

Third Place: SRM KTR College of Engineering
- Team Members: Lenin Valentine, Arshad Ahmed

The PELS Day 2024 ideathon, "Ignite," concluded with a closing ceremony where Associate Professor Dr. Venmathi commended all participants for their innovative ideas and dedication to sustainability. She encouraged them to continue developing their projects and seek opportunities for real-world implementation.

The event successfully highlighted the innovative potential of the participants and emphasized the significant impact of IoT, renewable energy, and electric vehicle technologies in advancing sustainability. "Ignite" served as a catalyst for fostering a culture of innovation among the next generation of engineers and technologists, setting the stage for future advancements in these critical areas.

CAMPUS BUZZ

Exploring the vibrant pulse of campus life and activities

ExLog - National Level Mathematics Symposium

Hemavathy T E, 2nd Year

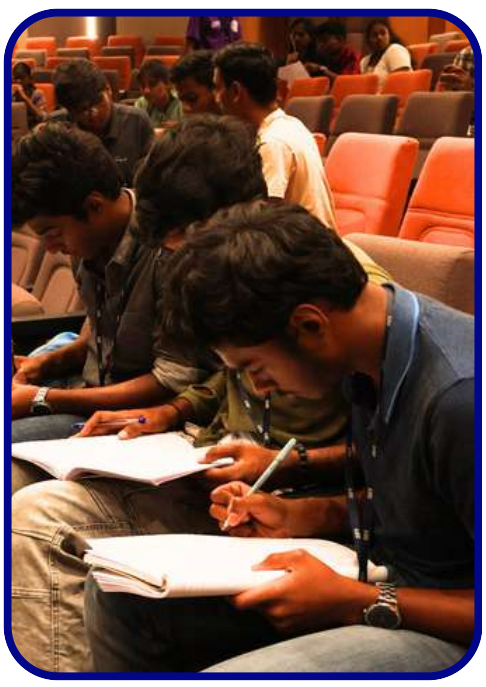
ExLog, a prestigious national - level symposium focused on mathematics, was recently held with great enthusiasm. The event was led and organized by senior students from various departments. Participants from multiple colleges joined the competition eagerly, forming teams of up to three members each.

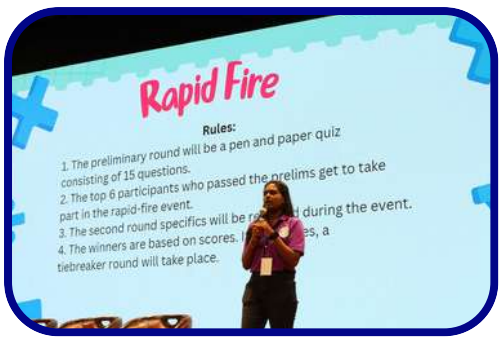
The symposium featured four challenging rounds. The first round, named Connexions, was particularly tough with highly challenging questions. Despite the difficulty, the students persevered, and the top three teams were selected to move forward.

The second round, Medley, offered a bit more fun and featured easier questions compared to Connexions. However, it posed a unique challenge: one member of the team had to solve a question and pass it on to the next member without any discussion. The top three teams from this round advanced to the next stage.

The third round was the Rapid-Fire round, which saw many participants backing off due to its intensity. Nonetheless, the teams that participated excelled, and the top three teams were selected once again.

The final round, Kahoot, was an open round that brought all the teams together in a cheerful competition. This round was particularly enjoyable as it was conducted using the popular app Kahoot, with questions that were both engaging and fun.
At the conclusion of the symposium, winners from each round were awarded, and all participants received certificates via email.





Exlog proved to be a memorable event, showcasing the talents and enthusiasm of students in the field of mathematics.

CAMPUS BUZZ

Exploring the vibrant pulse of campus life and activities

NSS Sustainability Week

Date: 11.05.2024 - 17.05.2024

Dhanushram K, 3rd Year

The NSS unit of SSN College hosted its inaugural Sustainability Week, From May 11th to May 17th, 2024, featuring events like a Mini Marathon, Awareness Talk, and Documentary Screening to promote sustainability and environmental stewardship with minimal resource use in our college campus.

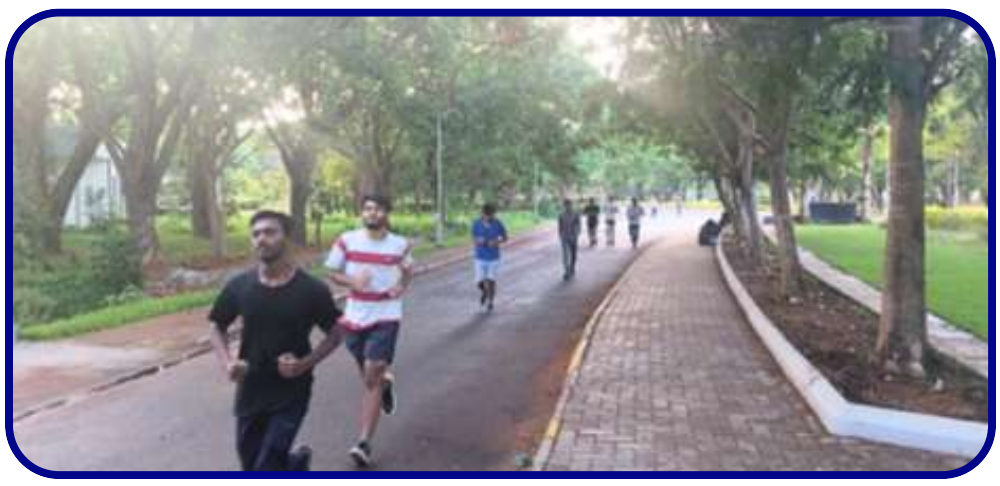
The week began with an online inauguration led by coordinators Uvaraj G S and Pavan V from 3rd year MECH and ECE, attended by over 160 participants. They emphasized the importance of youth involvement in environmental initiatives, motivating attendees for the week ahead. On May 12th, a Mini Marathon was held on the SSN campus, promoting health consciousness and environmental awareness. About 50 participants ran from the Main Gate to the Cricket Ground, with e-certificates awarded to the top ten finishers, showcasing the community's commitment to sustainability.

The Awareness Talk by Mrs. Kaythry, NSS Program Officer, featured on 13th May, who discussed the 17 Sustainable Development Goals (SDGs) and India's role in achieving them. With 60-70 students in attendance, the event highlighted issues such as women's welfare, poverty alleviation, and hunger mitigation, fostering an engaging session on sustainability.

In collaboration with the Environment Foundation of India (EFI), a documentary on the Palar River was screened on May 14th, educating around 50 students about the river's significance and the challenges it faces. Attendance was tracked digitally, aligning with the event's sustainability goals.

On May 15th, the NSS unit organized a Nature Photography Event, inviting volunteers to capture the campus's natural beauty. With 162 participants submitting over 400 photographs, the event celebrated the campus's flora and fauna, encouraging environmental appreciation and stewardship.

Prizes were awarded for the best photographs, further incentivizing participation. The Presentation Event on May 16th focused on themes like social entrepreneurship and green engineering. Fourteen teams presented their sustainable ideas, with two teams, "Akshpsthan" and "N-Guys," winning top honors. The event was judged by Mrs. Roopa from SSN iFound, whose feedback enriched the participants' understanding of sustainability.



The final day, May 17th, featured a sustainability-themed quiz conducted digitally, with winners Srinath S V from 2nd year EEE and Ananth S P from 2nd year CIVIL, received eco-friendly prizes. The week concluded with a valedictory ceremony, where the NSS sustainability wing logo and newsletter were unveiled. Prize winners were recognized, and Dr. P Vijayalakshmi delivered a speech on the importance of sustainability, capping off a successful and inspiring week. Many NSS volunteers from EEE Department participated in these events. NSS Sustainability Week was a significant step toward promoting sustainable development within the SSN community. The initiative successfully utilized digital tools to minimize resource use, emphasized reusable and recyclable materials for prizes. The event set a strong foundation to raise awareness and encourage sustainable practices, ensuring a "future-ready" world.

CAMPUS BUZZ

Exploring the vibrant pulse of campus life and activities

IEEE CS Orientation

Hiba Tasneem, 2nd Year

IEEE CS conducted an orientation session on 10th May. It was an informative session on the functioning of the IEEE CS club and how the members interact and learn new skills in the field of programming. The session began with a basic intro in why we were gathered and what we will be seeing that day. There was a fun introduction of the present members of the club followed by the achievements of the members. We also saw a video of ex members of the club telling us how the club helped them grow in their fields. We saw how the club is helpful for building network with other developers and programmers. We got an insight on how to develop our skills by participating in hackathons. We also had a quiz at the end which was entertaining and informative. I learnt about how I as a non CSE student can also participate in hackathons and CSE events. We were motivated to participate and learn more by involving in the IEEE club.

CAMPUS BUZZ

Exploring the vibrant pulse of campus life and activities

28th College Day Celebrations

The 28th College Day function at SSN on 24th April 2024 was a grand celebration of the institution's achievements. The event began with a warm welcome address, setting a positive tone for the day. The Managing Director of L&T Constructions Ltd. was invited as the chief guest, was honoured, followed by the insightful speech from President Dr. Kala Vijayakumar and Vice Principal Dr. S. Radha. The chief guest delivered an inspiring speech, motivating all attendees.

The principal Dr. V. E. Annamalai took the stage next, elaborating on SSN's numerous achievements across academics, sports, and research, emphasizing the institution's commitment to holistic student development.

The highlight of the event was the prize distribution ceremony. It began with honoring academic achievers along with their parents, from each department, who were awarded cash prizes, certificates and medals for their exceptional performance. This was followed by the recognition of winners and runners-up in various intra and inter-college events and hackathons, who were also awarded medals, in which many winners got cash prizes.

These prize distributions give the motivation and encouragement for the students to perform well in upcoming years. The faculties of all departments who performed well in both teaching and research part are also honoured and awarded by the institution.

The heads of all clubs and organizations in SSN were acknowledged for their leadership, and the organizing teams of Instincts and Invente were honoured for their successful event management.

Faculty members were recognized for their outstanding performance and contributions to the institution. The ceremony culminated in the announcement of the best outgoing students, with awards presented for excellence in academics, sports, and overall performance.

A special highlight was the recognition of **Thaga Sheriff M** as the **Best Outgoing Student of the EEE department**. His dedication, hard work, and all-round excellence set a benchmark for his peers and brought pride to the department.

The function concluded with a heartfelt vote of thanks, expressing gratitude to all participants, organizers, and attendees. It was a vibrant celebration, reflecting the achievements and spirit of the SSN community.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Future of Semiconductor Industries in India

-Vasanthakrishnan S, 3rd Year

India's semiconductor industry is rapidly evolving, transitioning from being a global design powerhouse to becoming a burgeoning manufacturing hub. With increasing investments, government initiatives, and a skilled workforce, India is poised to become a significant player in the global semiconductor market. This growth is driven by the rising demand for electronics, advancements in technology, and strategic collaborations with international firms. By strengthening its semiconductor ecosystem, India aims to reduce dependency on imports, enhance its position in the global supply chain, and foster innovation and economic growth.

Current Scenario of the Industry

The semiconductor sector in India is experiencing significant growth, with around 30% of new global capability centers (GCCs) established in India during the last December quarter focusing on semiconductors. This reflects a rising interest in utilizing local talent for various aspects of semiconductor development. The Nasscom-Zinnov report stated that the global semiconductor talent pool is 2.3 million, with the US, China, and India collectively comprising 50% of this pool.

Bengaluru and Hyderabad host around two-thirds of the semiconductor GCCs in India, housing over two-thirds of the total 55 semiconductor GCCs. With more than 95 GCC units and a specialized workforce of 50,000, this underscores India's dedication to the semiconductor industry. Top global chip design companies, including Intel, Texas Instruments, AMD, Nvidia, and Qualcomm, have design and R&D centers in India.

Recently, AMD inaugurated its largest global design center in Bengaluru, planning to employ around 3,000 engineers in the coming years. The AMD Technostar campus is part of the company's $400 million investment in India over the next five years, serving as a center of excellence across high-performance CPUs for the data center and other applications.

Measures Taken by the Indian Government

The Indian government has shown a strong commitment to advancing the semiconductor industry. In the Budget 2023-24, Finance Minister Nirmala Sitharaman allocated Rs. 16,549 crores for the Ministry of Electronics and Information Technology, reflecting the government's focus on this sector. Additionally, Rs. 3,000 crore has been allocated to the Indian Semiconductor Mission, aimed at designing and producing high-quality electronics, such as laptops, tablets, and PCs.

Production-Linked Incentive (PLI) Scheme

The Production Linked Incentive (PLI) Scheme, announced by Finance Minister Nirmala Sitharaman, involves an outlay of INR 1.97 lakh crores across 14 key sectors. The scheme aims to create national manufacturing champions, generate 60 lakh new jobs, and produce an additional 30 lakh crore in output over the next five years. This includes ten new PLI schemes introduced in November 2020, complementing the three schemes announced earlier in March 2020.

Semiconductor Manufacturing Incentive (SMI) Program

The Centre approved changes to the scheme for developing a semiconductor and display manufacturing ecosystem in India, enhancing the attractiveness of India's $10 billion chip-making initiative to investors.

Design Linked Incentive (DLI) Scheme

The National Policy on Electronics 2019 aims to make India a global hub for Electronics System Design and Manufacturing (ESDM) and develop a robust semiconductor chip design ecosystem. With 20% of the world's semiconductor design engineers and thousands of chips designed annually in India, the country is set for self-reliance and technology leadership.

The Ministry of Electronics and Information Technology's Design Linked Incentive (DLI) Scheme offers financial incentives and infrastructure support to enhance the domestic semiconductor design industry over five years, overseen by CDAC as the Nodal Agency.

The future of India's semiconductor industry is bright and promising. Electrical engineers have immense opportunities ahead with robust government support, significant investments, and leading global companies establishing a presence. As the industry evolves, engineers will drive innovation and advance technology, contributing to a self-reliant and competitive semiconductor ecosystem.

With dedication and the right skills, they can make a lasting impact on India's technological landscape and economy. The journey ahead is filled with potential.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Visit to Keltron Industries

Mohamed Anas S, 3rd Year

As part of the academic curriculum, the second-year students of the Electrical and Electronics Engineering (EEE) department at SSN College embarked on an industrial visit to Kerala. This visit aimed to bridge the gap between theoretical knowledge and practical application by exposing students to real-world industrial processes and environments. The visit spanned three days, with two days dedicated to exploring the scenic locations of Vagamon and Alleppey, and the third day focused on an educational visit to Keltron Industries, specifically the Keltrac unit, also explored Cochin. This report provides an overview of the entire visit with a detailed focus on the Keltrac visit.

Day 1 and 2: Vagamon and Alleppey

Vagamon

Our journey began with a visit to Vagamon, a hill station renowned for its picturesque landscapes and serene environment. The cool climate, lush greenery, and rolling meadows provided a perfect setting for relaxation and rejuvenation. Students had the opportunity to explore the beautiful tea gardens, enjoy the tranquility of the pine forests, and experience the thrill of trekking and jeep safari. This exposure to nature not only offered a much-needed break from academic rigors but also fostered team-building and camaraderie among the students.

Alleppey

The second day was spent in Alleppey, known as the "Venice of the East" due to its intricate network of backwaters and canals. A houseboat cruise through the backwaters was the highlight of the day. Students experienced the ecosystem of the region, observing the rich biodiversity and traditional lifestyle of the local communities. The houseboat ride also provided insights into the engineering and design aspects of traditional Kettuvallam boats, sparking interest in marine engineering.

Day 3: Keltron Industries Visit

Introduction to Keltron

Kerala State Electronics Development Corporation Limited (Keltron) is a premier electronics enterprise in Kerala, known for its pioneering efforts in electronics manufacturing and innovation. Keltron operates several units specializing in different aspects of electronics and technology. Our visit was scheduled to include multiple units, but due to unforeseen circumstances, we were only able to visit Keltrac, one of Keltron's divisions.

Keltrac: Overview

Keltrac focuses on the manufacturing and training of Computer Numerical Control (CNC) machines, along with providing foundational knowledge in mechanical engineering practices such as plumbing and drilling. This unit plays a crucial role in the development of skilled professionals in the field of CNC machining, which is vital for precision manufacturing in various industries.

Tour of Keltrac

Introduction and Orientation

Upon arrival at Keltrac, we were greeted by the unit manager, who provided an orientation about the history, mission, and operations of Keltrac. The session emphasized the importance of CNC technology in modern manufacturing and the role of Keltrac in training the next generation of engineers and technicians.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Visit to Keltron Industries

Mohamed Anas S, 3rd Year

CNC Machines

The tour began with a demonstration of CNC machines. CNC machining is a process used in manufacturing that involves the use of computers to control machine tools. The technology allows for precise control over machining processes, enabling the production of intricate and high-precision parts.

Machine Demonstration: We witnessed live demonstrations of CNC machines in action. The machines, controlled by sophisticated software, performed complex operations such as milling, turning, and drilling with high accuracy. This demonstration highlighted the importance of CNC machines in achieving consistency and precision in manufacturing.

Software and Programming: The technical staff provided insights into the software used to program CNC machines. Students were introduced to the basics of G-code, the language used to instruct CNC machines, and how CAD (Computer-Aided Design) models are translated into machine instructions. This session underscored the integration of software engineering with mechanical processes in modern manufacturing.

Mechanical Basics: Plumbing and Drilling

The next segment of the visit focused on basic mechanical engineering practices, particularly plumbing and drilling. Although these processes are fundamental, they form the building blocks of more advanced manufacturing techniques.

Plumbing Basics: Students observed the assembly and installation of plumbing systems, gaining an understanding of the materials, tools, and techniques used in creating efficient and leak-proof systems. The session covered different types of pipes, fittings, and joints, as well as best practices for ensuring durability and reliability.

Drilling Techniques: The drilling segment provided hands-on experience with various types of drills and drilling techniques. Students learned about the selection of drill bits, the importance of precision in drilling operations, and safety measures to be observed while performing drilling tasks. This practical session reinforced the theoretical knowledge gained in classrooms.

Interactive Session and Q&A

The visit concluded with an interactive session where students had the opportunity to ask questions and engage with the technical staff. Topics ranged from career opportunities in CNC machining to the latest advancements in manufacturing technology. The staff provided valuable insights and encouraged students to pursue further learning and specialization in fields of interest.

Conclusion

The industrial visit to Kerala, culminating in the tour of Keltrac at Keltron Industries, was an enriching experience for the EEE students of SSN College. The exposure to CNC machining and basic mechanical practices provided practical insights into manufacturing processes, complementing the theoretical knowledge gained in the classroom. The visit also highlighted the importance of continuous learning and adaptation to technological advancements in the field of engineering. Overall, the industrial visit successfully achieved its objective of enhancing students' understanding of real-world industrial environments and inspiring them to explore various career paths in engineering and technology.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Sports Day

Dhanishtha Sivakumar, 2nd Year

On 12th April 2024, SSN and SNUC organized its annual sports day. The event took place in the football stadium of the college. It was inaugurated by Shri. R. Srinivasan who is a national level cricketer, Assistant coach for TamilNadu State Ranji team and he is an alumnus of SSN. This sports day took place after 4 years and the students as well as the teachers took it as a great opportunity to prove their dedication and interest towards sports.

The sports day commenced with a well organized march past by the students lead by each house captain, it was followed by a running race between different houses. The teachers also took part enthusiastically in different games like short put, long put, running race, long jump, etc. This year sports day witnessed the enthusiastic participation from our EEE department and bagged many prizes by showcasing their talents in many sports.

The event came to a closing with felicitation of the winners by the respected Principal Dr. V.E. Annamalai Sir, Student Counsellor Dr. S. Nanda Ma'am and our honorable Chief Guest, Shri. R. Srinivasan Sir.

From the EEE department, Kathir Ezhil from first year won second place in 1500m race, Keerthi Sheevani from first year won first place in 800m race, first place in 400m race, second place in long jump, Sherin won gold in short put and Gold in Discus Throw. The event was well coordinated and headed by Dr. P. Balaji Sir, Director of Physical Education who gave the closing note for the event.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

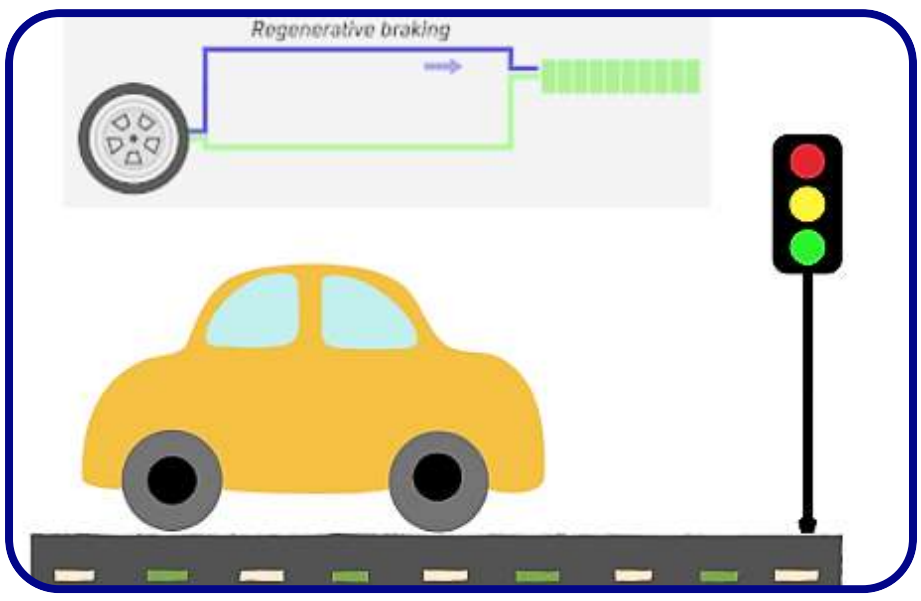
Tesla’s Regenerative Braking System

Prasanth V A, 3rd Year

Braking is essential to the driving experience, but not all systems are created equal. A regenerative braking system (RBS) is the most significant difference people notice the first time they operate an electric vehicle. Regen, as commonly referred to, makes it possible to drive a Tesla and never touch the brake pedal (along with some brake blending for slow speeds), not only reducing wear and tear on braking components but putting energy back into the battery. There are some estimates that regenerative braking can add 10 percent more range and extend the life of braking mechanisms by more than 50 percent.

What is Tesla's Regenerative Braking?

Unlike traditional brakes, which rely on friction to stop the wheels from turning, regenerative braking uses the vehicle's electric motor to create resistance to slow down the vehicle. In addition to slowing the vehicle down without the use of brakes, the motor running in reverse acts as a generator and captures the kinetic energy that would typically be lost as heat and converts it into electrical energy, thereby increasing your vehicle's range.



Extends the life of Brakes!

Regenerative braking can help to lengthen the life of your brakes. Regenerative braking slows the car reducing the work of your traditional braking system. In fact, Tesla estimates that their cars experience 50 percent less brake wear than conventional gasoline cars.

Elon Musk predicted that Tesla's Semi would have brake pads that would "literally last forever" because the regenerative system would save those pieces from being used extensively.

It's estimated that regenerative braking captures up to 70 percent of the kinetic energy usually lost during braking and is put back into the battery. As described above, that energy can then extend the range between needing to charge.

Will it activate braking light ?

During regenerative braking, Tesla will still activate the brake lights when the vehicle is slowing down, even if the brakes aren't being used at all. Tesla determines whether to turn on your brake lights based on your vehicle's rate of deceleration. If you're unsure if your brake lights are on, look at your Tesla screen, the car in the display shows the brake lights lit up when the brake lights are activated.

Levels of Regenerative Braking:

It's important to note that regenerative braking cannot be turned off. There are two regenerative braking modes for 2020 and older models — low and standard. Tesla recommends that you use standard to maximize your vehicle's range. At some point in 2020, that choice was taken away, presumably to use all the benefits of regenerative braking all the time. However, there were some concerns, as regenerative braking can slow down the car rapidly; therefore limiting traction, the vehicle could slide. Tesla has this warning on its website: In snowy or icy conditions, Model S may experience loss of traction during regenerative braking.

Conclusion:

On conclusion we can infer that regenerative breaking is one of the most innovative ideas implemented by tesla in their vehicle and it serves as a medium to save power lost in the regular breaking system of the vehicles can be stored and reused for further purposes in the electrical vehicle.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Pushing the Boundaries of Diplomacy!

Krtin Narayanan, 2nd Year

From not being able to meet the delegation criteria for several conferences in a row in 2022 to winning the coveted Best Delegation award in multiple MUNs (Model United Nations) during 2023, it has been a sensational rollercoaster of emotions for this club that's on the rise. It has been a pleasure to witness our college become the new kid on the block to beat, with our achievements moving past the Chennai circuit and even extending its reach to Banglore. A massive influx of interested students and the consistent involvement of juniors seems to have stirred the pot for this club to truly come alive, with the club setting its sights on winning even more awards for the conferences to come. Beating established colleges in the circuit is no easy task, with colleges like SRM and VIT-C constantly battling it out to see who comes out on top, they seem to have a new competitor to worry about-our very own SSN!

Club President Hrishikesh says that reaching this many people when it comes to meeting delegation criteria to even winning the awards was something which he could only dream of a few years back. He talks about the days when barely a few people from his college were forced to join delegations of other colleges to make things work and that the constant hustle and grind seems to have paid off. Club Secretary Athmaraam says that the goal of becoming a delegation started off in March last year, when they decided to stop doing private delegations once and for all and decided to grow a delegation of their own. This involved roping in juniors to specialise in various UN committees to maximise the number of points scored across the conference.

Encouraging juniors to attend MUNs involved hosting workshops to generate interest and at first the team just wanted to qualify as a delegation before striking the awards. This began with YLGC-MUN in 2023 following which the club had their first breakthrough in HITS-MUN with a runners up best delegation. In VLS-MUN 2022, they couldn’t even meet the delegation criteria, which was gut-wrenching. Fast-forward a year later and in VLS-MUN 2023, SSN finally won the best delegation award, beating VIT-C in the process for the first time. After winning in Chennai the club set its sights on Bangalore and decided to put its skills to the test there. Amazingly enough pulling off a delegation to Bangalore, which would have been a herculean task in the years past, was a piece of cake here! The specialists grabbed each committee by its neck and pushed through to bring the cups home! You read that correctly-stunningly enough SSN-MUNSOC was able to pull of the Best Delegation award twice with back to back conferences in SLCU-MUN and FMUN within the same week! If that was not enough the club truly hit it home with another set of back to back victories as best delegation in VITC-MUN 2024 and SRM-MUN 2024 - 2 of the most highly coveted conferences of the Chennai circuit!

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Pushing the Boundaries of Diplomacy!

Krtin Narayanan, 2nd Year

A lot of delegates find it thrilling to debate about the causes of real world problems while trying to find realistic solutions that enable them to further their national interests onto the world stage. While some find it fun to simply learn a lot about current affairs in the process, others MUN for the fun of it. Although this may be a simulation of the actual United Nations, the amount of energy, research and intensity these conferences require is immense . The level of competition is high and the amount of debate that happens within the four halls of the conference room is enormous. It is a constant fight amidst the battle of wits and in some cases the pen really is mightier than the sword(or a missile in this case, you never know!).

The interpretation of international law, the discussion of official United Nations documentation and the excitement of rebutting another delegate's speech are a few of things you can do in the confines of this hall of debate and deliberation. MUN conferences also act as sandboxes in which delegates constantly change strategies in rapidly evolving environments using negotiations and compromise to reach certain goals in the committee. Skills such as public speaking, team leadership and participation and consensus building are vital in 21st century corporate environments and these conferences truly enable delegates to hone and develop these skills to life. Not to mention the countless friends and connections you make with other like-minded college students across the circuit! Countless days of preparation, deliberation of committee strategies, research and effort to ensure that plans put in place attain fruitful execution is something which members of the MUNSOC have been thoroughly engrossed in for the last 1 year and to see the results payoff has been extremely fulfilling. The run of victories has just commenced and it is going to be very exciting to see just how much more is going to be conquered by this club. As Hrishekesh said "The day is not yet over and the dream never ends' '.

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Rapid Reads

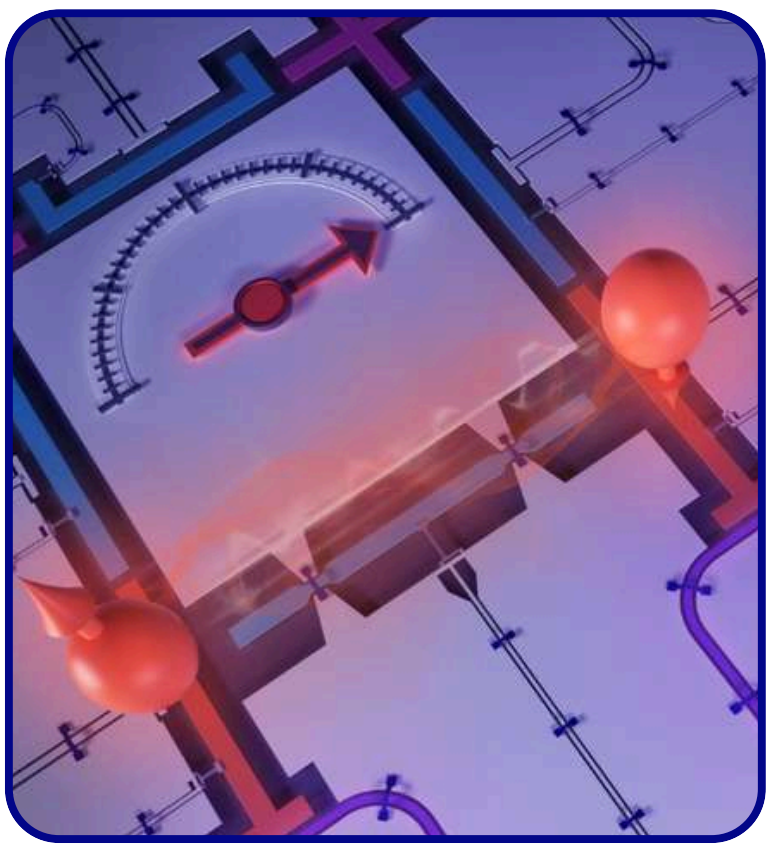
Honing in on the cutting-edge aspects of the discipline

Electricity 4.0: Revolution is the only Solution

Industrial revolutions have rapidly evolved society but also increased carbon emissions, impacting the planet significantly. To meet net-zero targets by 2050 and address rising energy costs, we must rethink energy consumption. Electricity 4.0 combines electric and digital technologies to create a greener, more efficient energy system. This approach aims to reduce waste, manage rising energy demands, and transition to electric transportation and heating.

Electricity 4.0 will digitalize the entire energy ecosystem, improving efficiency and reducing the 68% of energy currently lost. Digital tools will help monitor and manage energy use, making grids more resilient and responsive. Achieving net-zero goals requires a concerted effort to adopt digital solutions and clean energy while navigating challenges in policy and investment.

Full Article:
https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2022/09/13/electricity-40-revolution-is-the-only-solution/



Quantum Computing's Impact on Electrical Engineering: A Glimpse into the Future

Quantum computing, a rapidly evolving technology, holds immense promise for various sectors, including electrical engineering. It leverages the principles of quantum mechanics to process information in fundamentally different ways compared to classical computing. This potential revolution in electrical engineering could significantly change the design, analysis, and optimization of electronic systems.

Unlike classical bits, which are either 0 or 1, quantum bits (qubits) can exist in a superposition of states, representing both 0 and 1 simultaneously. Additionally, qubits can become entangled, meaning the state of one qubit is intrinsically linked to another, regardless of distance. This unique capability offers a significant computational advantage, potentially transforming complex problem-solving and system efficiency in electrical engineering.

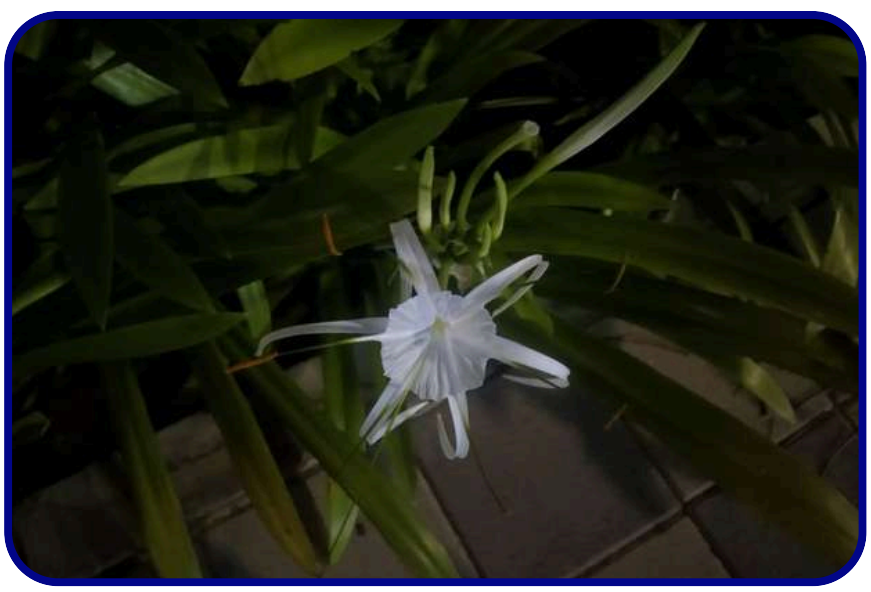
Full Article:
https://www.linkedin.com/pulse/quantum-computings-impact-electrical-engineering-poornima-mahalingam/

STUDENT ZONE

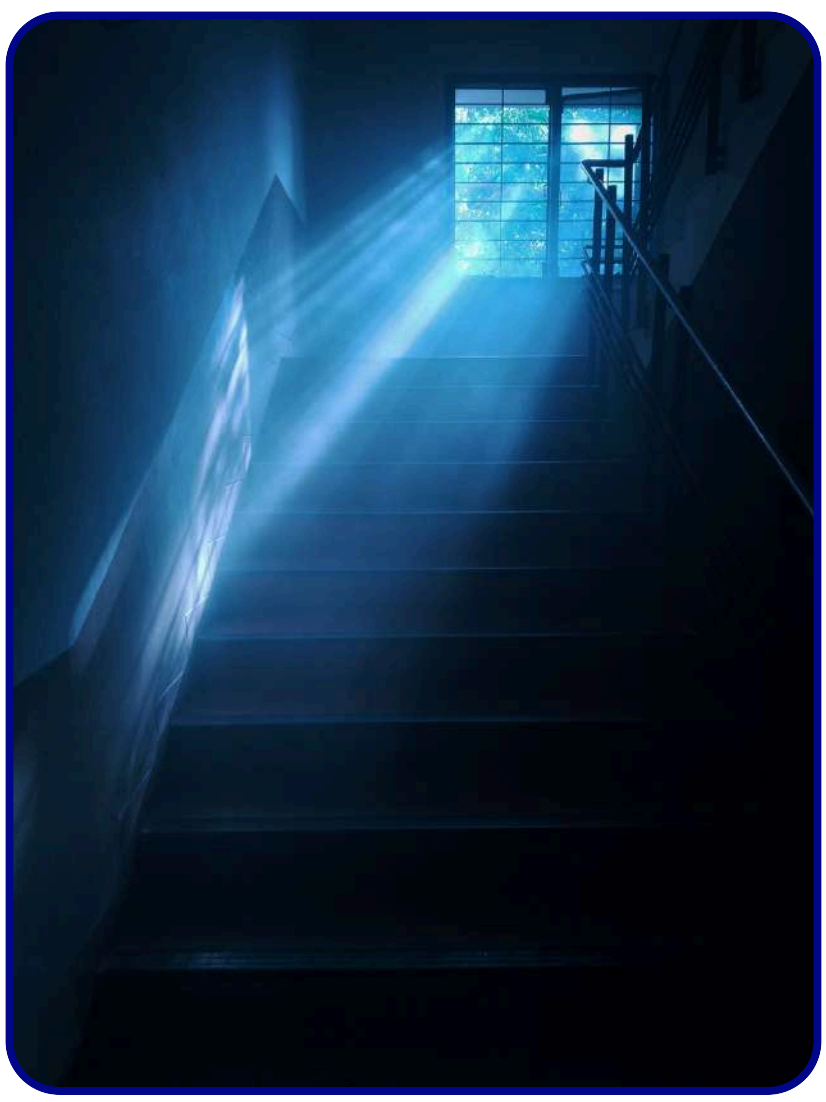
Spotlighting student excellence and creative endeavors

Through the Lens

Bhuvanesh N P, 3rd Year



Supraja Venkatesan, 3rd Year



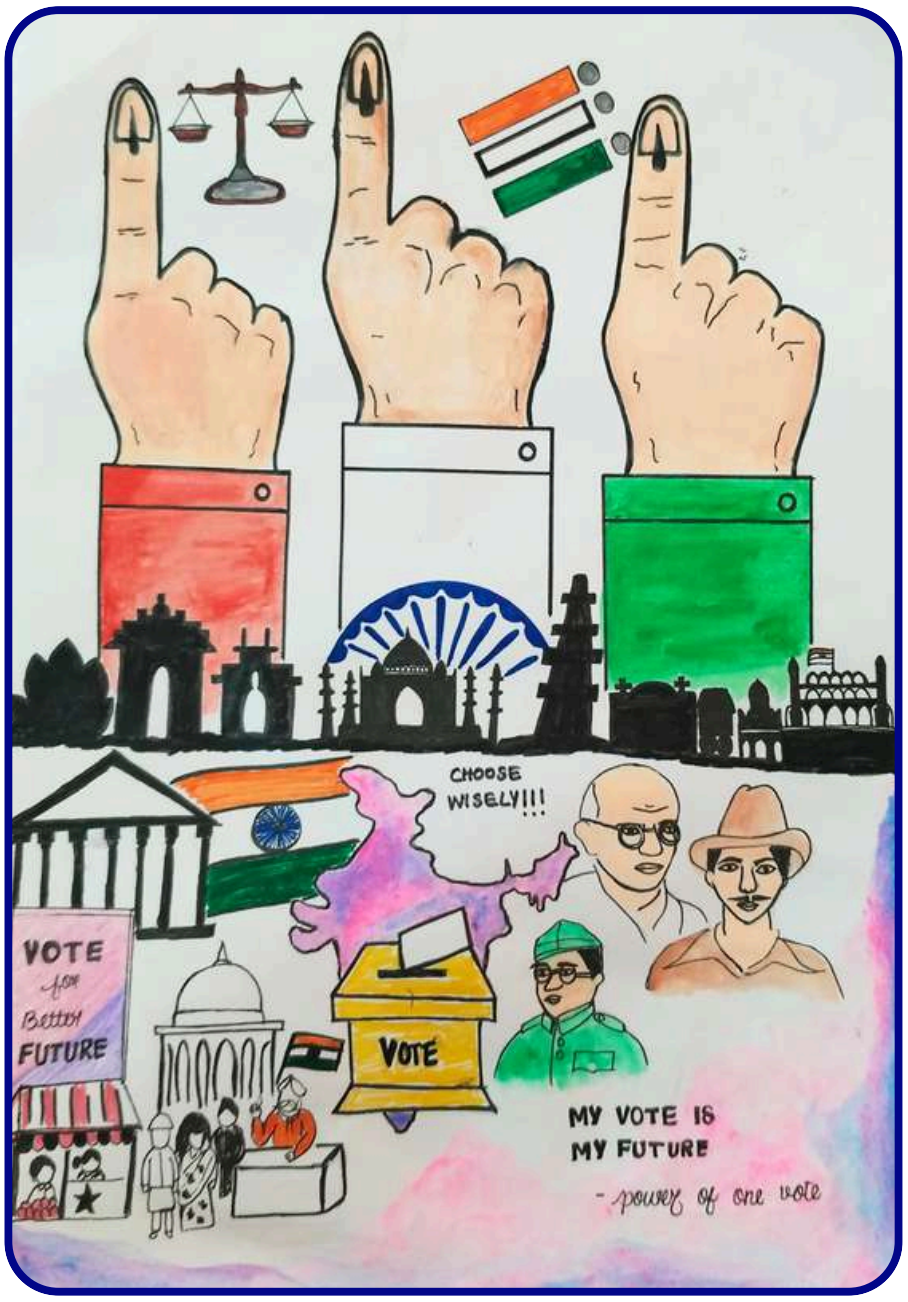
Dhanushram K, 3rd Year

Bhuvanesh N P, 3rd Year

STUDENT ZONE

Spotlighting student excellence and creative endeavors

Artistry Avenue

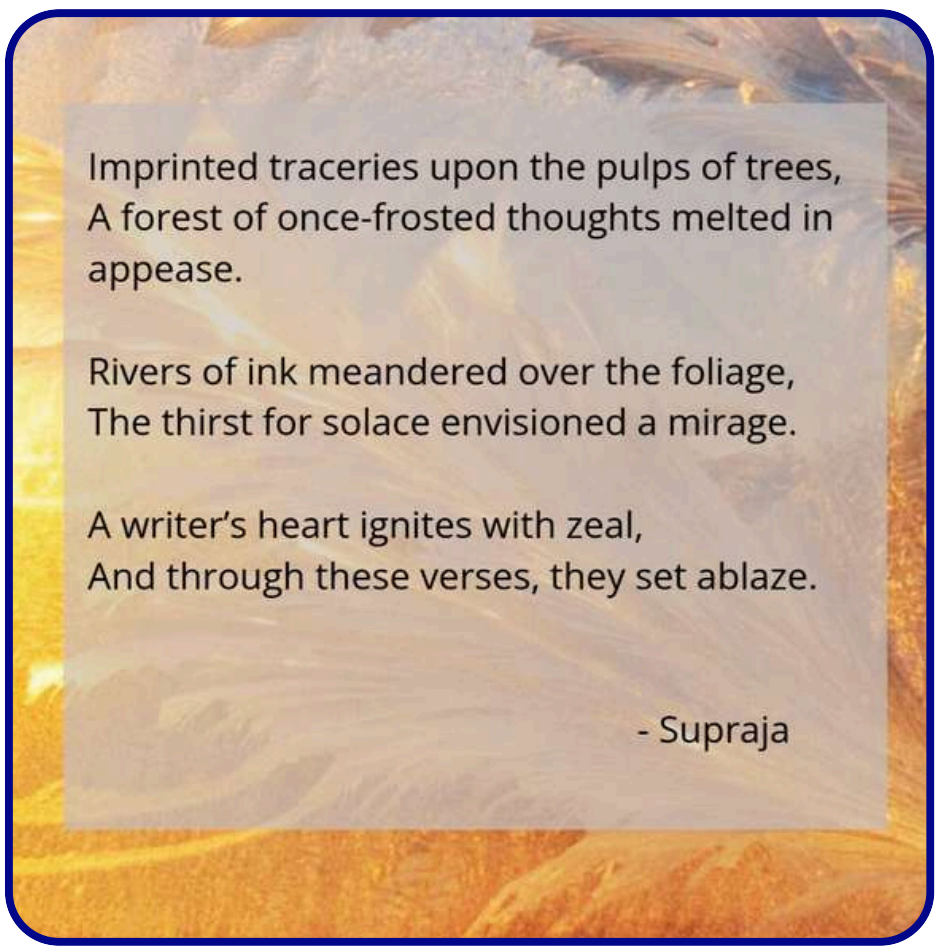


Hemalatha G V, 2nd Year

Monish Kumar S, 3rd Year

Swirling Ink

Harsha Vardhan R, 2nd Year

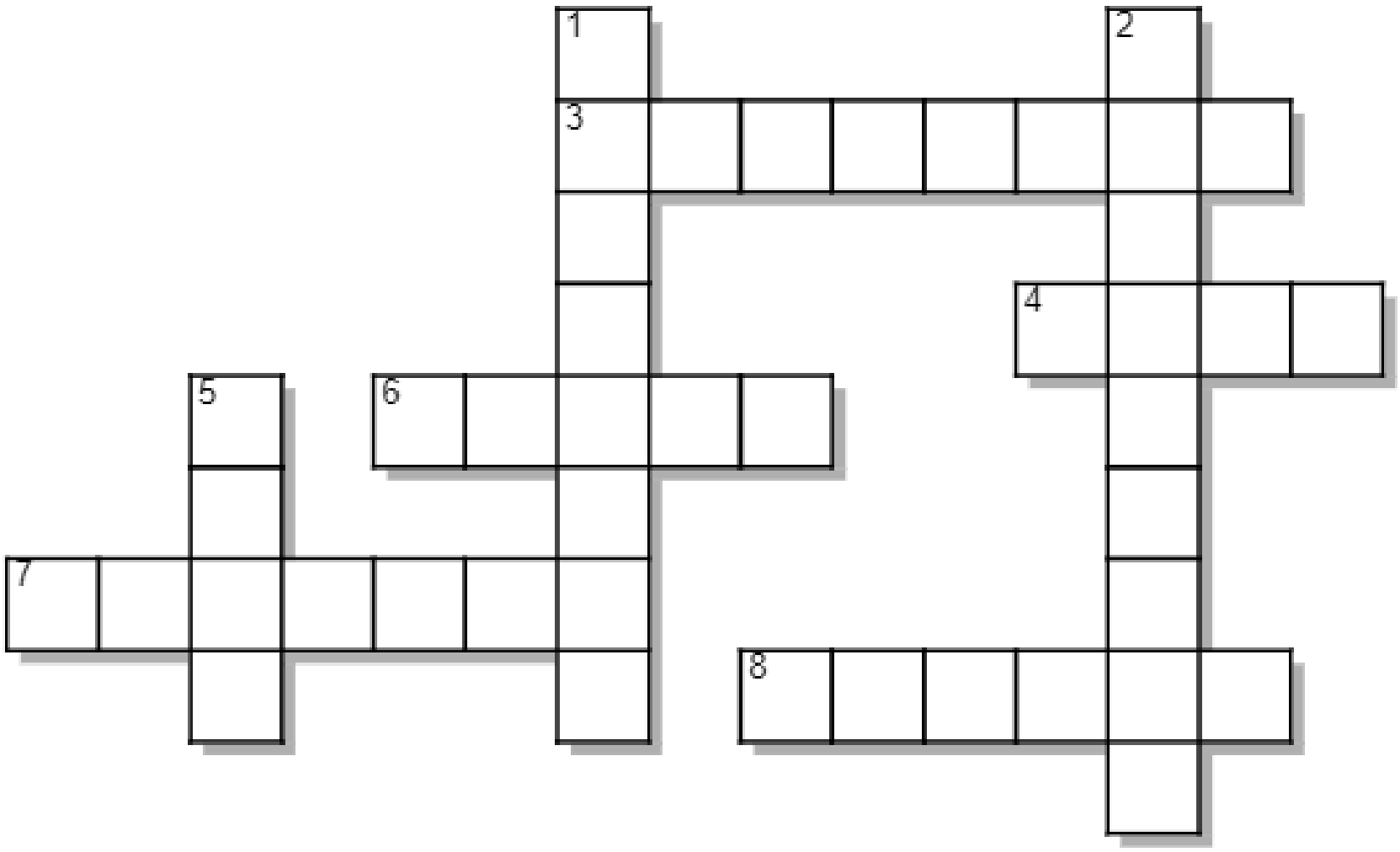


Supraja Venkatesan, 3rd Year

PUZZLE JUNCTION

Dive into the riddle realm to test your EEE prowess!

CROSSWORD



ACROSS

3 If System's characteristic equation is s^2+2=0 then system is _____

4 In which 3 phase connection, the line voltage is root 3 times the phase voltage?

6 Diode that always operates in reverse bias is _____

7 A limiter circuit is known as _____

8 In which type of component impedance is limiting the fault current mostly resistive?

DOWN

1 Which test is also called back-to-back test?

2 Device that converts AC into DC is _____

5 Which effect causes AC current to concentrate on the surface of conductor?

Scan for answers

ALUMNI CORNER

Sharing the journey that turned dreams into realities

Akshitha Blessy(IIM A)

EEE 2020 Batch

Hi all, I'm Akshitha Blessy, EEE, batch of 2020. SSN gave me the much-needed head start for my career as I got the opportunity to sit for the internship drive with Citi Bank which was translated into a PPO. I've been associated with Citi for over 3 years now in the Forex Department. SSN didn't just provide me a great opportunity at a corporate firm, but also helped me develop the skills necessary to tackle the MBA preparation as a whole. It was greatly instrumental in helping me develop the Analytical skills which was much needed. And the placement preparation which the college provided was something I carried with me when I had to sit through multiple MBA interviews. My work experience further shaped me and added as a spike in my profile due to the various projects and initiatives that I took up at work. It also helped to develop leadership skills which was an important factor of consideration by the interviewers.

My MBA preparation journey wasn't easy and it's the realisation of a 3 year long dream. I've been granted admissions into the Holy Trinity of MBA Colleges in India (IIM Ahmedabad, IIM Bangalore and IIM Calcutta) and I have decided to pursue my MBA in IIM Ahmedabad. With 3 attempts at the CAT Exam, I have gained a lot of insights into the process - be it the preparation one must do, the state of mind one should be in and also how to balance work and studies at the same time. The number of CAT takers have been increasing YoY and this starts adding pressure to the candidates. However, it's important to understand that majority of the CAT takers are taking it up without preparation and you are competing against a smaller crowd of people with extremely serious preparation.

Through 3 of my attempts at CAT, there were a couple of takeaways for me. Firstly, this exam isn't about how much you know, rather, it's about how well you've analysed the previous year papers and how you've chosen your topics of preparation. It tests on how smart you can pick the questions on the day of the examination as every section will have questions of all levels of difficulty. Secondly, it tests your time management skills as it's a short duration exam. To be cautious of time while being under pressure is something very crucial. Lastly, it's about maintaining your calm and not being overwhelmed on the D day. As a whole, CAT exam is not hard because of the extensive syllabus, rather it becomes easy if you crack the formula of preparation and your composure on the day of exam.

My personal preparation journey was fully dependent on the YouTube resources. I did not take up coaching in any of the institutes. (due to lack of time) We as engineers have an edge over the non-engineers in the Maths section and it depends on how well we use this advantage. The initial few months I put around 3 hours of preparation to strengthen my concepts in QA, to understand solving techniques in Data Interpretation and Logical Reasoning (DILR) and to enrich my vocabulary in Verbal Ability and Reading Comprehension (VARC). The last few months I did the important thing - taking up Mocks. I would have taken approximately 35-40 mocks before the actual exam. Taking mocks doesn't just end with the 2 hours exam but the extra 1-2 hours we put in to analyse these exams and have our takeaways to ensure we don't repeat the mistakes/learn the concepts better before the next mock. This is how we continue to grow and prepare for the D-day.

ALUMNI CORNER

Sharing the journey that turned dreams into realities

I want to emphasise on the kind of role your academics plays in getting shortlisted. Having an extremely great percentile sadly isn't the only criteria. Your 10th, 12th, UG CGPA and work ex happens to be extremely crucial with each IIM allotting different weightage for each of these categories. If you are a serious CAT taker, please bear in mind that your academics matter and put in the extra amount of effort in your college for good grades as it's crucial in getting your shortlists for your favourite colleges. Once you are done with CAT, gotten a high percentile and received shortlists, it doesn't mean it ends there. Getting an admission to an IIM is a long process and you'll enter the most crucial of it all - the interviews, which also requires a higher level of preparation than CAT.

Here are a few pointers to consider if you are willing to get into a top B school

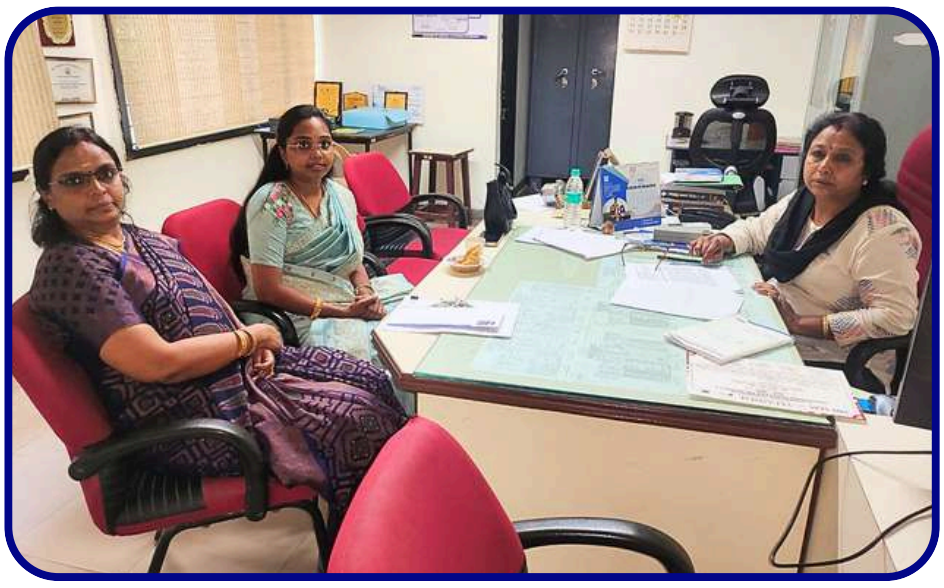
1. Start focusing on your grades in college and understand the importance of it - it has a huge role to play in your MBA admission and even further, your MBA placements
2. Diversify your profile - take part in extra curricular, club events and develop a desire to hold PORs (Point of Responsibility) in your college life - this will help your profile stand out from the result and is given a good weightage to it
3. Start your preparation early - Even if you are not going to join a B school immediately after college, it is a great idea to start your preparations early on in college so that you have enough confidence on the D day
4. Be consistent - Spare an hour or two everyday consistently so that you don't have to burn the midnight oils before the exam

With all this being said, I want to encourage you all that it isn't hard to get into your favourite B school if you are passionate about it. You just need the right mentor, a good state of mind and a strong will. If you've decided MBA in India is the route that you are going to take, start your preparations well ahead in college. It is difficult to encompass my entire experience or strategy followed in a single article, but I'm more than willing to help you all if you have any doubts or guidance regarding the CAT process and beyond. Please feel free to reach out to me on my LinkedIn or WhatsApp and I would ensure to answer all your queries.

Can't wait for you guys to get onboarded on to this process and realise your dreams of a top B school. All the best and Cheers!

Interaction with PG Alumni

Ms. Maheswari, a distinguished alumnus from the 2019 batch, recently engaged with Dr. V. Rajini, the HoD and Dr. R. Seyezhai, Associate Professor. She shared valuable insights from her professional journey and provided guidance on navigating post-graduate challenges. Her experience and advice were highly appreciated by Dr. Rajini



VISION AND MISSION

Pillars of knowledge, impact on society

Institute Vision:

- To be a world class institution for technical education and scientific research for public good.

Institute Mission:

- Make a positive difference to society through education.
- Empower students from across socio-economic strata.
- Be a centre of excellence in education in emerging technologies in accordance with industry and industrial trends.
- Build world class research capabilities on par with the finest in the world and broaden students' horizons beyond classroom education.
- Nurture talent & entrepreneurship and enable all-round personality development in students.

Department Vision:

- To inculcate the right mix of knowledge, attitudes, and character in students to enable them take up positions of responsibility in the society and make significant contributions.
- To produce talented Electrical and Electronics Engineers through quality education, to be a center of excellence and become a source of cutting edge technologies in the field of Electrical and Electronics Engineering.
- To become a preferred partner in the area of collaborative research among national and international organizations.

Department Mission:

- To achieve global eminence in the field of Electrical and Electronics Engineering.
- To be a highly preferred destination comparable with the best in the world for students aspiring to enter the field of Electrical and Electronics Engineering.
- To nurture the talent and to facilitate the students with all round personality development to make a positive difference to society through education.