Meenakshi Sundararajan Engineering College
Department of Electrical and Electronics Engineering
Volume 16, Issue 1, 16 - 28 February 2025.
Email: newsletter.eta@gmail.com

eta's newsletter

Computers will slowly... no, no... in no time, will master to code humans... Get ready for the show!!!

Images are taken from Internet search engine... and ETA claims no ownership for the same...

Send your articles to **seo.etanl@gmail.com**

Idealism, however impractical, gives a meaning to our existence.

Satyendra Nath Bose

From the Editor's Desk

Mrs. N. V. Haritha, Associate Professor, Department of EEE

Dear Students,

Its a great feeling to pen down again and meet you all through this issue. Our Newsletter was known for its consistency and the regular issues had created a strong feeling of rejoice and made all of us happy, everytime it appeared. Of course, this time, the break during the vacation was actually more.

Anyhow, the current issue evokes the same feeling of triumph as it hits the stands today.

The ongoing semester and the degree in general, and the society at large - all, equally demand highly skilled expertise from the young minds. To stay in par with the ecosystem, one has to work hard tirelessly to achieve the intended goals.

The efforts that you are taking as part of the student association, ETA and club will surely make you stay updated with the current trends in the technology.

I wish each and everyone of you to stay alert and focussed throughout your stay in the college. The efforts will never go waste and you all can reap the benefits.

The current issue has a range of articles to discuss. The author has brought the essentials of smart home automation system that leads to energy efficiency in her article. I appreciate the efforts and hope the readers take the necessary cue from the article.

The article on dark oxygen stands as an interesting piece of information. In the article on FPGA, I understand the interest shown by the young student in staying aware of the prototyping platform.

The article on advancements of AI and its impact on the society throws some light on the way, the AI revelation should be taken forward by the researchers. As usual, the issue ends with a discussion with Dr. Knowe.

Happy Reading!!!

Student President's Desk

Krishna Priya. S, Student, IV Year EEE

Hi Friends,

Its good to start afresh after a break. A long break, indeed.

There was a slight delay in all the events during this academic year. The delay is understandable, as the academic schedule was hectic. However, with the onset of Newsletter, which was the only wing that was consistent through out the history of various Executive Councils headed by the previous student presidents, I strongly believe that other events will happen, defying all the odds in the current academic year. I sincerely appreciate the editoral team for bring in such a thoughtful issue for all of us to understand and cherish the knowledge. Together, we can recreate the magic as done by our senior friends.

The students were happy as the time is nearing to the annual sports day and there were good participation from our department as well.

I appreciate three of our student friends who have contributed to the newsletter through their articles.

There are three events that are planned as part of the secretarial wing. Mrs. Farzana Mam of the Dept. of English and Mr. Murali Krishnan of MKAero and our senior Mr. Shakeel Ahamed have been approached for charing the session as the expert for the coffee table chat on 28.03.2025, 11.04.2025 and 21.03.2025. Hoping that the events turn back successful. I am eagerly waiting for this year's edition of YSC 2025. Thank you all.

Energy-Efficient Home Automation

Smarter Living for a Greener Future

Vigneshwari Jaya, Student, III EEE

In today's eco-conscious world, energy-efficient home automation is transforming how we live, making sustainability simple and convenient. With smart technology, reducing your energy consumption doesn't require effort—it happens automatically, saving you money while lowering your carbon footprint.

Well how Does It Work?.... Smart systems use sensors, timers, and real-time data to manage energy use efficiently. They learn your habits, adjust automatically, and ensure that devices are only on when needed—giving you control and savings without the hassle.

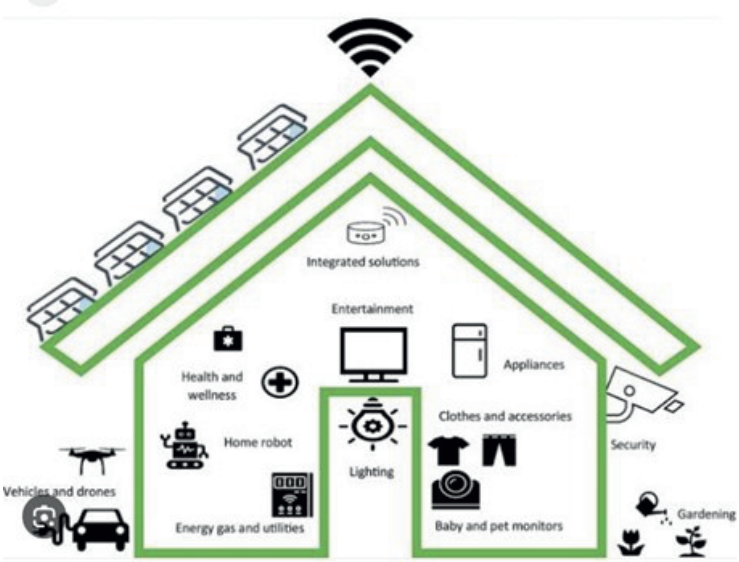
There are some smart Solutions for Sustainable Living such as smart thermostats, automated Lights, which uses motion sensors to prevent energy waste.

Apart from this, energy monitoring systems which track your electricity usage and smart power strips that Cuts off power to idle electronics are used for reducing energy losses.

Why Make the Switch?.... Smart automation offers more than convenience—it brings real savings and environmental benefits. It reduces energy usage, lowers utility bills, and enhances comfort, all of this while minimizing your carbon footprint.

As technology evolves, so will our ability to live more sustainably. Embracing smart home automation today means investing in a greener, smarter, and more efficient tomorrow. It will be the future of smart living.

Ready to make your home smarter and your lifestyle more sustainable?.... The future of energy-saving living starts now!



I am not concerned... rather, I am thrilled!!!

S. B. Sivasubramaniyan, AP/EEE
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My Dear Friends...

This is a great pleasure to me, personally, as the issue marks a long awaited one. Due to hectic schedule, our department's student association's brain child, our ETA Newsletter, had a temporary halt and took a long winter vacation for so long. I am feeling happy and I am equally happy in writing in it. I just want to share a newspiece that I gone through recently.

Everytime, I happen to read the accomplishments of Artificial Intelligence (AI), these days, I also happen to read the limits that the advancements in AI could reach that may result in job-loss for the future generations. This got augmented, when Prof. Hinton appeared on phone screens to share his opinion on the dangers of AI. Prof. Hinton was awarded Nobel in 2024 for his pioneering work in AI. Something interesting happened almost half a year ago when, Author Joanna Maciejewska wrote in social media as follows, "I want AI to do my laundry and dishes, so that I can do art and writing. not for AI to do art and writing, so that I can do my laundry and dishes."

Yes, thats a concern. A serious concern indeed. One side, we foresee the dangers associated with unregulated use of AI. The other, the resulting, highly speculated and feared, job loss. However, my inner voice whispers to me that, I have a complete different understanding. Yes, I am not concerned. I am not concerned on the advancements of AI.

A recent newspiece that I read was the reason. Yes, I always tend to get inspired by the evolution of living organisms in our planet. Yes, the evolution that we talk, has taken millions and millions of year slow process, that we sit and discuss this topic, right now. Our motion, our response to the environment, our own biological structure, the way we perceive things in our brain, the way plants harness solar energy to cook their own food... all these are coded within us. The worry is that we do not yet know or fully understand the way it was coded. It happens because of what we refer as proteins.

Ribosomes build proteins from the codes present in the genome. For us to exist in the way we are today, it took, as i wrote little earlier, millions and millions of years. The advancements in AI, in the recent days, has made it possible in a matter of days. Yes, the labs with AI assisted methods has claimed to have created artificial green fluorscent protein (AGFP). The green fluorscent protein is actually found in jelly fish, corals, sea anemones and the other marine organisms.

The purpose of green fluorscence is unknown as far as marine organisms are concerned. However, the organisms exihibit bioluminescence. Fine, let me come back to the article that I read. My dear friends, the artcile was on 'biological intelligence'. The lab simulations coded and developed proteins for AGFP which stood almost similar to 58% of the fluorescent protein known. It is astounding in the sense that the simulation was equiavalent to what happened over 500 million years of evolution.

Yes, I am thrilled, rather being concerned what AI could do to humanity as a whole. Of course, there is a sense of responsibility on the nature and scope of the simulations and experiements that could be carried out. That cannot be and shouldnt be an hindrance to the potential advancements, that AI could make.

My dear friends... The article that I read did not end there. It discussed the production of an enzyme to elimianate plastic waste. It is done to degrade polyethylene terephthalate (PET). This makes me even more thrilled on the impact of AI to the modern society.

The diseases can be cured by carefully programming proteins!!! That was done by bruteforce so far, I believe. Now we can know the language with which we are coded and could possibly change the code for reversing the ailments. AI is potentially fantastic. The article which was instrumental for this piece, was not understandable and it required some domain experts to explain me, certain stuff. As such, it creates jobs rather eliminating jobs. I am not concerned, rather I am thrilled. Thanks for your time, Bye!!! ●

Alumni Talk...

It was a fantastic session to pen it. Lakshmi Narasimhan of 2009-2013 Batch of EEE came to visit his juniors for this eventful session.

The impact of Artificial Intelligence was illustrated with his decade long experience in various companies in the United States. Currently, Lakshmi Narasimhan serves as Senior Solutions Engineer at Katalon. He has his Masters from University at Buffalo and a MBA from Lazaridis School of Business & Economics at Wilfrid Laurier University.

With his rich experience, he has been in the centre of revenue growth in all the industries he had been associated. The essence of his talk circled around the same. He elaborated, with examples, on the impact of AI in giving solutions to intricate problems, industry faces

He was animated when he spoke about the potential, ChatGPT holds which attracted the students immediately. There were healthy interactions from the students, both during the meeting and after it. The session is sure to make a lasting impact to the second and third year students who had attended.

Department's Vision & Mission...

Vision To impart quality Education, to produce competent graduates in Electrical and Electronics Engineering with innovative research abilities and best suited to meet the industrial needs.

Mission To provide quality education to students in the field of Electrical and Electronics Engineering.

To inculcate innovative skills and improve research capabilties to bridge the gap between academia and industry.

PEOs Provide adequate knowledge to analyze power electronics & drives, power systems and work with inter-disciplinary groups.

Develop skills needed to work on computational platform and software applications.

Encourage the ability to design, analyze and build electrical and electronics systems for the present and also the future.

Promote managerial skills and inculcate professional ethics.

PSOs Able to understand the principles and working of electrical components, circuits, systems and control that are forming a part of power generation, transmission, distribution, utilization, conservation and energy saving.

Able to apply mathematical methodologies to solve problems related with electrical engineering using appropriate engineering tools and algorithms.

Able to use knowledge in various domains to identify research gaps and hence to provide solution which leads to new ideas and innovations.

Dark Oxygen

A new way Oxygen is made in the Deep Ocean

Shivanika Bala Aishwarya B, Student, II EEE

When we think about oxygen production, we usually picture trees, plants, and ocean algae using sunlight to create it. But what if oxygen could be made without sunlight? That's exactly what happens deep in the ocean through a process called dark oxygen.

Dark oxygen is produced when lumps of metal-rich nodules on the seafloor react with salt water. These nodules, made of rare metals like manganese and iron, act like natural batteries, generating oxygen without any biological help. Since no light reaches these depths, this challenges the idea that photosynthesis is the only way oxygen is produced on Earth.

This discovery is important because it helps explain how oxygen-breathing organisms survive in total darkness. It also raises big questions—could this process be happening on other planets with oceans, like Jupiter's moon Europa or Saturn's Enceladus? Scientists are now rethinking how life might exist in extreme environments.

Dark oxygen is changing the way we understand deep-sea chemistry and the origins of life. Who knows? This hidden source of oxygen might even help us discover life beyond Earth!

FPGA...

Tarun. M, Student, II EEE

FPGA stands for Field Programmable Gate Array. FPGAs are capable of performing multiple tasks that requires parallel processing, high speed applications, and low power computing. FPGA are reconfigurable unlike traditional processors that makes them highly adaptable for specialized tools.

FPGAs are highly sought for application that incorporate Machine Learning. FPGAs are also suitable as a processing unit in 5G telecommunications. Electric Vehicles' controller units, be it battery management system, controller for DC-DC converter, and controller for Electric Motors, can be single handedly taken by FPGA.

As a student of Electrical and Electronics Engineering, I am really happy to know about this programming platform.

If you want to find the secrets of the Universe, think in terms of energy, frequency and vibration.

Nikola Tesla

YSC 2025...

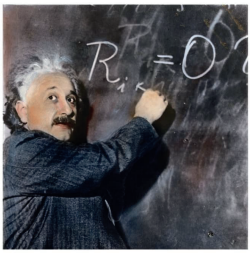
Yound Scientists Convention 2025

Meenakshi Sundararajan Engineering College

YOUNG SCIENTISTS CONVENTION 2025

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Electrical Technocrats Association (ETA)



In memory of Dr.Albert Einstein

Invites paper from first, second, third and final students of Meenakshi Sundararajan Engineering College for presentation at the 8th meet of Young Scientists Convention on 14th March 2025

IMPORTANT DATES:

Submission of Paper: 05.03.2025
Notification of Acceptance: 10.03.2025
Convention: 14.03.2025

YSC 2025

THE TOPICS ARE:

1. Non-linearity in Power Converters
2. Power Quality and HarmonicSupression
3. Protection modules in Power Systems
4. Artificial Intelligence in Power Systems
5. Signal Processing and Communications
6. Artificial Intelligence and Fuzzy Logic
7. Bio Sensors and Instrumentation
8. Data Mining and Knowledge Recovery
9. Safe and Secure Critical Software
10. Virtual Reality and Computer Graphics
11. Multilevel Inverters
12. FACTS
13. Alternate Fuels
14. Nano-technology
15. Opto Electronics.
16. Robotic and Automation
17. Embedded Systems
18. Reconfigurable Computing
19. Human Computer Interaction
20. System Architecture and Design

INSTRUCTION

Number of Authors per team: 2 or 3
Mail the copy of the paper to : ysc.eta@gmail.com
Submit the hardcopy to the Department of EEE
All the submission are expected to have originality and follow IEEE format

Turn back to turn things back!!!

Dr. Knowe was busy doing experiments when the students came to visit him in his laboratory. It was a moment of joy for everyone around, as the vacation extended unasumingly longer. Meeq and Phayth along with Phokus, Vorkh and Werw were actually exuberant and did not utter a single word for long as a sign of intense happiness, after meeting the Professor.

Dr.Knowe
prof.knowe@gmail.com

"Sir, How are you???" started Phayth with a concern. "Hmm... I am fine..." said Dr. Knowe. "How are you???" asked the Professor. "We are doing good," said Meeq and added, "What's on the table??? A new experiment??? But it doesnt seem so!!!" said Vorkh. "Yeah... its an experiment... but somewhat loosely coupled to the good old days..." said the Professor and added, "Thats why it appears rugged and does not appear like an experiment."

"Can you elaborate??? Will it be a disturbance, Sir???" asked Phokus. "Not at all..." said Dr. Knowe and continued, "I always get fascination on seeing living organisms like bees, insects and similar such, as they move through this ecosystem, nurturing it, in a subtle and silent manner. The fauna and flora, which fill this planet earth are truly amazing for the earth to survive. This is known to everyone, here." "That is why, you have plenty of flowering and fruiting plants and trees in the garden in your laboratory, Sir," said Meeq. "Yes, I write most of my papers sitting in the garden rather than on the lab desk. Fine, let me come to the subject. I am builing a prediction system for weather," said the Professor.

"Sir, seriously!!!" said Werw. "Wow!!!" said Phayth. "I dont understand???" said Vorkh. "Let Sir explain," said Phokus. "Ha Ha," Dr. Knowe smiled a sigh of relief. "You were looking worried and I am happy that you are smiling now, Sir," said Meeq. "Yeah, I too feel happy but I could find that the smile appeared as a sigh of relief," said Phayth. "Hello... here... kindly allow him to talk," said Vorkh. "Fine, Fine... listen, its not a big experiment to explain... Its the simplest model to emulate an ant mound. I am yet to see ants reaching here," said Dr. Knowe.

"Ant mound!!!" said Werw and added, "Can you go further deep, Sir???" "Now, Listen... Before the grounds are levelled in the garden for the newly constructed lab to the west of my office, a natural mound was present there. I had seen most of the time, a severe rainfall whenever, ants replace their nest. And most of us know this very well. I am just building an artificial ground with this tank, with necessary natural environment with an aim to attract ants. I am expecting the ants to stay within the 5 ft x 3 ft artificial environment for at least one year and the other expectation is to observe them whether they will change their food reserves to a new elavated site created to the top left corner of this tank."

"Sir, this looks very interesting!!!" said Phayth. "Thanks for the kind words, dear," said Dr. Knowe and added, "Still the idea is in the initial stages and I am not sure of the ways to attract ants and the ways to retain them for the minimum period of time, at least, say four seasons or one year."

The Professor added, "There is something from the environment, that the ants sense and decipher the weather pattern. They quickly resort to changing their nest with all the resources they had stored. The most interesting and also the worrying fact is that, but for the natural ground that had existed before the lab was constructed, I could have predicted the onset of rains very easily.

People, like us, disturb the environment, create our own problems, and spend our life in solving the problems." The Professor concluded by saying, "Its time to turn to the nature to understand it better than any other means."

ETA Newsletter

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Published by: Department of EEE, MSEC, Ch - 24.