NEXUS

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

- ◆ STUDENT ARTICLE
  MAJORANA 1: IS THIS THE END OF TRANSISTORS?
- ◆ ACHIEVEMENTS - IEEE KERALA CHAPTER STUDENT ELECTION
  PLACEMENTS

HOD'S DESK

In the landscape of human achievement, it is not merely knowledge but the application of knowledge that propels us forward. As we unveil this latest edition of NEXUS, we find ourselves at the intersection of tradition and transformation, where academic excellence meets creative ingenuity. The symbiosis between structured learning and unbounded imagination has never been more crucial. As Steve Jobs once observed, "Innovation distinguishes between a leader and a follower.

Indeed, the most revolutionary advances of our time have emerged not from conformity but from the courage to question, to reimagine, and to rebuild. Consider the burgeoning ecosystem of technology startups that have redefined our economic landscape. Their success stems not from replicating existing models but from identifying uncharted territories of possibility. As Elon Musk aptly stated, "When something is important enough, you do it even if the odds are not in your favor."

I encourage you to approach every project—regardless of scale—with intellectual curiosity and bold experimentation. Remember Thomas Edison's reflection: "I have not failed. I've just found 10,000 ways that won't work." Each laboratory exercise, each semester assignment offers an opportunity to transcend the expected and explore the unexplored.

Prof. Dr. Anto Sahaya Dhas
HEAD OF DEPARTMENT
Electronics And Communication
Engineering Vimal Jyothi Engineering
College, Chemperi

inside

VISION

To be a pacesetter in the field of Electronics and Communication Engineering.

MISION

To provide quality education for the students in the field of Electronics & Communication Engineering. To educate student about professional and ethical responsibilities and train them to build life skills for their career development.

Majorana 1: Is This the End of Transistors?

Naveen C M ,S6 ECE

In a groundbreaking announcement, Microsoft has introduced Majorana 1, the world's first quantum chip powered by a revolutionary Topological Core architecture. This innovation is expected to accelerate the development of quantum computers capable of solving industrial-scale problems in years, not decades.

Is This the End of Transistors? Microsoft's Quantum Leap with Majorana 1

In 1947, the invention of the transistor revolutionized electronics, paving the way for everything from smartphones to supercomputers.

Today, Microsoft is asking: What's the transistor of the quantum age? The answer: Majorana 1, the world's first quantum chip powered by a groundbreaking Topological Core architecture.

What Makes Majorana 1 a Game-Changer?

- Topoconductors: A new class of materials that enable topological qubits—stable, scalable, and digitally controllable.
- Beyond Transistors: Just as transistors replaced vacuum tubes, topological qubits could redefine computing by solving problems that are impossible for classical systems.
- Path to a Million Qubits: Microsoft's design scales to one million qubits, unlocking solutions for global challenges like microplastic pollution, self-healing materials, and sustainable agriculture.

Why This Could Be the End of the Transistor Era

Transistors have powered the digital age, but they're reaching their limits. Quantum computing, with its ability to harness the laws of quantum mechanics, offers a new paradigm. Microsoft's Majorana 1 chip is a glimpse into that future:

◻ Error-Resistant Design: Topological qubits are inherently stable, reducing the need for error correction.

◻ Digital Control: Simplifies quantum computing by replacing complex analog systems with digital precision.

◻ Scalability: Fits a million qubits on a chip the size of your palm, a feat impossible with classical transistors.

The Science Behind the Breakthrough

Microsoft's team created Majorana particles—exotic quantum particles that exist in a topological state of matter. These particles, combined with a new materials stack of indium arsenide and aluminium, form the backbone of the chip.

Their findings, published in Nature, mark a major milestone in quantum computing.

Majorana 1

What's Next?

Microsoft is advancing to the final phase of DARPA's US2QC program, aiming to deliver the first commercially viable quantum computer. With eight topological qubits already operational, the company is on track to achieve one million qubits in the coming years.

The Future of Computing

Imagine a world where quantum computers work alongside AI to design perfect materials, cure diseases, and solve climate change—all in seconds. Microsoft's Majorana 1 is the first step toward that future.

"Is this the end of transistors? Maybe not today, but the quantum age is closer than you think".

Add-on Course for S6 ECE
Topic: Arduino Mastery: From Basics to Innovation

An add-on course on "Arduino Mastery: From Basics to Innovation" was conducted from 17 December 2024 to 21 December 2024 at Vimal Jyothi Engineering College ,by Pacelab. The course was organized by department of Electronics and Communication Engineering (ECE) for S6 ECE students aimed to introduce students to Arduino. Through interactive sessions and hands-on projects, students were trained to understand Arduino components, programming, communication protocols, and the integration of sensors and actuators.

Facilitated by experienced faculties Muhammed Suhail and Muhammed Ashli Basheer, the course enabled participants to bridge theoretical knowledge with practical skills, equipping them for innovative project development.

Technical talk:
Topic: IEEE conference paper submission

A Technical talk session on IEEE conference paper submission was conducted by Dr. Anusha Chacko, Assistant Professor, ECE department, Vimal Jyothi Engineering College, on 30th January 2025 to guide students for preparing and submitting their papers to IEEE conferences. The session covered key aspects such as formatting guidelines, plagiarism checks, submission portals, and review processes.

One-Day IEEE CAS Sponsored Workshop on Artificial Intelligence (AI) & Machine Learning (ML)

The One-day event was organized under the sponsorship of IEEE Circuits and Systems Society (CAS) on 16th December 2025. The workshop included interactive lectures, live demonstrations, and hands-on sessions .The event began with a formal inauguration ceremony. The Head of the Department addressed the gathering, emphasizing the importance of such workshops in developing technical acumen among students.

15 Days Internship program for S8 ECE students-Infosys Foundation - Finishing School for Employability."

The ICT Academy, in partnership with the Infosys Foundation, organized a 15-day internship program entitled "Infosys Foundation – Finishing School for Employability." This initiative is tailored for final-year engineering students. The internship for S8 ECE students is scheduled to take place from January 15 to February 4, 2025.

Faculty Publications

Mr. Vinod J Thomas published a Paper titled :MSCNet-FS: Development of intelligent epileptic seizure anticipation model by multi serial cascaded network with feature Specific using scalogram images of EEG signal in Journal Computer Methods in Biomechanics and biomedical engineering.

The IEEE Kerala Chapter Student Election

IEEE Kerala Chapter Student Election is a significant event that allows student members to participate in the governance of their local IEEE community. The election selects student leaders who will represent and guide the IEEE student branches across Kerala's engineering colleges and universities. The following members from Vimal Jyothi Engineering Colleges elected to various positions.

Congratulations to All....

Anagha Vijay (Designer, Malabar Hub)

Vandana M K (District Coordinator - Kasaragod, Kannur, Wayanad, IEEE LINK)

Dins Wilson (CASS Kerala Section - Event Coordinator)

Pranav C Rajeev (Photonics Society - Designer)

Remin Reji(CASS Kerala Section - Event Coordinator

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

ECE 2021-25 BACTH STUDENT'S PLACEMENT OFFERS

CONGRAGULATIONS

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Spiders

| K Amith Babu | Jessay Jose Antony | Adarsh K B | Jishnu Prakash | Manu Roy | Aswin P |

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Teachnook
STARTING POINT FOR YOUR CAREER PATH

Jessay Jose Antony	Amal Sony	Vishakh Sasi	Jishnu Prakash	Manu Roy	Ann Mariya Chacko
	Dishna Shareej	Angel Mary	Sebastian Joseph	Amrutha A Nair	Vishnupriya M P

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Ajaynath P

RoboRAM Education

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Schneider Electric

Harinandh Sudheer	Harsha L	Ahammed Sinan Muhammed

SKILL INTERN

Rithwik M R	Ben Augustine

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

1. Graduates will have successful career in the field of Electronics and Communication Engineering and allied sectors

2. Graduates will have the ability to pursue higher studies and research

3. Graduates will demonstrate entrepreneurial skills to develop innovative products and services

4. Graduates will adapt to different roles in global working environment by respecting diversity and professional ethics

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