

2024-25



DEPARTMENTAL NEWSLETTER



Yearly in house Newsletter



By

THE DEPARTMENT OF

Electronics and Communication Engineering

B.P. Poddar Institute of Management and Technology



Issue: OCTOBER EDITION



**EDITORIAL
BOARD**

Bapan Banik
(2nd Year)

Sakchham Kapoor
(1st Year)

Archita Hazra
(1st Year)



“

*The essence of science
is independent thinking, hard work,
and not equipment.*

– Sir C.V. Raman



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B. P. Poddar Institute of Management & Technology Department of Electronics & Communication



Vision, Mission, PEO, PO, PSO

Vision of the Institute

To emerge as a progressive and premier institute for Engineering and Technology education with ethical values for creative engineering solutions with global changes.

Mission of the Institute

1. Offer quality education through a modern accessible, comprehensive and research oriented teaching-learning process.
2. Create opportunities for students and faculty members in acquiring knowledge through research and development.
3. Providing effective interface with industry by strengthening Industry- Institute interaction and developing entrepreneurial skills.
4. Meet ever-changing needs for the nation through rational evolution towards sustainable and environment friendly technologies.

Vision of the Department

To emerge as a premier department for studies in Electronics and Communication Engineering.

Mission of the Department

1. Imparting innovative educational program through laboratory and project-based teaching-learning process for meeting the growing challenges of industry and research.
2. Providing an inspiring and conducive learning environment to prepare skilled and competent engineers and entrepreneurs for sustainable development of the society.
3. Creating a knowledge centre of advance technologies committed to societal growth using environment-friendly technologies

Program Educational Objectives:

- PEO1:** Graduates of Electronics and Communication Engineering will be able to use latest tools and techniques to analyze, design and develop novel systems and products to solve real life problems.
- PEO2:** Graduates of Electronics and Communication Engineering will have strong domain knowledge, skills and attitude toward employment in core and allied industries, higher studies and research or will become successful entrepreneurs.
- PEO3:** Graduates of Electronics and Communication will exhibit ethical values, professionalism, leadership, communication and management skills, team work and multi-disciplinary approach to adapt current trends in technology through life-long learning.

Program Outcomes (POS)	
1. Engineering knowledge	7. Environment and sustainability
2. Problem analysis:	8. Ethics
3. Design/development of solutions	9. Individual and team work
4. Conduct investigations of complex problems	10. Communication
5. Modern tool usage	11. Project management and finance
6. The engineer and society	12. Life-long learning

Program Specific Outcomes (PSO)

- PSO1:** Students will acquire knowledge in Advance Communication Engineering, Signal and Image Processing, Embedded and VLSI System Design.
- PSO2:** Students will qualify in various competitive examinations for successful employment, higher studies and research.

TECH TRENDS-*FUTURE IS NOW*

WILLOW – by GOOGLE

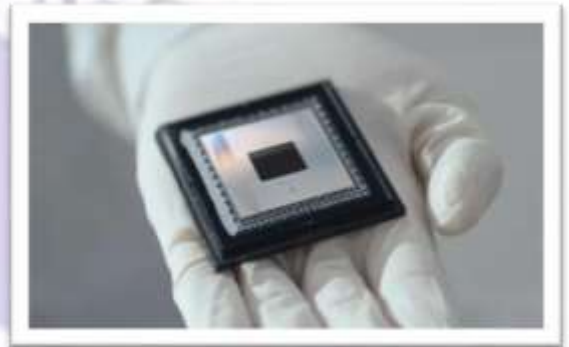
Release Date- December 2024

105 Qubits-Willow doubles the number of qubits compared to Google's previous Sycamore chip (~53 qubits), boosting raw computational scale

Exponential Error Correction (Below- Threshold)- For the First time, Google achieved "below-threshold" error correction-scaling from 3*3 to 7*7 qubit lattice led to exponentially lower error rates as qubit count increased.

Quantum Supremacy Benchmark- Completed a random circuit sampling task in under five minutes-a computation estimated to take today's fastest supercomputers 10^{+25} years.

It has major applications in Quantum Error Correction Research, Optimization Problem Solving



INTEL GAUDI- by INTEL

Release Date- September 24,2024

1. Significant Compute Boost
Delivers up to 1.8 PFLOPS in FP8/BF16, offering 2× FP8 and 4× BF16 throughput over Gaudi 2, powered by 64 Tensor Cores and 8 MMEs on a 5nm TSMC process.
2. Enhanced Memory & Bandwidth
Equipped with 128GB HBM2e and 3.7TB/s bandwidth, providing 33% more capacity and 50% faster bandwidth than Gaudi 2. Includes 96MB SRAM and PCIe Gen5 x16, doubling host-side performance.
3. Scalable Ethernet Networking
Features 24× 200 Gbps RDMA-over-



Ethernet ports, enabling large-scale deployment without reliance on proprietary solutions like NVLink or InfiniBand.

4. High Cost Efficiency

Intel claims 40% faster training and 2× faster inference vs. NVIDIA H100, with 2× better performance-per-dollar on Llama-2. A full 8-card setup costs ~\$125K—one-third cheaper than a comparable H100 system.

Ideal for LLM training, LLM inference at scale, scientific computing, and simulations.

WALKER S2—by UBTECH

Release Date-July 23,2025

Autonomous Battery Swapping

Walker S2 is the first humanoid robot to swap its own battery without human help. It walks to a charging dock, removes the drained battery, inserts a new one, and resumes work in just 3 minutes.

Physical Specs

- Height: 162 cm, Weight: 43 kg
- Powered by a 48V dual-lithium system
- Runs up to 2 hours walking or 4 hours idle per charge

Mobility & Handling

- 52 degrees of freedom for realistic motion
- Lifts up to 15 kg in a 0–1.8 m range
- ±162° waist rotation for flexible assembly tasks

Vision System

- China's first dual RGB stereo camera, enabling accurate 3D perception in dynamic environments

AI & Autonomy

UBTECH's Co-Agent platform empowers the robot to understand tasks, plan actions, adapt, and learn from its surroundings with multimodal AI reasoning.



TECH TIPS

Always connect all equipment grounds to a single common point to prevent "ghost" voltage readings and erratic circuit behavior.

RECENT EVENTS

INDUSTRIAL VISIT IN HALDIA PORT

The Department of Communication Engineering, in collaboration with the SPIE Student Chapter, BPPIMT, organized a one-day educational visit to the Haldia Dock Complex on 12th August 2024. Students from the 2nd, 3rd, and final years participated in the visit, accompanied by faculty members and technical staff from the department.



The tour commenced with a walkthrough of the berths and expansive container yards, where Mr. Pranoy Dey, an official from the Dock Authority, provided a detailed explanation of dock operations. Students had the opportunity to observe various types of containers and gain insights into the logistics involved in their management.

Following this, the group visited the lock gate, a key component in the dock's overall functioning. The visit concluded with a comprehensive presentation by port officials, offering an overview of port activities, including cargo handling and operational procedures.

ABHIGYAN 2.24-BATTLE OF BRAINS

The SPIE Student Chapter, BPPIMT, in collaboration with the Department of Electronics and Communication Engineering (ECE), successfully organized Abhigyan 2.24, the institute's Annual Technical Quiz, held on the 19th and 31st of August 2024.

The preliminary round took place on 19th August via an online platform, witnessing enthusiastic participation from 110 teams. The final round was hosted on 31st August at the institute auditorium, featuring the top 6 qualifying teams.

The event was graced by the Principal, Prof. Sutapa Mukherjee, along with Dr. Ivy Majumdar, Advisor of the SPIE Student Chapter, BPPIMT. Faculty members and technical staff of the ECE department were also present, adding to the academic spirit of the



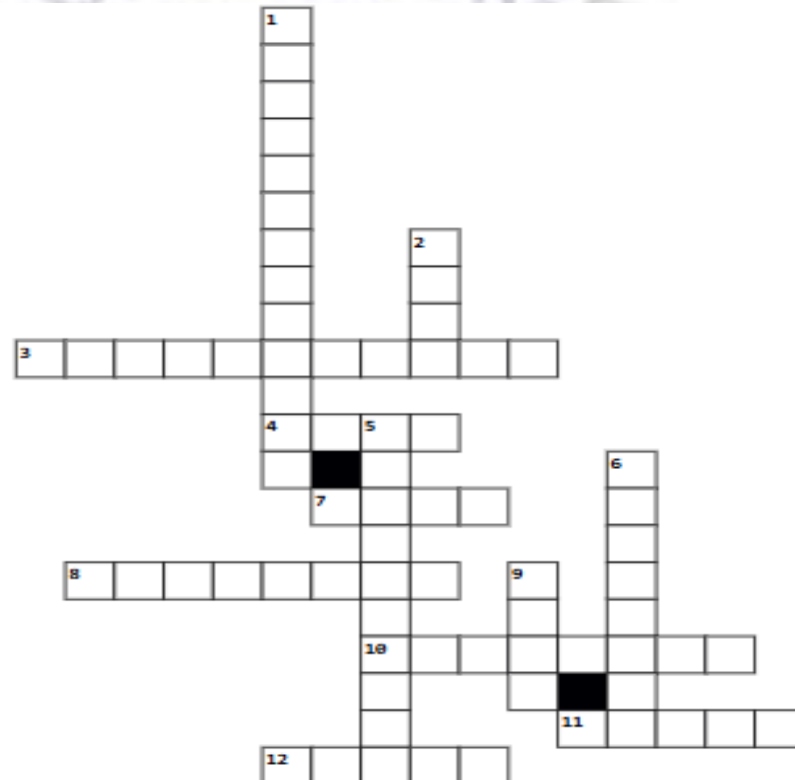
ACHIVEMENTS & AWARDS

YOU MAKE US PROUD!

- Bapan Banik & Debadrito Saha – 1st Prize in Report Writing (Industrial Visit) by SPIE, BPPIMT
- Anish Das – 1st Prize in Forma 2.24, BPPIMT
- Kuntal Mondal – 1st Prize
- Aditya Jaiswal & Bharati Mishra – 2nd Prize
- Bapan Banik & Harsh Singh – 3rd Prize
- Sakchham Kapoor – 2nd Prize in Skit Competition at Narula Institute

BRAIN-BREAK

CROSSWORD PUZZLE



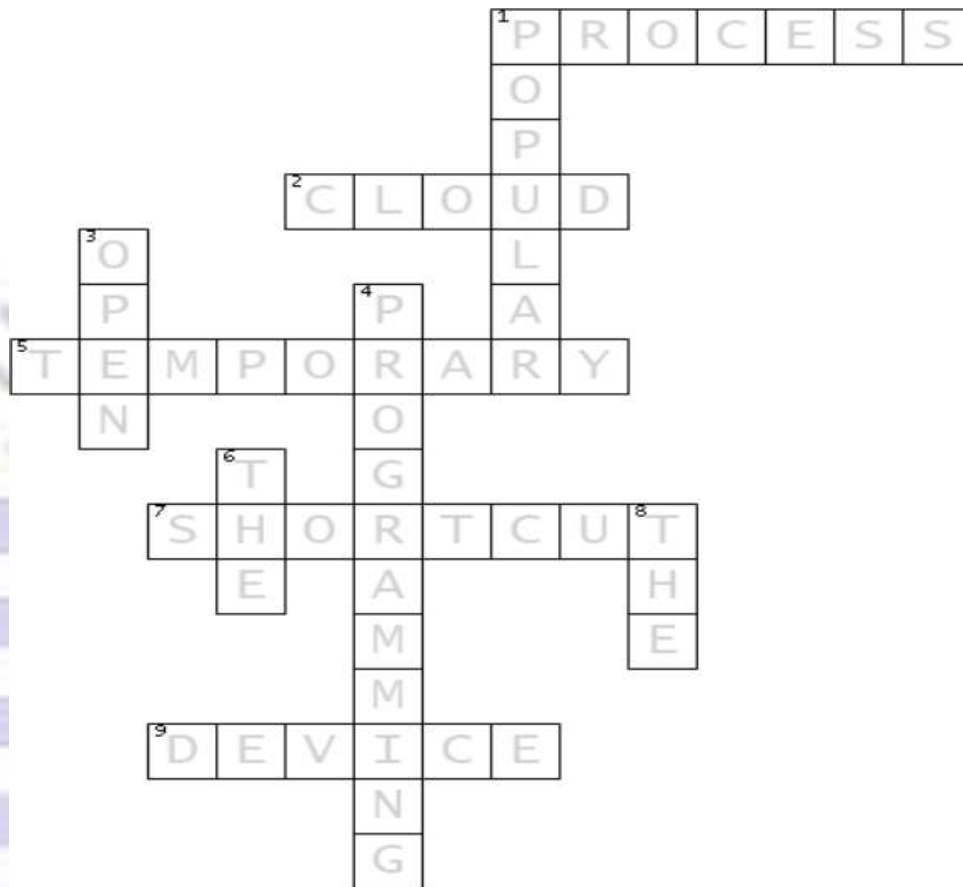
Across

3. WHAT process writes instructions?
4. WHAT protocol gets web pages?
7. WHAT portable language?
8. WHAT storage uses disks?
10. WHAT manages hardware?
11. WHAT unit measures speed?
12. WHAT malicious replicating program?

Down

1. WHAT technique hides data?
2. WHAT short-range wireless standard?
5. WHAT switch or amplifier device?
6. WHAT is a site's start?
9. WHAT is eight binary digits?

ANSWERS- MARCH edition CROSSWORD PUZZLE



The first electronic device was the vacuum tube, invented by John Ambrose Fleming in 1904 which enabled early amplification and switching in circuits ().

Frequency Fun

The Magic Smoke: Every engineer knows that electronic components run on "Magic Smoke." We know this because once the smoke leaks out, the component stops working.



An LED is a semiconductor "one-way street" that converts electricity directly into light instead of heat.

“An equation for me has no meaning unless it expresses a thought of God.” -**Srinivasa Ramanujan**

Srinivasa Ramanujan (1887–1920)

was a self-taught Indian mathematician known for his extraordinary contributions to mathematical analysis, number theory, infinite series, and continued fractions. Despite limited formal training, he independently developed highly original results and later collaborated with British mathematician G.H. Hardy at Cambridge University. His deep insights and intuitive grasp of numbers have had a lasting impact on mathematics, and many of his formulas are still studied today. Ramanujan's life is celebrated as a story of genius emerging from humble beginnings.



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ECE isn't just a department — it's a vibe. Keep exploring. Keep creating. Keep shining!

