2025-26

Babu Banarasi Das Institute of Technology & Management

AKTU College Code - 054

Department of ELECTRONICS & COMMUNICATION ENGINEERING

NBA NATIONAL BOARD OF ACCREDITATION

A NBA ACCREDITED DEPARTMENT

ECE NEWSLETTER

VOLUME I, DECEMBER-2025

(2025 - 2026)



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(2400540310037

" To succeed in your mission, you must have single-minded devotion to your goal."

– Dr. A.P.J Abdul Kalam

WORDS OF THANKS

We are highly thankful to every member for their dedications and hard work. It is the team work that made this Newsletter possible. We on behalf of our team would also like to express our gratitude towards our readers.

THANK YOU

BABU BANARASI DAS
Institute of Technology & Management, Lucknow
Department of Electronics & Communication Engineering

Newsletter
DEC, 2025
Volume I
2025-26

VISION OF INSTITUTE

"To become a leading institute of providing professionally competent and socially responsive technocrats with high moral values"

MISSION OF INSTITUTE

M1: To create an eco-system for the dissemination of technical knowledge, to achieve academic excellence.
M2: To develop technocrats with creative skills and leadership qualities, to solve local and global challenges.
M3: To impart human values and ethics in students, to make them socially and Eco-friendly responsible.

VISION OF DEPARTMENT

"To emerge as a globally recognized center of excellence in engineering education, fostering innovation, ethical values, entrepreneurial spirit and leadership qualities to create professionals who contribute meaningfully to society and industry"

MISSION OF DEPARTMENT

M1: To achieve global standards of excellence through continuous synchronization with the latest technologies and innovation.
M2: To adopt effective pedagogical methods that bridge theoretical concept with practical applications for deeper understanding.
M3: To inculcate professional ethics, self learning abilities, entrepreneurial skills and leadership qualities for holistic professional success.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Graduate of the program shall be adaptive to emerging technologies to pursue their career in hardware and software industry.

PEO 2: Graduate of the program shall have technical excellence to augment their proficiency towards higher education and progress in research.

PEO 3: Graduate of the program shall have professional and ethical attitude to uphold team work skills and multidisciplinary approach.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1: In depth theoretical & practical knowledge of modern engineering in electronic circuitry.

PSO 2: Design and analyze modern communication systems to meet the present and future needs of industry with cost effective solutions.

➢ EVENT ORGANIZED @ ECE DEPARTMENT

1. Expert talk on "Career opportunities in VLSI Design and Embedded System"





2. Startup Competition







3. Faculty Development Program on topic Advanced Computing and Sustainable Technologies –



BABU BANARSI DAS

Online
Faculty Development Program
on
Advanced Computing and Sustainable Technologies

08th – 12th December, 2025

FORCE

Organized by
Department of Electronics and Communication Engineering,
Babu Banarasi Das Institute of Technology and Management, Lucknow, Uttar Pradesh- 226028

Objective

This Faculty Development Program (FDP) is designed to enhance the technical and professional competency of faculty members in the fields of Electronics and Communication Engineering.

The program aims to empower participants with advanced knowledge and skills that are essential for driving innovation and excellence in both teaching and research. The FDP aims to bridge the gap between academic theory and practical industry applications, fostering a dynamic learning environment that benefits both educators and students alike.

Program Objectives

Update Knowledge: Equip faculty with current trends and advancements in Electronics and Communication Engineering.

Skill Enhancement: Improve teaching methodologies and integrate new technologies in the curriculum.

Research Insights: Provide insights into ongoing research and potential areas of study.

Industry Practices: Bridge the gap between academic concepts and industry practices.

Outcomes

Enhanced Teaching Skills: Faculty members will be better equipped to teach the latest advancements.

Research Collaboration: Opportunities for collaborative research projects.

Curriculum Development: Updated course content to reflect current industry standards.

Networking: Build a network of professionals and researchers in the field.

About the Institute

BABU BANARASI DAS INSTITUTE OF TECHNOLOGY AND MANAGEMENT (Formerly Known as Babu Banarasi Das National Institute of Technology and Management - BBDNITM) (Recognized by AICTE, Govt. of India, affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow) AKTU college code - 054, is committed to provide the excellence in teaching, learning and research and develop the cream of the crop in all the field of education. BBDITM is one of the India's premier technology and management college.

BBDITM has driven new ways of thinking since 1998 - the founding year of college. The college attracts students from all around the world due to its excellent facilities. BBDITM established and run by the group having exceptional experience and performance excellence of more than 20 years.

About the Department

The Department of Electronics and Communication Engineering was established in the year 1998 in Babu Banarasi Das National Institute of Technology and Management, Lucknow campus. The department has well equipped Labs as Communication lab, Microprocessor Lab, Electronics circuit lab, Digital/Analog circuits lab. The department has highly educated Faculty members having a vast experience in their field. The department has a well-balanced workforce having experience in academics and in industries. Students are given education as well as training exposure in order to get placed in highly reputed Industries. Symbiosis between placement cell and the Department help the students to achieve the best of the Jobs of their careers. Proper Industrial Interaction is given to the students by organizing National level workshops in the Campus.

Vision of the Department

"To emerge as a globally recognized center of excellence in engineering education, fostering innovation, ethical values, entrepreneurial spirit and leadership qualities to create professionals who contribute meaningfully to society and industry."

Mission of the Department

M1: To achieve global standards of excellence through continuous synchronization with the latest technologies and innovation.

M2: To adopt effective pedagogical methods that bridge theoretical concept with practical applications for deeper understanding.

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Mr. Vinj Sagar Das, President, BBDNG
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Prof. J. P. Pandey, Vice Chancellor, AKTU, Lucknow

Patron
Mr. R. K. Agarwal, Chief Executive Director, BBDEC
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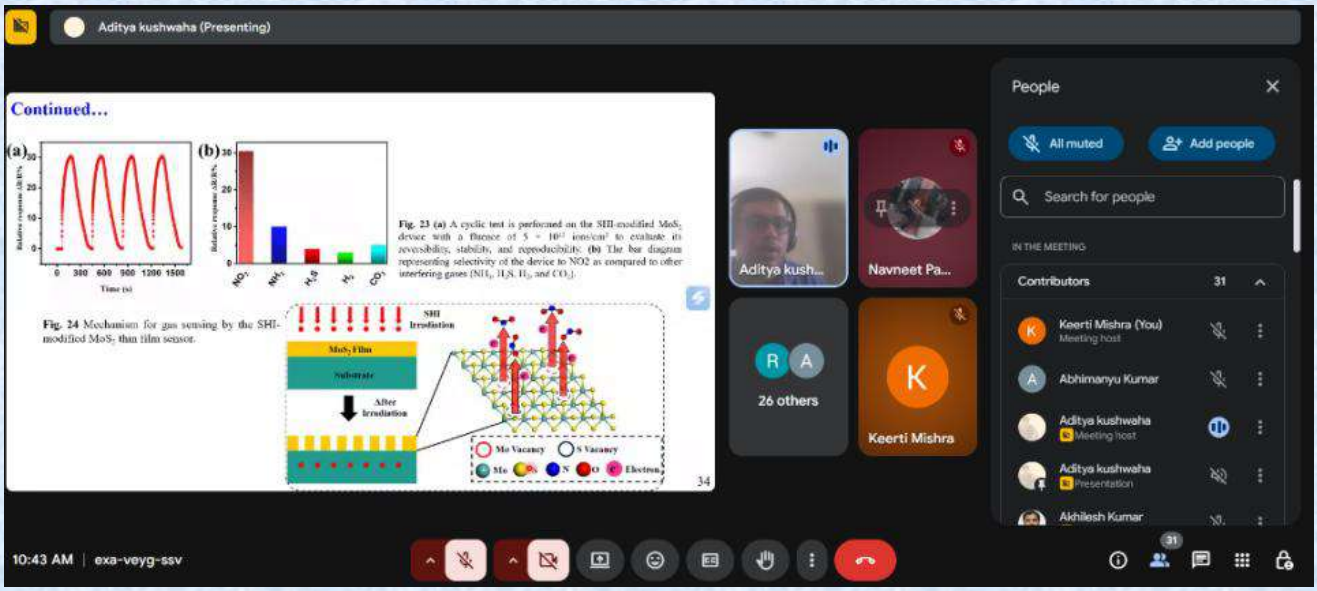
Convener
Prof. (Dr.) Shailendra Tokhiyan, HOD, ECE

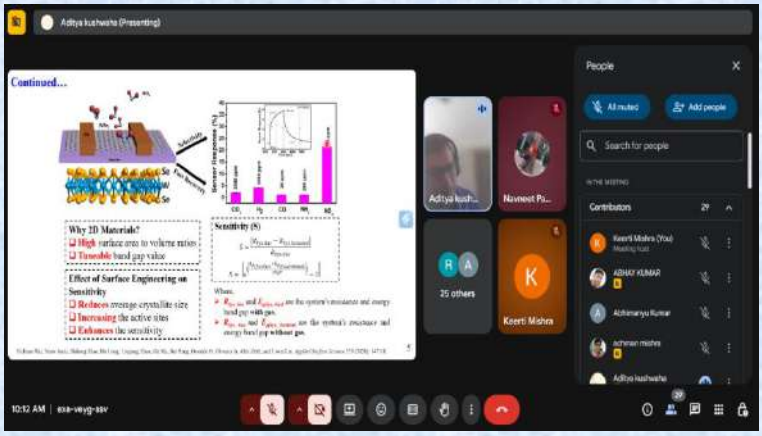
Coordinator
Dr. Rupali Agrawal, Associate Professor, ECE, BBDITM

Co-coordinator
Mr. Rajeev Singh, ECE
Ms. Kaveri Khatra, ECE
Mr. Diwakar Singh, ECE

Organizing Committee
Mr. Amit Kr. Singh, ECE
Ms. Navneet Kumar Pandey, ECE
Mr. Ravi Shanker, ECE
Dr. Abhimanyu Kr. Yadav, ECE
Mr. Pradeep Verma, ECE
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diwakar.singh@bbdnitm.ac.in
Registration Fees: -/- Registration Fee
Registration Link :- https://forms.gle/GLzPbvPmdcfv5iNS7









➢ FACULTY CORNER :

❖ Hybrid Supercapacitors: Emerging As a Better Choice For Residential And Commercial Use:

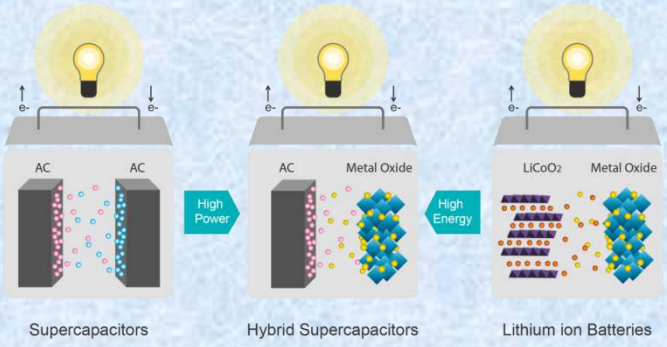
Mr. Navneet Kumar Pandey
Assistant Professor
Electronics & Communication Engineering

Hybrid super capacitors and solar energy are reshaping energy storage, from India's solar boom to maintenance-free solutions.

Capacitors are a basic yet very important component in electronics. Imagine them as tiny batteries inside almost every electronic device, made up simply of two metal plates that store electric charge. However, there is a more advanced version called a supercapacitor. Supercapacitors use a special carbon material on the metal plates, which allows them to store more electricity and release it very quickly. This makes them perfect for tasks where energy needs to be used or saved very quickly, such as in the brakes of an electric car.

Supercapacitors are great at what they do, but they can't hold as much energy as a regular battery, so they are not used for driving the car long distances. Instead, they work alongside the battery, particularly when the car needs a quick burst of energy or needs to save energy quickly, such as when braking. This not only helps the car run efficiently but also keeps the battery in good condition by preventing overcharging.

Some companies are working on hybrid supercapacitors, which combine features from both batteries and supercapacitors. They are designed for larger tasks, like storing energy in homes or for cellphone towers. This type of capacitor can handle a lot of energy and release it slowly over time, which is perfect for using solar or wind energy even when the sun isn't shining or the wind isn't blowing.

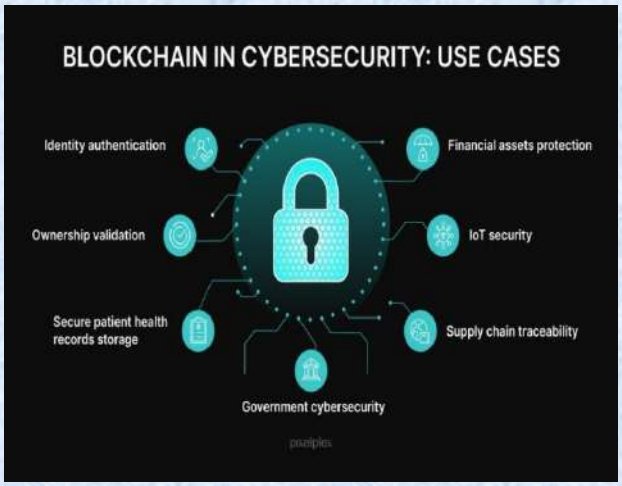


These hybrid systems are especially useful because they last a long time, they are safe, and they help reduce energy costs. They can shift energy usage to times when it is cheaper, and by doing so, they also help reduce the strain on energy grids. This not only saves money but is also better for the environment, as it helps cut down on greenhouse gas emissions.

➢ **STUDENT CORNER :**

Blockchain and Cyber Security :

MEHUL PURI
2400540310030
EC2



Introduction: In the digital age, data has become one of the most valuable assets for individuals, organizations, and governments. However, with the growing dependence on interconnected systems, the threat of cyber attacks has also increased significantly. Cyber security breaches can lead to massive financial losses, data theft, and erosion of public trust. As a result, there is a growing need for technologies that can enhance the security, integrity, and transparency of digital transactions. Among these emerging technologies, **blockchain** stands out as a promising solution to many cyber security challenges.

Understanding Blockchain Technology :

Blockchain is a **distributed ledger technology (DLT)** that records transactions across a decentralized network of computers. Each transaction is stored in a "block" that is cryptographically linked to the previous one, forming a chain of blocks — hence the name *blockchain*.

Once a block is added to the chain, it becomes nearly impossible to alter without changing all subsequent blocks, making the system highly tamper-resistant.

Unlike traditional databases controlled by a central authority, blockchain operates on a **peer-to-peer network**, where each participant maintains a copy of the ledger. This decentralized structure eliminates single points of failure and ensures data transparency and resilience against attacks.

Blockchain's Role in Enhancing Cyber security :

Blockchain technology offers several features that can strengthen cyber security systems across different sectors:

1. **Data Integrity and Immutability:** Every transaction on a blockchain is cryptographically secured and time-stamped. Once recorded, it cannot be altered without consensus from the network. This ensures data integrity and protects against unauthorized modifications, a common issue in traditional databases.
2. **Decentralization and Reduced Single Points of Failure:** In conventional systems, cybercriminals often target centralized servers to steal or manipulate data. Blockchain's decentralized structure makes such attacks significantly harder, as compromising a distributed ledger would require controlling the majority of the network nodes simultaneously.

3. **Secure Identity Management:** Blockchain can revolutionize digital identity verification through **self-sovereign identity systems**, where users control their own data instead of relying on centralized authorities. This reduces risks of identity theft and data breaches, which are common in current online systems.
4. **Enhanced Authentication and Encryption:** Blockchain networks use advanced cryptographic algorithms for data authentication and verification. These mechanisms prevent unauthorized access and ensure that only legitimate participants can perform transactions.
5. **Supply Chain and IoT Security:** In supply chain management, blockchain ensures product authenticity and traceability, minimizing the risk of counterfeit goods. Similarly, in the Internet of Things (IoT), blockchain can secure communication between devices by providing decentralized trust mechanisms and preventing unauthorized data manipulation.

Applications and Case Studies:

Several industries are already leveraging blockchain to improve cyber security. For example, **financial institutions** use blockchain for secure digital payments and fraud prevention. **Healthcare organizations** adopt blockchain to protect sensitive patient data and ensure secure sharing of medical records. **Government agencies** explore blockchain for securing voting systems, land registries, and public records, reducing risks of corruption and tampering.

A notable example is **Estonia**, which has integrated blockchain into its national digital identity system, allowing citizens to securely access e-government services. Similarly, companies like **IBM** and **Microsoft** are developing blockchain-based cyber security frameworks to enhance enterprise data protection.

Challenges and Limitations:

Despite its advantages, blockchain is not a complete solution to cyber security issues. It faces several challenges:

- **Scalability:** Public blockchains can be slow and energy-intensive, making them less suitable for high-volume applications.
- **Regulatory and Legal Issues:** The absence of uniform global standards for blockchain use creates uncertainty around data privacy and compliance.
- **Smart Contract Vulnerabilities:** Bugs or flaws in smart contract code can lead to security breaches, as seen in several high-profile crypto currency hacks.
- **Integration Difficulties:** Implementing blockchain within existing IT infrastructure can be complex and costly.

Future Prospects

As research and development continue, blockchain is expected to evolve into a key pillar of cyber security. Innovations like **quantum-resistant encryption**, **hybrid blockchain models**, and **AI-integrated security systems** are likely to make blockchain even more robust and adaptable. In the coming years, the convergence of blockchain, artificial intelligence, and the Internet of Things will redefine how organizations approach data protection and digital trust.

Conclusion

Blockchain technology represents a transformative approach to cyber security. By leveraging decentralization, cryptography, and transparency, it addresses some of the most pressing challenges in data protection today. While it is not without its limitations, blockchain's potential to create more secure, trustworthy, and resilient digital systems is undeniable.

CONGARULATIONS

Congratulations to following students for their exceptional performance in end semester exam ***Dr. APJ Abdul Kalam Technical University*** *Examination,* ***Even Semester 2024-25***

YEAR	UNIVERSITY ROLL NO.	STUDENT NAME	III SEM SGPA
EC 2nd Year	2300540310011	ANSHIKA SINGH	7.7
	2300540310039	SATYAM TIWARI	7.57
	2300540310036	SANJAY GUPTA	7.48
	2300540310008	AMAR NATH YADAV	7.3
	2300540310034	SADHANA SAHANI	7.3

YEAR	UNIVERSITY ROLL NO.	STUDENT NAME	III SEM SGPA
EC 3rd Year	2200540310040	SAYYED SANIA	9.05
	2200540310021	JAYSHRI YADAV	8.86
	2300540319002	NIDHI AGRAHARI	8.86
	2200540310026	NIHARIKA ANAND	8.81
	2200540310012	APARNA TIWARI	8.48

YEAR	UNIVERSITY ROLL NO.	STUDENT NAME	III SEM SGPA
EC 4th Year	2100540310016	MD TAHIR	7.89
	2100540310017	MOHD ZAID	7.88
	2100540310003	ADITYA SINGH	7.79
	2200540319006	SUSHMA KUMARI	7.76
	2100540310010	AYUSH SRIVASTAVA	7.73