Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

BIANNUAL NEWSLETTER

ELECTRO NEXUS

Empowering Tomorrow Through Electronics

Volume 1, Issue 2
Jan-June, 2025

Department of Electronics and Communication Engineering

From HoD Desk

Prof. (Dr.) Praveen Kumar Jain

I would like to welcome you all to our Department of Electronics and Communication Engineering, a discipline that continues to revolutionize our technological landscape. ECE stands at the crossroads of innovation, offering a diverse array of courses and practical learning opportunities in Embedded Systems, IoT, VLSI Design, Advanced Communication Systems, and Signal Processing. Our comprehensive curriculum is meticulously crafted to align with global industry demands, positioning our graduates at the forefront of technological revolutions.

Our department prides itself on its state-of-the-art laboratories, experienced faculty, and a culture of academic excellence. We are committed to fostering entrepreneurial spirit, research, and industry collaboration, ensuring that every student develops the skills needed to tackle real-world challenges with creativity and confidence. Students are encouraged to participate in hands-on projects, internships, and innovation-driven activities, making them highly sought after by prominent industries and research organizations.

As we look to the future, the opportunities for ECE graduates are boundless—spanning sectors such as healthcare, telecommunications, space exploration, and renewable energy. By joining our vibrant and dynamic community, students not only gain technical prowess but also contribute meaningfully to society, creating technologies that transform lives.

With a legacy of excellence and a vision for an impactful future, we invite you to be part of our journey. Together, let us inspire, innovate, and shape a smarter tomorrow.

From Editor Desk

Ms. Priyanka Sharma

Dear Readers,

It gives me immense pleasure to present the biannual edition of the ECE Department Newsletter of Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT). This newsletter serves as a vibrant platform to showcase the creativity, technical innovations, and achievements of our students and faculty members.

In every issue, we strive to highlight the spirit of inquiry, innovation, and excellence that defines the Electronics and Communication Engineering fraternity. The field of ECE continues to evolve rapidly—bridging hardware with intelligent systems, IoT, embedded design, AI, and quantum technologies. Through this publication, we aim to inspire our readers to stay curious, explore new technologies, and contribute meaningfully to the ever-changing landscape of engineering.

I extend my heartfelt appreciation to all contributors, the editorial team, and faculty mentors for their dedication and teamwork in bringing this edition to life. I also encourage students to actively participate, share their innovative ideas, and continue pushing the boundaries of learning and research.

Let this newsletter be a reflection of our collective growth, collaboration, and commitment to excellence.

Student Editor

Miss Aaliya Parveen

Greetings to All Readers,

This magazine stands as a testament to the continuous progress, dedication, and innovation within our department. It captures the essence of our collective efforts – from academic advancements and research pursuits to institutional achievements and initiatives that shape our future. As the student editor, it is my privilege to present this compilation that not only showcases our department's milestones but also reflects the teamwork, discipline, and commitment that define us. May this issue serve as a source of insight, motivation, and pride for every reader, reminding us that excellence is not a destination but a journey built on shared vision and persistent effort.

About the Department

VISION

To evolve the department as a center of excellence in the field of Electronics & Communication Engineering for enriched education, higher learning, research and development

MISSION

M1: To Impart quality education in Electronics and Communication Engineering for better employability.
M2: To Prepare students for being competent in dealing with industrial challenges.
M3: To Equip students for lifelong learning and for serving the society.

PROGRAM EDUCATIONAL OBJECTIVES

1. To pursue their career successfully in the field of Electronics & Communication Engineering and advance in their profession.
2. To excel in pursuing higher education and life-long learning.
3. To hold high ethical standards and work effectively in multidisciplinary teams with strong management and team work skills

PUBLICATION DETAILS

- Rukhsar Zafar, Rahul Pandey, Asymmetrical split ring resonators based plasmonic sensor for improved sensing performance, International, Springer, Journal of Optics (Scopus), ISSN: 0974-6900 | Pages: 1–9 | Year: 2025 | Journal | Published: 16 January 2025

- Shubhi Jain, Harshal Nigam, AI-Powered Diagnostics and Personalized Treatment: Enhancing Patient Outcomes in Modern Healthcare, International, EL-MED-Pub, Journal of Neonatal Surgery (Scopus), ISSN: 2226-0439 | Vol. 14, Issue 6s | Pages: 1–11 | Year: 2025 | Journal | Published: 12 April 2025

- Monika Mathur, Rajni Idiwal, Internet of Things: Revolutionizing Connectivity and Automation Across Industries, International, Eigth Sense Research Group, International Journal of Engineering Trends and Application, ISSN: 2293-9516 | Vol. 12, Issue 1 | Pages: 1–6 | Year: 2025 | Journal | Published: 27 February 2025

- Rajni Idiwal, Monika Mathur, Wearable Antennas for Next Generation Wireless Communication: A Comprehensive Review, International, Eigth Sense Research Group, International Journal of Engineering Trends and Application, ISSN: 2293-9516 | Vol. 12, Issue 2 | Pages: 1–6 | Year: 2025 | Journal | Published: 27 March 2025

- Rahul Pandey, Interconnected concentric ring resonator-based plasmonic sensor for ethanol blending detection in fuels, International, Elsevier, Optics and Laser Technology (SCIE, Scopus), ISSN: 1879-2545 | Vol. 188 | Pages: 1–12 | Year: 2025 | Journal | Published: 27 March 2025

- Praveen Kumar Jain, Impact of temperature on the performance of efficient GaInP single-junction solar cells with double back surface field, International, Springer, MRS Advances (Scopus), ISSN: 2059-8521 | Pages: 1–9 | Year: 2025 | Journal | Published: 16 April 2025

- Rajni Idiwal, Monika Mathur, Design and optimization of multiband THz antenna arrays for high-performance 6G and IoT wireless communication, International, IET, IET Conference Proceedings, ISBN: 2732-4494 | Issue 7 | Pages: 1–9 | Year: 2025 | Conference | Published: 23 May 2025

- Rajni Idiwal, Monika Mathur, Design and performance analysis of hybrid cross-shaped THz antennas for 6G applications, International, IET, IET Conference Proceedings, ISBN: 2732-4494 | Issue 7 | Pages: 1–9 | Year: 2025 | Conference | Published: 23 May 2025

- Abhinandan Jain, Praveen Kumar Jain, Optimization of a-IGZO top gate thin film transistor for ammonia gas sensor, International, Elsevier, Next Material (Scopus, ESCI), ISSN: 2949-8228 | Vol. 8 | Pages: 1–10 | Year: 2025 | Journal | Published: 27 May 2025

NPTEL MENTORS (EVEN SEM)

Faculty Name	COURSE
Mr. Sunil Lakhawat	Signals and Systems/ Principles of Signals and Systems
Dr. J. P. Vijay	Principles of Communication Systems – I/ Principles of Digital Communications
Ms. Mamta Jain	Digital System Design/ Digital Electronic Circuits/ Switching Circuits and Logic Design
Dr. Swati Arora	Digital Signal Processing and its Applications
Mr. Rahul Pandey	Analog Circuits/ Analog Electronic Circuits - IITM
Dr. Shubhi Jain	Microwave Integrated Circuits/ RF and Microwave Networks
Mr. Abhinandan Jain	Microprocessors and Interfacing/ Microprocessors And Microcontrollers
Dr. Kiran Rathi	Control engineering/ Control System Design
Dr Vikas Pathak	Computer Networks and Internet Protocol
Dr Vikas Pathak	Semiconductor device modeling and Simulation
Dr. Lalit Lata	Introduction to Embedded System Design

CONTRIBUTIONS

- Dr. Mukesh Arora and Ms. Priyanka Sharma served as Mentor at India Design Week 2025 at Lovely Professional University, Punjab conducted by ICT Academy.
- Dr. Vikas Pathak has chaired a session at the 3rd IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IEEE IATMSI-2025). The conference was organized by the IEEE MP Section and ABV-IIITM Gwalior, India, and took place from March 6-8, 2025.

NPTEL- FACULTY ACHIEVEMENTS

- Harshal Nigam received Elite+Silver certification in Microwave Integrated Circuits.
- Vikas Pathak received Elite certification in CMOS Digital VLSI Design
- Abhinandan Jain received Elite certification in Soft Skill Development
- Shubhi Jain received Elite certification in Effective writing

NPTEL-STUDENT ACHIEVEMENTS

Name of the Student	Name of the course	Meritorius mentions
Sameer Kothari	Analog Circuits	Elite
Divyansh Jain	CMOS Digital VLSI Design	Successfully completed
Chirag Gurnani	Digital System Design	Successfully completed
Himanshu Agarwal	Digital System Design	Successfully completed
Chirag Gurnani	Integrated Circuits, Mosfets, OP-Amps and their Applications	Elite
Himanshu Agarwal	Integrated Circuits, Mosfets, OP-Amps and their Applications	Successfully completed
Sahil bohra	Network Security	Successfully completed
Abhijeet Giri	Integrated Circuits, Mosfets, OP-Amps and their Applications	Successfully completed
Ashita Bansal	Introduction to Embedded System Design	Elite
Divyansh Jain	Communication Networks	Elite
Prathmesh Narwaria	Fundamentals of semiconductor devices	Successfully completed
Sameer Kothari	Microprocessors and Microcontrollers	Elite
Sandeep Kumar	Fundamentals of Object Oriented Programming	Elite+Silver
Aditya Kumar Singh	Embedded Systems Design	Elite
Aditya Kumar Singh	Introduction To Internet Of Things	Elite+gold
Ashita Bansal	Microprocessors and Interfacing	Elite
Aayush Jha	Embedded Systems Design	Elite

NPTEL-STUDENT ACHIEVEMENTS

Name of the Student	Name of the course	Meritorius mentions
Abhimanyu Singh Rathore	Embedded Systems Design	Successfully completed
Jai Kumar Bisaria	Psychology Of Stress, Health And Well-Being	Elite+Silver
Aayush Jha	Psychology of Personality and Individual Differences: Theory and Applications	Elite+Silver
Diya Arora	Enhancing Soft Skills and Personality	Elite+Silver
Mahima Dariyani	Enhancing Soft Skills and Personality	Elite+Silver
Tanvi Jain	Enhancing Soft Skills and Personality	Elite+Silver
Sandeep Kumar	Computer Networks And Internet Protocol	Successfully completed
KUSUM SHARMA	Yoga and Positive Psychology for Managing Career and Life	Elite

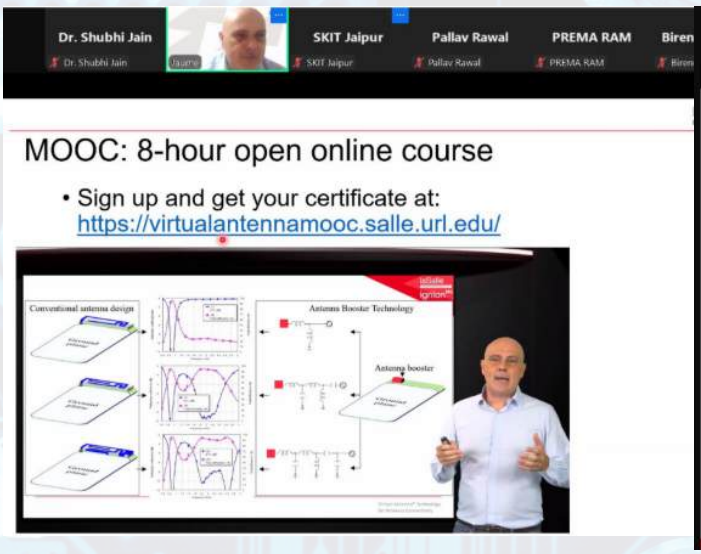
EVENTS ORGANIZED

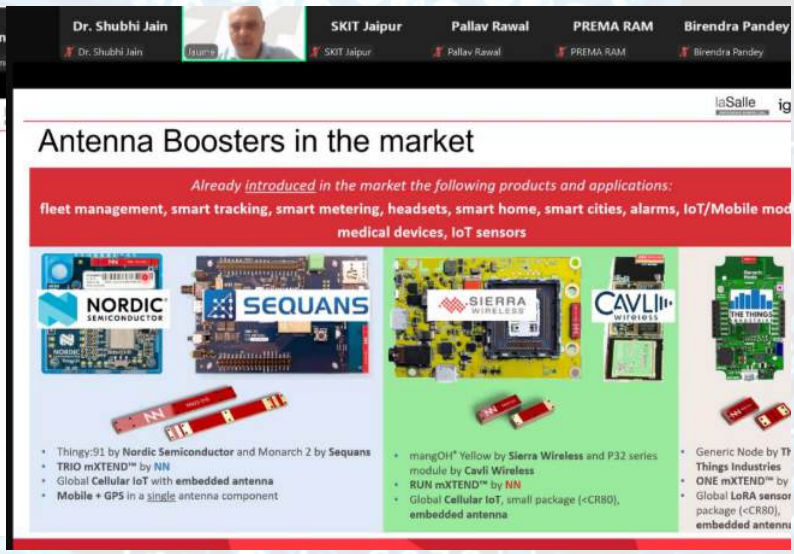
5th International Conference on Advancements in Nanoelectronics and Communication Technologies

The Department organized ICANCT-2025, a two-day international conference that brought together distinguished researchers, academicians, industry professionals, and students from across the globe.

The conference featured insightful discussions and research presentations in Communication, Nanoelectronics, Photonics, IoT, Machine Learning & AI, Antennas, VLSI, and Wireless/Mobile Communications, highlighting innovative advancements and their societal impact.

A total of 95 papers were received, of which 35 were selected for presentation. The event included multiple invited talks by eminent experts such as Professor Pretam Kumar (IIT Patna) on the importance of conferences and “5G: Challenges and Enabling Technologies” Sai Krishna Gunda (Home Depot, USA) on “AI & ML at the Frontiers of Nanoelectronics and Communication Technologies” Dr. Kamal Kishore Choure (SRM Institute of Science and Technology) on “Quantum Computing and Its Applications



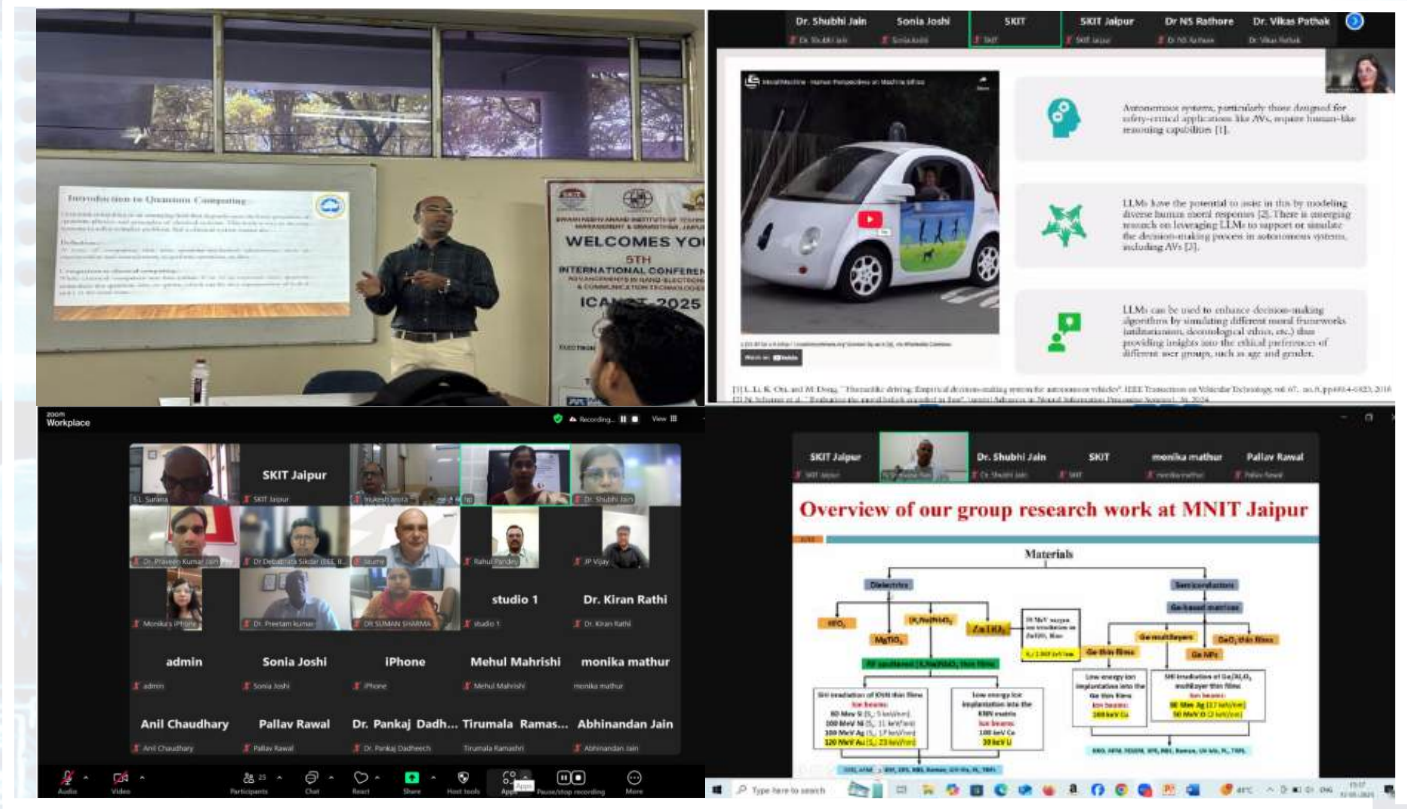


EVENTS ORGANIZED

Dr. Debabrata Sikdar (IIT Guwahati) on “Nanophotonic Metamaterials Utilizing Epsilon-Near-Zero Effect for Free-space Optical Intensity & Polarization Modulation” Dr. Heena Rathore (Texas State University, USA) on “Security and Safety for Autonomous Vehicles Using Generative AI”.

Dr. Jaume Anguera on antenna booster technology and the importance of industry-academia collaboration, and Dr. Srinivas Rao Nelamarri (MNIT Jaipur) on “Ion Beam Modification of Structural and Optical Properties of Semiconductor and Oxide Materials for Optoelectronic Applications.” The sessions provided a platform for researchers to share their work and engage in scholarly discussions.

The event successfully created opportunities for knowledge exchange and collaboration among participants from academia and industry. The conference concluded with a valedictory session where Dr. Srinivas Rao Nelamarri served as the Guest of Honor, marking the successful completion of ICANCT-2025.

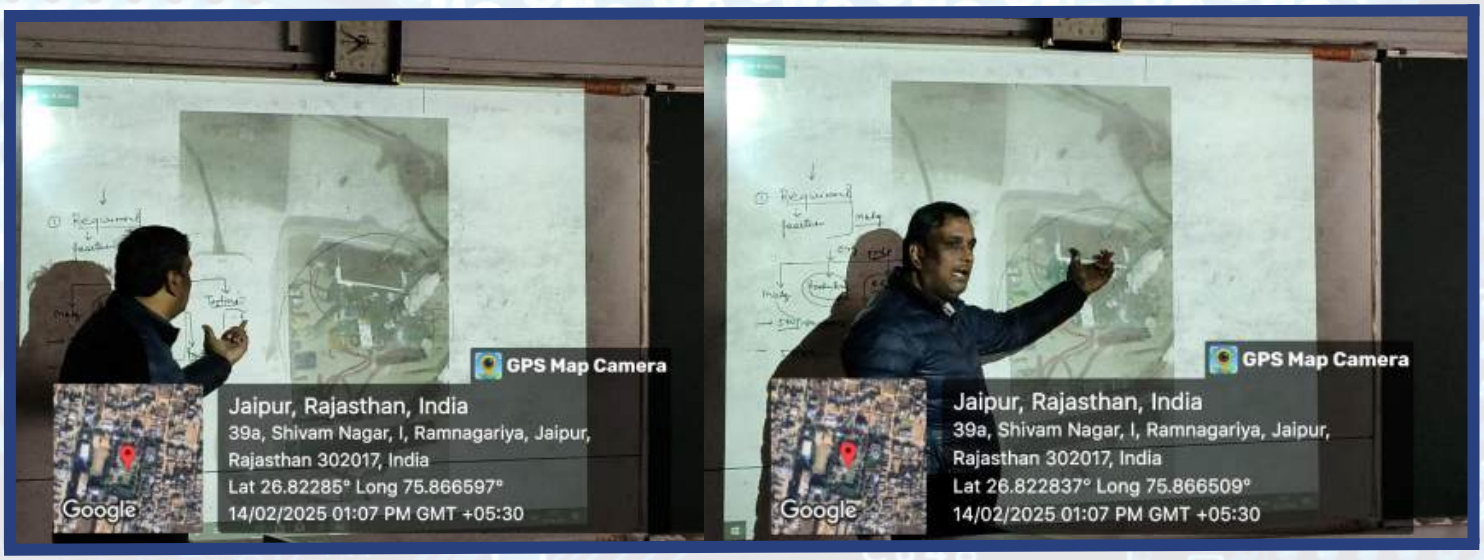


EVENTS ORGANIZED

Workshop on Project Management and Finance

The workshop was held on 14th February 2025, from 12:00 PM to 2:30 PM, and was organized by the ISTE and IETE Student Chapters. The resource person for the event was Mr. Vikas Mathur. The objective of the workshop was to familiarize students with the process of project development and to prepare them for effective project execution.

The session focused on key aspects of project management, including planning, budgeting, and financial documentation. Mr. Mathur provided detailed guidance to help students understand how to manage projects efficiently and encouraged them to develop innovative and constructive projects. This workshop served as a valuable platform for enhancing students' practical knowledge and project management skills. Faculty Coordinators were Dr. Pallav Rawal and Mr. Rahul Pandey



NEWS CORNER

@ समाचार

जयपुर, शनिवार, 17 मई 2025

स्वामी केशवानंद इंस्टिट्यूट ऑफ़ टेक्नोलॉजी, मैनेजमेंट एंड ग्रामोत्थान, जयपुर में सम्मेलन 'एडवांसमेंट इन नैनो इलेक्ट्रॉनिक्स एंड कम्युनिकेशन टेक्नोलॉजी-2025'

(आयुष-अन्तिमा नेटवर्क)
जयपुर (श्रीराम इंदौरिया)। स्वामी केशवानंद इंस्टिट्यूट ऑफ टेक्नोलॉजी, मैनेजमेंट एंड ग्रामोत्थान, जयपुर के इलेक्ट्रॉनिक्स एवं कम्युनिकेशन इंजीनियरिंग विभाग द्वारा दो दिवसीय अंतरराष्ट्रीय सम्मेलन 'एडवांसमेंट इन नैनो इलेक्ट्रॉनिक्स एंड कम्युनिकेशन टेक्नोलॉजी 2025' का हाइब्रिड माध्यम में आयोजन किया गया। जिसमें देश-विदेश से प्रोफेसरों, शोधकर्ताओं एवं विद्यार्थियों ने भाग लिया। उद्घाटन सत्र का शुभारंभ संस्थान के अकादमिक निदेशक प्रो.एसएल सुराणा के स्वागत संबोधन से हुआ जिसमें उन्होंने नैनो टेक्नो... वायरलेस कम्यु... के आपसी...

सम्मेलन की जानकारी साझा ... हुए बताया कि यह AN... श्रृंखला की ... जिसमें ...

ऐसे सम्मेलन छात्रों और शोधकर्ताओं के लिए करंट स्टेट-ऑफ-द-आर्ट टेक्नोलॉजी समझने का एक सशक्त माध्यम है। उन्होंने बताया कि हर पाँच वर्षों में डाटा रेट ...0 गुना बढ़ रहा है और तकनीक ... केवल आकार नहीं, बल्कि ...निम से परिभाषित हो रही है। ...र अतिथि के रूप में उपस्थित ...त सिकदर, एसोसिएट ट्रांसपोर्मेशन ऑफ टेक्नोलॉजी का है। नैनो-इलेक्ट्रॉनिक्स के माध्यम से डिवाइसेस और भी छोटे, तेज और ऊर्जा कुशल हो रहे हैं। उन्होंने 5G, 6G और उससे आगे की तकनीकों के संभावित योगदान पर भी चर्चा की तथा इंटरडिसिप्लिनरी कोलैबोरेशन की महत्ता को रेखांकित किया।
स्पेन के यूनिवर्सिटी रेमन ल्यूल, ...बार्सिलोना से विशिष्ट अतिथि

एसकेआईटी मैनेजमेंट एंड ग्रामोत्थान में अंतरराष्ट्रीय सम्मेलन आयोजित

एडवांसमेंट इन नैनो इलेक्ट्रॉनिक्स एंड कम्युनिकेशन टेक्नोलॉजी का आयोजन

एसकेआईटी तथा आईई.स्टूडेंट चैप्टर ने एमएनआईटी ऑप्टि... के सहयोग से ऑप्टिकल कम्युनिकेशन में प्रगति पर पोस...

P3 Police Public Politics

जयपुर। स्वामी केशवानंद इंस्टीट्यूट ऑफ़ टेक्नोलॉजी मैनेजमेंट एंड ग्रामोत्थान जयपुर में अभियांत्रिकी एवं संचार विभाग के ऑप्टिका स्टूडेंट चैप्टर एस.के.आई.टी तथा आई. ई.स्टूडेंट चैप्टर ने एमएनआईटी ऑप्टिका स्टूडेंट चैप्टर ... ने ऑप्टिकल कम्युनिकेशन ...पिता का

एसकेआईटी में मनाया राष्ट्रीय अंतरिक्ष दिवस

...यपुर।(आस-पास ब्यूरो) स्वामी ...नंद इंस्टीट्यूट ऑफ टेक्नोलॉजी, ...मेंट एंड ग्रामोत्थान, जयपुर में ...का स्टूडेंट चैप्टर और इंस्टिट्यूशन ...इंजीनियर (इंडिया) स्टूडेंट चैप्टर ...ीय अंतरिक्ष दिवस मनाया गया। ...म की शुरुआत अतिथि ...र/इंजीनियर 'एसजी' तथा ...सेंसर रिसीवर डिवीजन, ...प्रयोग केंद्र, भारतीय अंतरिक्ष ...गठन , (इसरो/ एसएसी) ...र्षिता तोलानी, द्वारा इसरो ...न और माइक्रोवेव रिमोट ...के लिए एक अभियान' ...पादायक व्याख्यान के ...ने चंद्रयान मिशन की ...समें माइक्रोवेव सेंसर ...को। उन्होंने इस बात

...पर भी जोर दिया कि इसरो के चंद्रयान मिशन ने न केवल भारत को चंद्र अन्वेषण में सबसे आगे बढ़ाया है, बल्कि अंतरिक्ष अभियानों में माइक्रोवेव रिमोट सेंसिंग के महत्व को भी प्रदर्शित किया है... इस विशेष...

...हुई, जिसका उद्देश्य छात्रों के बीच अंतरिक्ष अन्वेषण, तकनीकी प्रगति... के लिए उनके...

...नेटवर्क को इंस्टॉल... ...चौतियों जैसे कि... ...बनाए रख... ...र ने 5जी... ...की संचार प्रौद्... ...टिकल फाइ... ...का पर चर्चा क... ...न किया। का... ...टर प्रस्तुति प्रतियो... ...रोमांचक पुरस्का... ...ायोजन के संका... ...करण राठी, श्रीमती...

EVENTS ATTENDED BY FACULTY MEMBERS

Dates	Name of Faculty member	Title of the Event
6-11 Jan, 2025	Harshal Nigam	ATAL FDP on Principles of Space Engineering and Space Vehicle Design
6-10 Jan, 2025	Gloria Joseph	ATAL FDP on Advanced and Sutainable Engineering Technology
27 Jan-1 Feb,2025	Dr. Suman Sharma	ATAL FDP on Recent Development in RFand Antenna Design for Various Applications
17-21 Feb,2025	Harshal Nigam	FDP on AI Tools
17-22 Feb,2025	Mamta Jain	ATAL FDP on Wearable Electronics for Biomedical Applications
17-21 Mar,2025	Dr. Neeraj Jain	NITTTR FDP on CAD Practices to Achieve Curriculum Goals
8-12 Apr,2025	Dr. Shubhi Jain	FDP on Cybersecurity threats and Legal issues
21-26 Apr,2025	Dr. Shubhi Jain	FDP on Smart Environment: Technologies & Applications
26 May-4June,2025	Gloria Joseph	FDP on Advanced Digital Signal Processing, Electronics & ICT Academy, MNIT Jaipur

STUDENT CORNER

Sem	Name of the student	Award Type	Team / Individual	Sports/ Cultural
VIII sem	Mohit Ramnani	Winner	Team	Sports
	Mohit Ramnani	Runner-up	Team	Cultural
	Omisha Pareek	Winner	Team	Cultural
	Omisha Pareek	Winner	Team	Cultural
	Piyush Yadav	Winner	Team	Cultural
	Raj Tiwari	Winner	Team	Cultural
	Raj Tiwari	Winner	Team	Cultural
VI sem	Anushka Prajapati	Runner-up	Individual	Cultural
	Babit Sharma	Runner-up	Team	Cultural
	Babit Sharma	Runner-up	Team	Cultural
	Sanskar Chaturvedi	Winner	Individual	Cultural
IV sem	Yogita Keswani	Thirak(Duo)	Team	Cultural
	Gurushi Bhardwaj	Winner	Individual	Cultural

GATE Qualified student(2025) :

SAHIL BOHRA(7TH SEM)

STUDENT CORNER

Aaliya Parveen
3rd Semester
ECE

In crowded halls where voices blend,
New journeys bloom, new dreams ascend.
Equations scribbled, circuits glow,
The seeds of knowledge start to grow.

A question asked, a doubt made clear,
A mentor's words we hold so dear.
Through sleepless nights and pages turned,
The light of wisdom is slowly earned.

Not just machines, not just the code,
But courage found along the road.
For every test, for every fall,
The will to rise defines us all.

So here we stand, with hearts awake,
Not just to learn, but paths to make.
For in each spark, each fleeting flame,
Lives the power to etch our name.

Khushi Jangir
3rd Semester
ECE

Electronics and Communication

Engineering isn't just a subject — it's a way of thinking.

It's where logic meets imagination, where tiny circuits create mighty impacts, and where invisible signals carry the power to connect the world. To be an ECE student is to live in two worlds at once: one of resistors and codes, and another of dreams and discoveries.

We don't just study electricity — we study possibility. Every voltage we measure, every wire we connect, is a whisper of tomorrow taking shape. While others talk about the future, we build it — one project, one spark, one connection at a time. As they say, "The best way to predict the future is to engineer it."

In the quiet hum of our labs, we see art in algorithms and poetry in precision. From communication satellites soaring through space to microchips smaller than a fingernail, the world runs on what we imagine and create. The devices we hold, the networks we rely on, and even the technology that saves lives — somewhere behind it all, there's an ECE mind at work.

Being an ECE student isn't easy; it's a journey of persistence, curiosity, and late-night debugging marathons. But there's magic in that moment when the circuit finally works, when theory turns into reality. That's when we realize — we don't just learn technology, we give it purpose.

In a world that's changing faster than ever, we are the connectors — of people, of ideas, of innovation. The heartbeat of progress lies in the signals we send and the dreams we design. We are not just students of electronics and communication; we are the storytellers of technology. And our story is only just beginning.

Khwaish Rogha
3rd Semester
ECE

Feminism: Redefining Equality in the Modern World

Feminism is more than just a movement; it's a dream for a world where everyone, regardless of gender, is treated with respect and given equal chances. It all started with the idea that men and women should have the same rights. Over time, feminism has grown to support equality and dignity for all people.

Feminism works to challenge the systems that keep gender-based discrimination alive. In the past, women were often denied education, property rights, political power, and personal freedom. The first wave of feminism in the 19th and early 20th centuries focused on securing basic civil rights, such as the right to vote. The second wave in the mid-20th century tackled workplace inequality, reproductive rights, and the roles expected of women at home. Today, feminism is a global movement that supports women while also questioning traditional gender roles and promoting inclusivity for everyone.

Modern feminism uses the term "intersectionality," which was coined by Kimberlé Crenshaw, to recognize that gender inequality often mixes with discrimination based on race, class, ethnicity and disability.

This inclusive way of thinking recognizes that the struggles faced by a woman living in a rural area in India differ from those of a professional in a city in London. Both experiences matter, and both deserve to be heard. Despite all the progress, gender bias still plagues us. Wage gaps, gender-based violence, and the underrepresentation of women in leadership positions continue to affect people globally. In many places, women and girls face strict expectations that restrict their freedom and opportunities. Feminism seeks to break down these barriers, not to elevate women above men, but to create a world where everyone collaborates, respects each other, and is treated equally.

Feminism isn't just about women's rights; it's about ensuring fairness for everyone, regardless of gender. By rejecting harmful stereotypes, like the notion that men should suppress their emotions or that women should always be nurturing, feminism humanizes us all. It promotes empathy, understanding, and progress for everyone.

At its heart, feminism is about transforming the rules so that everyone has an equal voice, is valued, and has the same opportunities. It reminds us that freedom and fairness are rights we all deserve, not just privileges. The power of feminism lies in both speaking up and holding onto hope, the hope that equality can become a reality for all.

Vineet Sharma
3rd Semester
ECE

The Rise of 6G: Future of Wireless Communication

"6G is where science fiction becomes engineering reality"

Introduction

While 5G is still being rolled out globally, researchers and engineers are already setting their sights on the next revolution — 6G, the sixth generation of wireless technology. As ECE students, understanding this upcoming wave is crucial. It's not just about faster internet, but about transforming how we connect, sense, and interact with the world.

What is 6G?

Expected to arrive around 2030, 6G will go far beyond 5G's capabilities. It aims to create an intelligent, interconnected digital ecosystem, combining ultra-fast communication, real-time sensing, and AI-driven automation.

Key Features:

Speeds up to 1 Tbps

Ultra-low latency (~0.1 ms)

Built-in AI at the network edge

Communication at Terahertz (THz) frequencies

Core Technologies Behind 6G

1. Terahertz Communication

Using frequencies between 100 GHz and 10 THz enables lightning-fast data, but requires next-gen antennas and components.

2. AI-Native Networks

6G will have self-learning, self-healing networks — AI won't just support, it will run the show.

3. Reconfigurable Intelligent Surfaces (RIS)

Imagine buildings that guide signals — smart surfaces will reflect and direct signals for better connectivity.

4. Integrated Sensing and Communication (ISAC)

Devices will "sense" their surroundings, powering applications like autonomous vehicles, drones, and smart cities.

Future Applications

Holographic Communication – Attend classes or meetings via lifelike 3D projections.

Tactile Internet – Experience touch remotely — crucial for robotic surgery and VR.

Space-Air-Ground Integration – Seamless networks across satellites, drones, and ground systems.

Digital Twins – Real-time digital copies of cities, factories, or hospitals for better management and planning.

Why It Matters to ECE Students

6G isn't just buzz — it's your future. Key areas ECE students must understand include:

THz signal processing & antenna design

Massive MIMO and advanced modulation

AI-powered embedded systems

Sustainability and ethical tech design

Top companies like Samsung, Nokia, and Huawei are already building 6G research labs. The next-gen wireless revolution has begun — and we have the skills to be part of it.

Conclusion

6G isn't just about faster data — it's about merging intelligence, connectivity, and human experience into one seamless network. As future engineers, let's not wait for the future — let's help build it.

ECE INDUSTRY BUZZ – 2025

India's Semiconductor Push

The Indian government is investing heavily in Semicon India, with fabs being set up in Gujarat and collaborations with companies like Micron and Tower Semiconductor. This means VLSI and chip design jobs will surge in the next decade — a golden opportunity for ECE graduates.

India is entering a historic phase in semiconductor manufacturing, backed by one of the world's most ambitious government initiatives — Semicon India. With massive investments, new fabs, and global partnerships, the country is positioning itself as a major player in the global chip ecosystem.

The Government of India has approved ₹76,000 crore under the Semiconductor Mission, enabling world-class fabrication units and packaging facilities.

New fabs are being set up in Gujarat, with companies like Micron Technology, Tower Semiconductor, and other global leaders establishing advanced manufacturing and assembly plants. This marks the beginning of a long-term technological transformation.

For Electronics and Communication Engineering (ECE) graduates, this is a once-in-a-generation opportunity. As India builds its semiconductor supply chain — from chip design and verification to fabrication, testing, and packaging — the demand for skilled engineers in VLSI, embedded systems, RF design, device physics, and automation is set to skyrocket.

Over the next decade, India will require tens of thousands of chip engineers, making VLSI one of the most promising career domains.

ECE INDUSTRY BUZZ – 2025

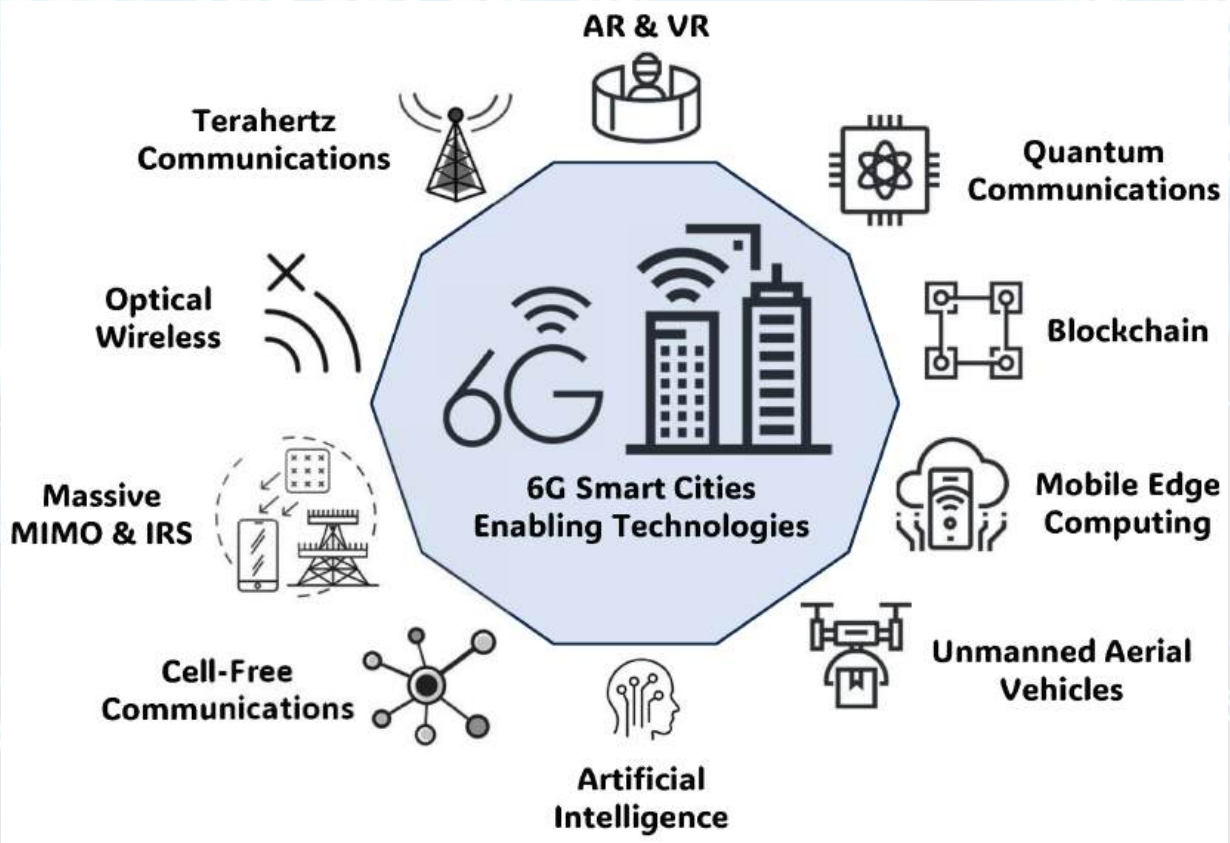
6G Research Gains Momentum

While India is still scaling up its 5G rollouts, the global race toward 6G has already begun. Companies like Nokia, Samsung, Huawei, and leading research labs worldwide are testing breakthrough technologies that could redefine communication by 2030. 6G aims to go far beyond faster speeds.

It will bring AI-native networks, where artificial intelligence autonomously manages, optimizes, and heals networks in real time.

Future applications include holographic communication, immersive XR experiences, tactile internet, and ultra-reliable connectivity for robotics and automation.A major shift will be the integration of satellite and terrestrial networks, ensuring seamless global coverage

As India invests in 6G R&D through the Bharat 6G Vision, the next decade promises innovation, new industries, and advanced career opportunities for students in ECE, AI, IoT, and Telecom.



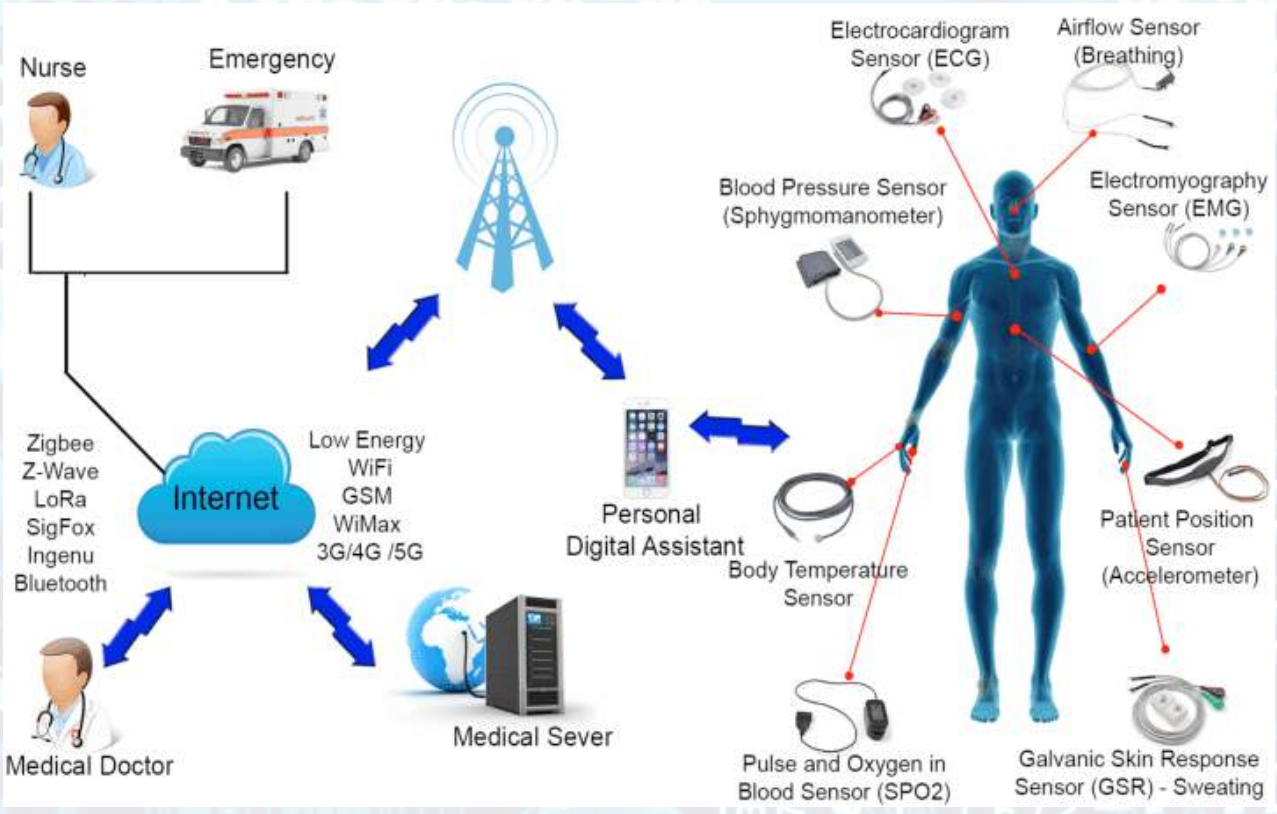
ECE INDUSTRY BUZZ – 2025

IoT & Embedded Systems in Healthcare

The IoT healthcare market is exploding, driven by innovations in wearable devices, smart medical equipment, and remote patient monitoring systems. From tracking vital signs in real time to enabling predictive health analytics, IoT is transforming how healthcare is delivered.

In India, a wave of startups is building low-cost, high-accuracy health sensors, catering to both urban hospitals and rural telemedicine networks.

These solutions reduce costs, improve accessibility, and support timely medical interventions. For embedded systems and electronics engineers, this growth opens significant opportunities in sensor design, firmware development, edge computing, wireless communication, and AI-enabled health data processing. With the demand for smart medical devices rising worldwide, the sector promises strong career growth and impactful innovation.



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