स्पंदन

Newsletter of Department of Electronics Engineering
J. C. Bose University of Science and Technology, YMCA, Faridabad, Haryana

April-June 2024

From Chairperson's Desk

Dr. Pradeep Dimri
Chairperson and Professor,
Department of Electronics Engineering

Dear Esteemed Electronics Family of J.C. Bose University of Science and Technology, YMCA, Faridabad,
Warm Greetings!
"Innovation is the bridge between challenges and solutions."
With this spirit, I am pleased to present to you the latest edition of "स्पंदन," the newsletter of the Electronics Department. This edition captures our department's dedication, achievements, and continuous progress. While it offers just a glimpse of our collective efforts, it stands as a testament to the enthusiasm and commitment of our students and faculty. We welcome your valuable feedback and look forward to your continued support in making our journey more impactful.
Best wishes and regards.

Mission

- To frame a well-balanced curriculum with an emphasis on basic theoretical knowledge as well as the requirements of the industry.
- To motivate students to develop innovative solutions to the existing problems for the betterment of society.
- Collaboration with the industry, research establishments, and other academic institutions to bolster the research and development activities.

Vision

To be a Centre of Excellence for producing high-quality engineers and scientists capable of providing sustainable solutions to complex problems and promoting cost-effective indigenous technology in the area of Electronics, Communication & Control Engineering for Industry, Research Organizations, Academia, and all sections of society.

News & Events:

ACTIVITY REPORTS

Guided by our dedication to academic excellence and knowledge dissemination, the Department of Electronics Engineering at J.C. Bose University of Science and Technology, YMCA, proudly introduces an inspiring array of initiatives for 2024.

Expert Session on "Unmanned Aircraft Systems and Applications

The Department of Electronics Engineering of J.C Bose University of Science and Technology, YMCA, Faridabad hosted an enlightening expert session on "Unmanned Aircraft Systems and Applications" delivered by Dr. Kalpana Jahari in the University Auditorium. The session commenced by welcoming the keynote speaker with a planter presented by Prof Pradeep Dimri, Chairperson of the Department of Electronics Engineering and Dr Nitin Sachdeva, session coordinator.

Dr. Kalpana's session encompassed a thorough introduction to unmanned aircraft systems, covering diverse aspects crucial for understanding drones. She delineated the various types and classifications of drones and elucidated terminology. She discussed components such as motors, frames, and LIPO batteries.
Additionally, she delved into advanced topics, including brushless motors, racing drones, and propeller types, explaining concepts like pitch and the significance of CCW and CW rotation.

Furthermore, she highlighted essential features such as the nose, GPS integration, and the dynamics of yawing, speed, direction, and thrust in quadcopter drones. She also explored critical functionalities like pitch and roll, differences between motors and servo motors, fixed-wing aircraft control surfaces, and the role of flight controllers, electronic speed controllers, gyro sensors, and pressure handlers in drone stabilization. Moreover, she addressed security concerns like GPS jamming.

She highlighted regulations regarding flight zones and licensing requirements for nano and micro drones, underscoring the vast scope of drones across various fields. The expert session proved immensely beneficial for the students, offering valuable insights into the latest technologies and advancements in unmanned aircraft systems. Dr. Jahari's lucid explanations and engaging delivery facilitated a comprehensive understanding among the attendees. The event was a resounding success, leaving the participants enriched and inspired about the future prospects and scope in the field.

CRIMSON ACHIEVEMENTS

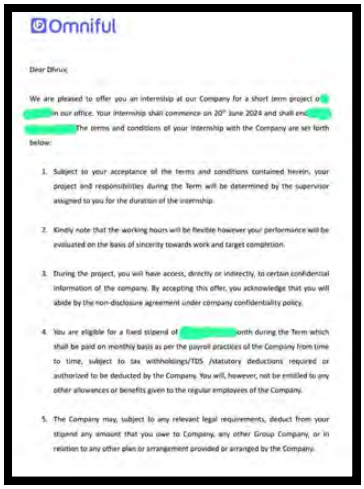
Dhruv Singhal - Participated in Code Clash by VIT Vellore

Department: *Electronics and Computers, 3rd Year*

Achievement: Dhruv participated in Code Clash, a competitive programming hackathon hosted by VIT Vellore in collaboration with IEEE TEMS. The 3-hour challenge tested participants' coding skills through a series of rigorous problem-solving tasks, pushing them to think fast and code efficiently.

Dhruv Singhal - Summer Intern at Omniful

Department: *Electronics and Computers, 3rd Year*



Achievement: Dhruv successfully secured a summer internship at Omniful.ai, contributing as a Data Analyst and Business Development Associate. He played a key role in analyzing data-driven insights and supporting business growth strategies, gaining valuable industry experience.

FOOD FOR THOUGHT

By: Raghav Verma - ENC (2nd year)

Networking: A Career Catalyst

Networking isn't just a corporate buzzword; it's a career game-changer for students. Studies show that 85% of jobs are found through networking. Yet, only 25% of students actively cultivate professional connections. In a production powerhouse like India, where 1.5 million engineers graduate annually, competition is bound to be fierce, making networking a crucial differentiator.

Building a strong network starts with platforms like LinkedIn, where 90% of recruiters scout for candidates. Attending industry events and seminars can open doors, as 70% of professionals credit their first job to such interactions. College clubs, alumni networks, and faculty connections also play a key role, with 80% of students securing internships through referrals. Engaging with mentors further boosts job prospects by 60%, providing valuable industry insights. It is not just about grades; students must learn to present themselves and make valuable acquaintances.

In a world driven by connections, networking is no longer optional. The earlier students invest in relationships, the greater their career opportunities. LinkedIn's co-founder Reid Hoffman said, "Your network is the people who want to help you, and you want to help them, and that's what builds your career."

The Space Race: India's Ascent to the Stars

The global space race is more intense than ever, with nations competing for dominance beyond the skies. The U.S. and China are leading contenders, Pioneering missions such as the Artemis program to return Man to the Moon and planning on building Lunar Stations. Meanwhile, organisations like SpaceX and Blue Origin are leading the private sector. With global space spending surpassing $600 billion in 2023, the race is accelerating rapidly.

Amongst these Giants, India has emerged as a formidable contender. Achieving Chandrayaan-3's historic Moon landing and preparing for Gaganyaan, our first human spaceflight. Despite a budget nearly 20 times smaller than NASA's, ISRO delivers insanely efficient missions and, most importantly - results, Including the Mangalyaan, which reached Mars for just $74 million. There are movies on the same concept with a higher budget! This puts in perspective what ISRO is capable of. With over 190 space startups and increasing global collaborations, India is not just keeping pace—we are shaping the future of space exploration.

Research publications:

• Naresh Kumar, Pradeep Kumar and Manish Sharma, " Reconfigurable MIMO Antenna for IoT Wireless Applications Controlled by Embedded System," in Journal of Telecommunications and Information Technology, vol. 2, no. 2, April 2024.

• Poorvika Singh, Rohan Bansal, Nitin Sachdeva and Pradeep Dimri, "High Speed 64 Bit Vedic & Booth Multiplier Implementation Using FPGA," in 3rd International Conference on Artificial Intelligence For Internet of Things (AIIoT), Vellore, India, May 2024.

• Sunil Jadav, "Estimation of Bandwidth, Voltage Swing and DC Coefficients for VLSI Interconnects: Current Mode Technique" in International Journal of Electronics Letters, 1-11, June 2024.

Birthday Celebration

The department fosters a welcoming and inclusive environment by celebrating the birthdays of its faculty, workshop staff, and support team. Every month, a special day is set aside to honour those celebrating their birthdays, marked by heartfelt gestures such as gifting planters and personalized birthday letters. These tokens of appreciation recognize their invaluable contributions to the department's growth and success.

Birthdays of The Quarter

Mr. Ramavtar (2nd April)
Ms. Kusum Arora (4th April)
Mr. Rahul (7th April)
Ms. Gunjan Sardana (9th April)
Mr. Varinder Singh (10th April)
Mr. Lalit Mohan (1st May)
Mr. Sunil Jadav (1st June)
Ms. Deepika Mundal (6th June)
Ms. Lavita Virmani (19th June)
Mr. Mukesh Kumar (30th June)

Message From Editorial Team

Curiosity sparks innovation, and creativity fuels progress—where passion and dedication unite, new possibilities emerge. With immense pride and excitement, we, the Editorial Board, present "स्पंदन"—the official newsletter of the Electronics Department at J.C. Bose University of Science and Technology, YMCA.

This edition reflects the department's ongoing journey of excellence, capturing significant achievements, milestones, and advancements in technology. We extend our deepest gratitude to our mentors—Dr. Pradeep Dimri, Dr. Bharat Bhushan, Dr. Sangeeta Dhall and Dr. Nisha Yadav—for their invaluable guidance and unwavering encouragement. A heartfelt appreciation also goes to our seniors, whose support and mentorship have played a crucial role in shaping this initiative.

Each page of "स्पंदन" embodies the dedication, innovation, and hard work of our team. More than just a newsletter, it stands as a testament to the dynamic ideas and forward-thinking spirit that define our department.

We invite you, our esteemed readers, to explore this edition and engage with the inspiring insights and advancements within. Your feedback will serve as a guiding force, motivating us to enhance our efforts and foster a thriving, tech-driven ecosystem.

Let us come together to celebrate the power of knowledge, creativity, and innovation!

For any suggestions and feedback, get in touch with us at: spandan.eee@gmail.com

Editorial Team:- Bharat Bhushan (AP), Sangeeta Dhall (AP), Nisha Yadav (AP)
5th Semester:- Amolica(ECE), Atul(ECE), Dhruv(ENC), Dev(EEIOT), Jyotsna(ECE), Poonam(EEIOT), Payal(EEIOT), Pragya(EEIOT)
3rd Semester: Pranjal Mishra (ECE), Parth Dalal EE(IOT), Isha (ECE), Naman Mishra (ENC), Vanshika Sharma (ENC), Anwesha Kat (ENC), Raghav Verma (ENC), Digvijay Singh EE(IOT), Nidhi (ECE), Sneha (ENC), Umesh Bhardwaj (ENC)