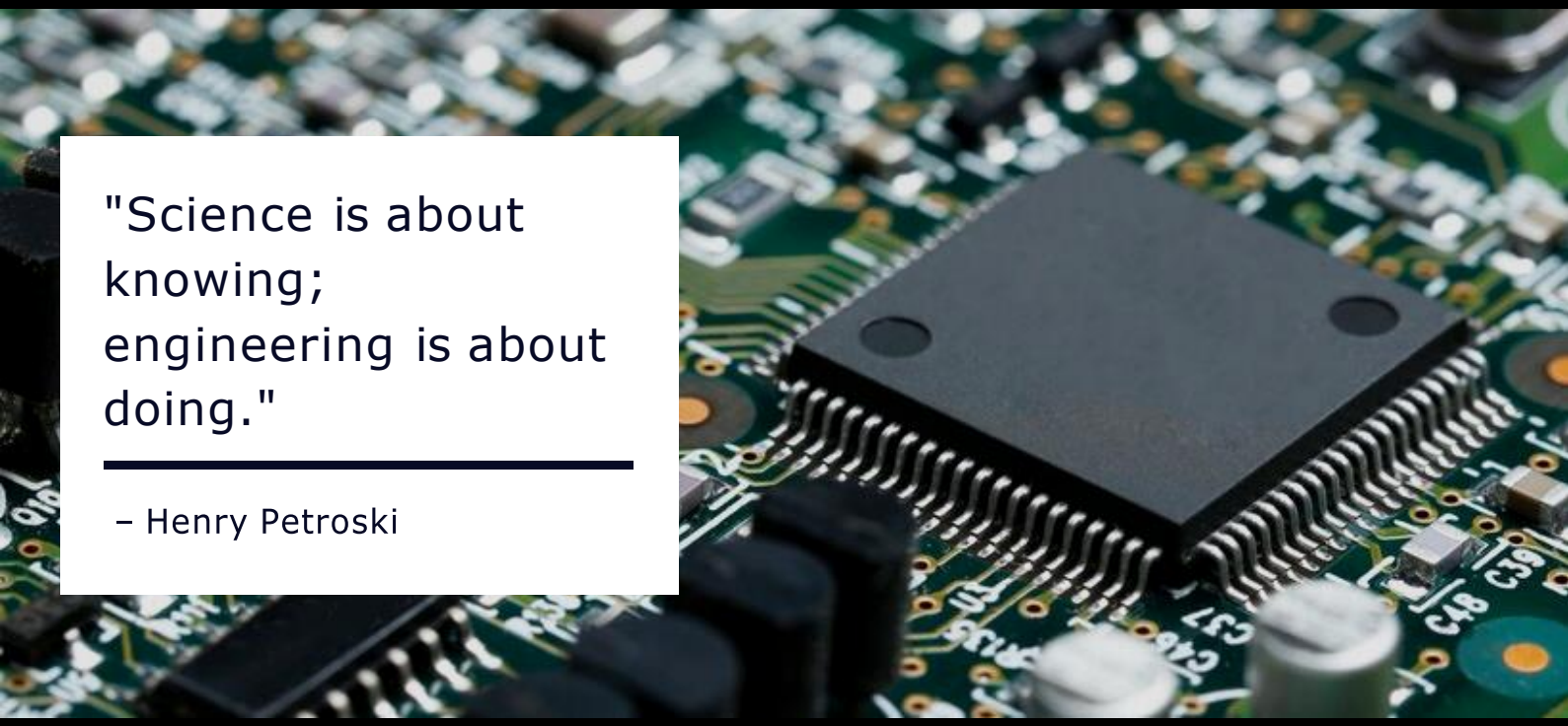
NOV-DEC 2024 | VOL 7

NEWSLETTER

FOR ELECTRONICS AND COMPUTER SCIENCE



"Science is about knowing; engineering is about doing."

– Henry Petroski

Branch : ECS

Welcome to the official newsletter of the ECS Department. Here, we celebrate our achievements, share exciting activities, and keep you informed about the latest advancements in electronics and computer science.

SHREE L.R TIWARI COLLEGE OF ENGINEERING

022 2812 0144

Kanakia Rd, Kanakia Park, Mira Road, Mira Bhayandar, Maharashtra 401107

ecssa-website.vercel.app

slrtce.in

NOV-DEC 2024 | VOL 8

NEWSLETTER

FOR ELECTRONICS AND COMPUTER SCIENCE

VISION:

Department of Electronics and computer science will imbibe the global competence to the graduates aligning with educational excellence, research contribution and technological innovation to serve the nation, industry and society.

MISSION:

M1:
To create the core competent graduates by providing knowledge, skills and commitment to the lifelong learning.

M2:
To train students for adapting technological advancement and challenges in ECS.

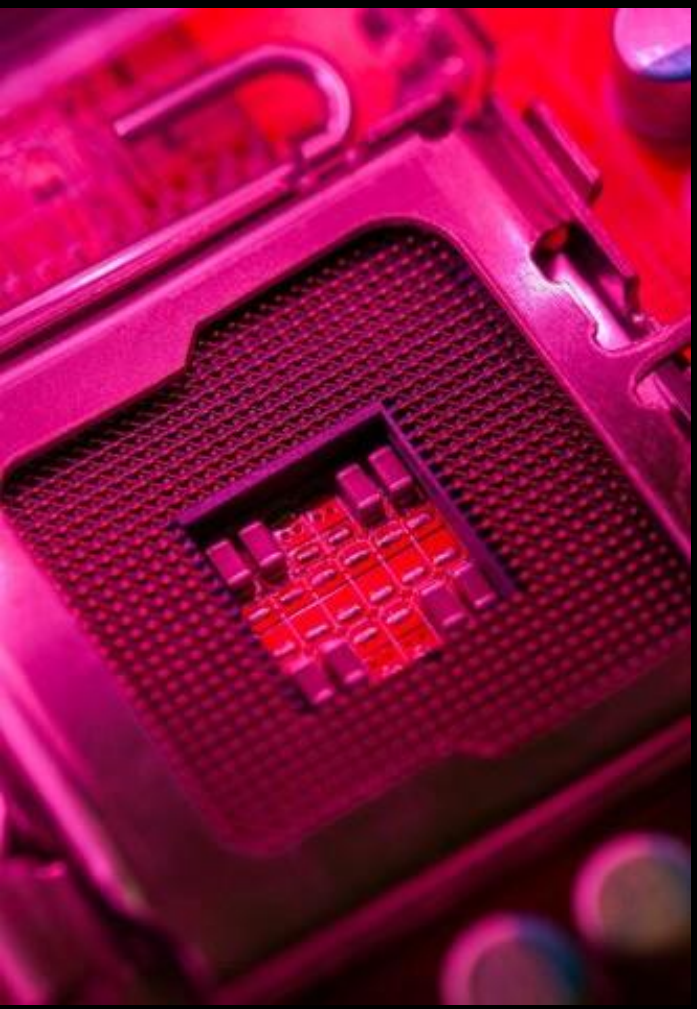
M3:
To inculcate professional ethics, values and entrepreneurial attitude as per the need of industry and society.

PEO (Program Educational Objective) of the Department:

PEO1: To prepare learners with a strong foundation required to identify, solve Electronics Engineering problems and to design Electrical and Electronics system.

PEO2: To inculcate research and development ability and to prepare students for successful career in industry and to work as part of teams on multidisciplinary projects.

PEO3: To inculcate life-long learning capabilities and to introduce them to professional ethics and code of professional practice.



PSO (Program Specific Outcomes):

PSO1: To apply the knowledge of mathematics, physics, electronics to solve complex engineering problems in Electronic Devices and Circuits, VLSI, Embedded systems, digital systems, microprocessors, Analog & Digital communication and other associated topics.

PSO2: To develop all round personality with multiple skills like leadership, verbal and written communication, team work, to be sensitive and responsible towards society.

PSO3: Apply the contextual knowledge of Electronics Engineering to assess social, environmental, health, safety, legal and cultural issues with professional ethics and function effectively as an individual or a leader in a team to manage different projects in multidisciplinary environments as the process of life-long learning.

RESOURCE HUB!

Your Guide to Mastering Skills

find trusted learning resources for different technical and career-oriented topics.

DSA & Competitive Coding

Recommended: Take U Forward (TUF)
Why? Well-structured explanations and coding playlists.

Aptitude & Logical Reasoning

Recommended: Indiabix
Why? Great for interview prep and placements.

Web Development & Frontend

Recommended: Frontend Mentor & MDN Docs
Why? Hands-on projects and proper documentation.

Machine Learning & AI

Recommended: Kaggle & Coursera (Andrew Ng's course)
Why? Real datasets and guided learning.

RESOURCE HUB!

Your Guide to Mastering Skills

find trusted learning resources for different technical and career-oriented topics.

Interview Preparation

Recommended: GeeksforGeeks & LeetCode
Why? Company-specific questions and structured practice.

Mini-Projects & Innovation

Recommended: Devpost & GitHub repositories
Why? Helps students find hackathons and contribute to projects.

Soft Skills & Communication

Recommended: LinkedIn Learning & Toastmasters
Why? Helps in personality development and public speaking.

FLYING BEAVERS!

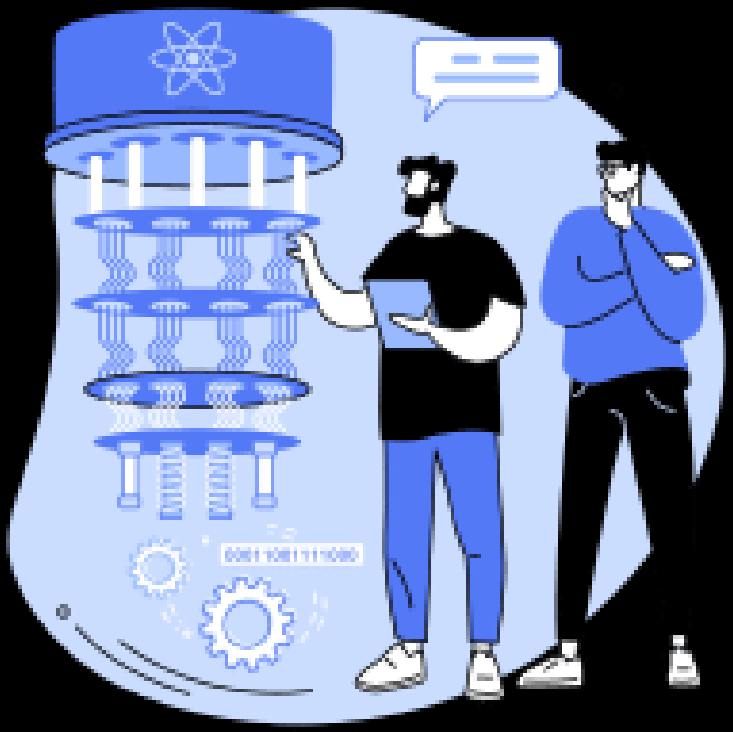
STUDENTS TOPPERS LIST

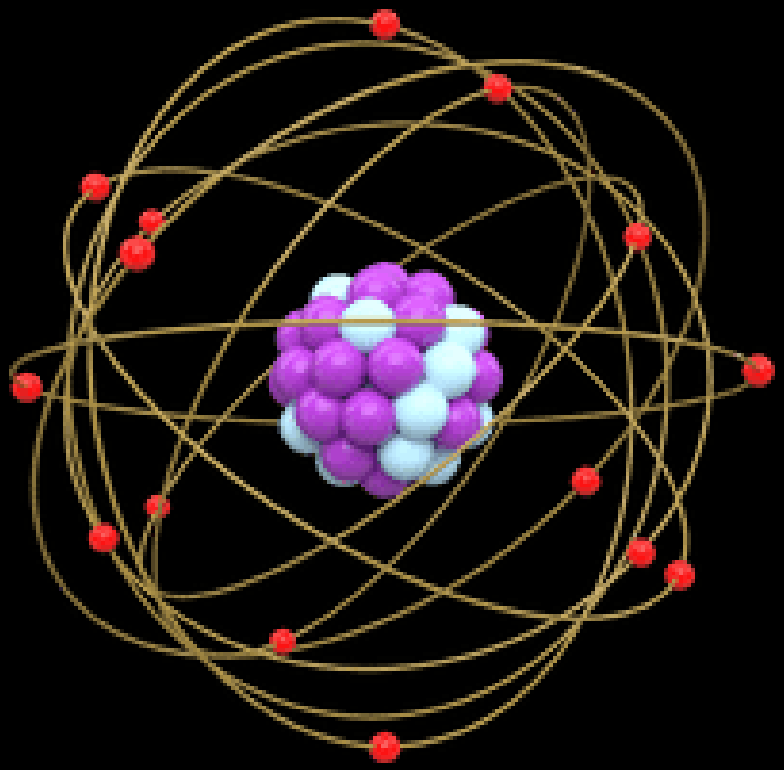
Aspiring Engineer's NanoTechTalk!

Articles by Students

QLED

Quantum dots are nano-sized semiconductor particles that have unique optical and electronic properties due to their size and shape. These particles are so small that they exhibit quantum mechanical properties, making them incredibly versatile for various applications. They can emit specific wavelengths of light when exposed to ultraviolet light, making them useful in displays and lighting. In solar energy, quantum dots have been used to improve the efficiency of solar cells by enabling them to capture a wider spectrum of sunlight. This allows quantum dot solar cells to convert more of the sun's energy into electricity.



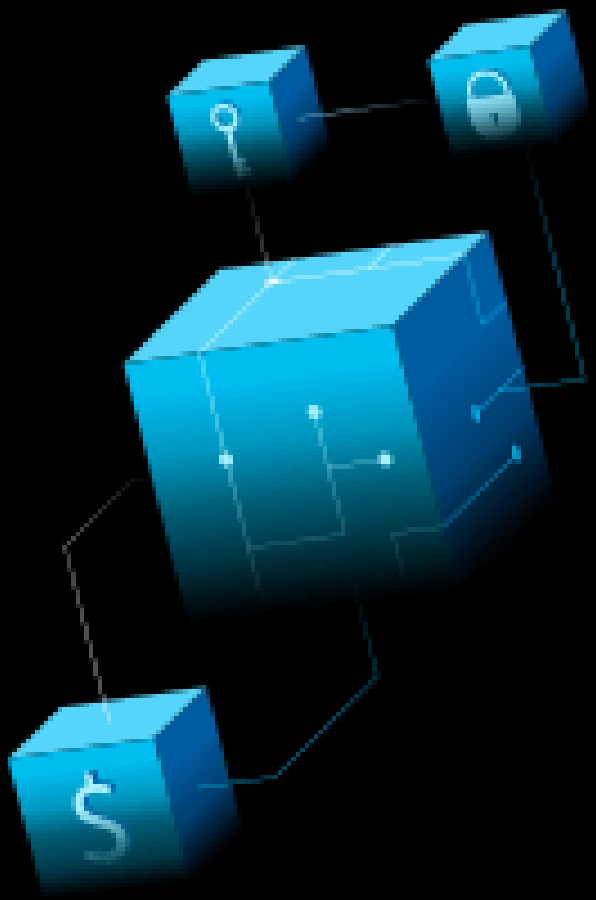


In addition to solar cells, quantum dots have significantly impacted the display industry, especially in QLED (Quantum Dot Light Emitting Diode) televisions. These TVs use quantum dots to produce brighter, more vibrant colors and better energy efficiency compared to traditional LED screens. Quantum dots also improve medical imaging by providing precise, high-resolution images, allowing for more accurate diagnostics and earlier detection of diseases. As quantum dot technology advances, it holds promise for revolutionizing fields such as renewable energy, entertainment, and healthcare.

-by Faheem Shaikh SE ECS

Cryptocurrency

Cryptocurrency is based on blockchain technology, a decentralized and distributed ledger system that records all transactions across a network of computers. Unlike traditional financial systems, which rely on central authorities like banks, cryptocurrencies operate without a central intermediary, ensuring peer-to-peer transactions. The blockchain is maintained by a network of nodes, or computers, that verify and validate transactions through consensus mechanisms like proof of work or proof of stake. This decentralized approach not only ensures security and transparency but also prevents fraud and manipulation, as every transaction is cryptographically secured and visible to all participants in the network.

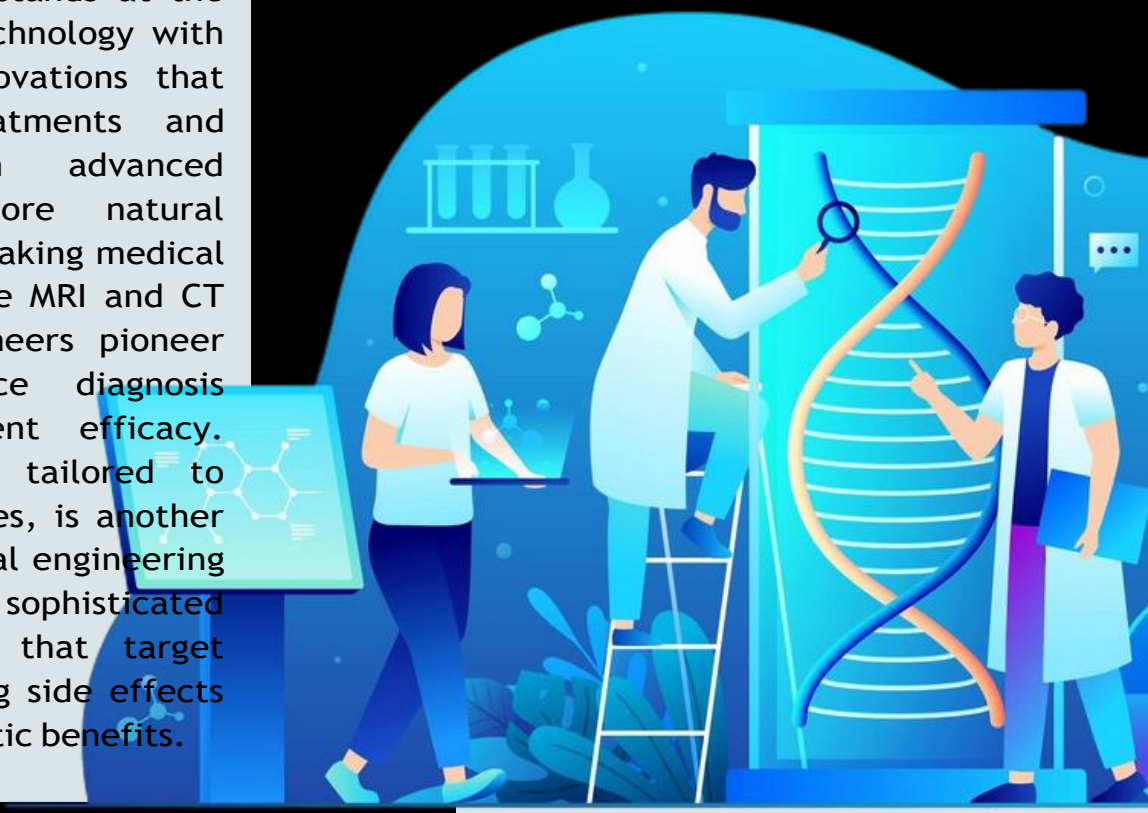


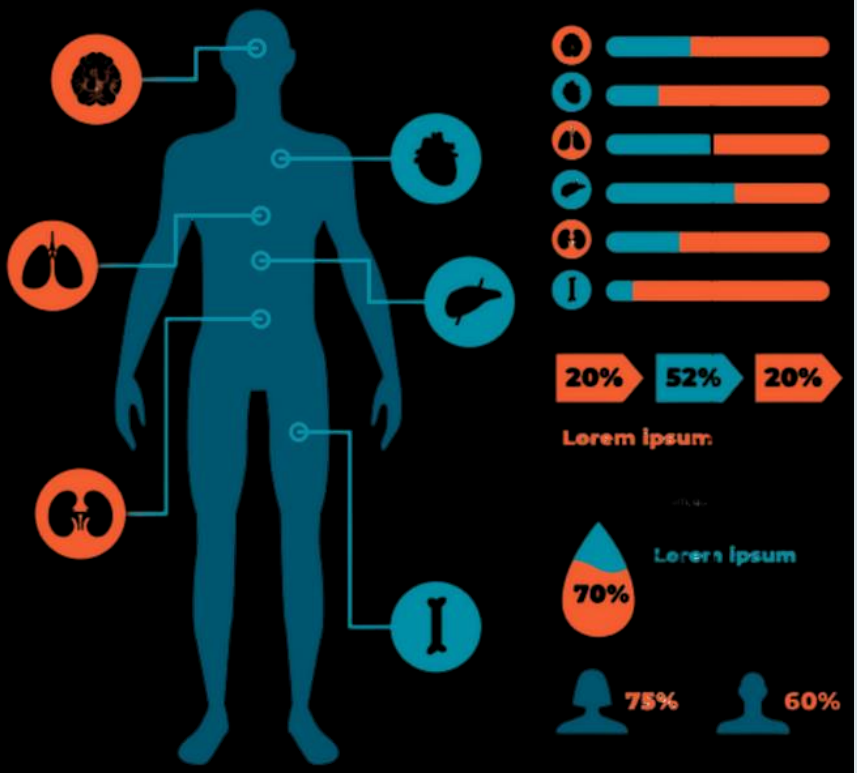
The rise of cryptocurrencies has sparked significant interest across various industries, particularly in technology and finance. Engineers, in particular, play a crucial role in developing the infrastructure that supports cryptocurrencies, from designing blockchain protocols to ensuring the security and scalability of platforms. With applications extending beyond currency, such as in smart contracts and decentralized finance (DeFi), cryptocurrencies are poised to impact industries ranging from banking to supply chain management. As we continue to explore the potential of this rapidly evolving field, engineers will remain at the forefront of creating innovative solutions that shape the future of finance and technology.

-by Zahra Mohammad Kasim SE ECS

Innovations in Healthcare Technology

Biomedical engineering stands at the forefront of merging technology with healthcare, driving innovations that redefine medical treatments and patient care. From advanced prosthetics that restore natural movements to groundbreaking medical imaging technologies like MRI and CT scans, biomedical engineers pioneer solutions that enhance diagnosis precision and treatment efficacy. Personalized medicine, tailored to individual genetic profiles, is another frontier where biomedical engineering excels. Engineers design sophisticated drug delivery systems that target specific cells, minimizing side effects and maximizing therapeutic benefits.





medicine, offering hope through the development of artificial organs and tissues. These technologies pave the way for innovative approaches in transplantation and disease treatment. Furthermore, wearable devices and remote monitoring systems enable proactive health management. These innovations provide real-time health data, empowering patients and healthcare providers alike to make informed decisions and intervene promptly when necessary.

Follow us on [insert social media links] to stay updated on the latest biomedical engineering breakthroughs transforming healthcare. Join us as we explore how technology is reshaping medicine and improving lives worldwide.

Remote Monitoring and Wearable Devices

Remote monitoring and wearable devices represent a transformative shift in healthcare, leveraging technology to empower patients and enhance healthcare delivery.

These devices, ranging from smartwatches to specialized medical sensors, continuously monitor vital signs such as heart rate, blood pressure, and oxygen levels. They provide real-time data, allowing healthcare providers to remotely track patients' health status and intervene promptly when necessary. This capability is particularly crucial for managing chronic conditions such as diabetes, hypertension, and heart disease, enabling early detection of health deterioration and proactive intervention to prevent complications.

As technology continues to evolve, so do these devices, integrating advanced features such as AI-driven analytics for predictive health monitoring and biometric authentication for secure data transmission. The intersection of healthcare and wearable technology holds immense promise for improving patient outcomes, enhancing quality of life, and optimizing healthcare resources.

Stay informed about the latest advancements in remote monitoring and wearable devices by following us on [insert social media links]. Join us as we explore how these innovations are reshaping the future of healthcare delivery.

-by Sumitra Singh TE ECS

Enhancing Human Capabilities

Technological advancements are revolutionizing how we enhance human capabilities, pushing the boundaries of what's possible in various fields. One of the most significant advancements is in prosthetics. Modern prosthetic devices are now equipped with sophisticated sensors and actuators that mimic natural movements with precision. These innovations empower individuals with limb differences or disabilities by providing them greater mobility, functionality, and comfort in their daily lives. In the realm of medical imaging, technologies like MRI and CT scans have transformed diagnosis and treatment planning. These imaging techniques offer detailed insights into the body's internal structures.

enabling healthcare professionals to make more informed decisions and deliver personalized care that improves patient outcomes. Neural interfaces and brain-computer interfaces represent another frontier in enhancing human capabilities. controlling devices through thought and enhancing cognitive abilities. Technological advancements also extend to wearable devices and remote monitoring systems. These devices continuously track vital signs and health metrics, allowing for proactive health management and early intervention. They empower individuals to monitor their health in real-time and collaborate more effectively with healthcare providers, enhancing overall health outcomes.

-by Shaunak Sastikar

EVENTTIA!
Events carried out till now

Cloudify - Cloud Computing Seminar

The Cloudify - Cloud Computing Seminar, organized by the Electronics & Computer Science Students Association (ECSSA) on 16/08/2024, was an insightful session aimed at equipping students with fundamental knowledge and hands-on experience in cloud computing. Conducted by Miss Namrata Ravat, the seminar attracted 25 enthusiastic participants from Electronics and Computer Science backgrounds. Over the course of two hours, students were introduced to key cloud computing concepts, including AWS, EC2 instances, and various cloud platforms such as Public, Private, Hybrid, and Community Clouds. The seminar not only provided theoretical knowledge but also featured practical demonstrations, allowing students to gain hands-on experience in creating and managing EC2 instances on AWS. Through real-world case studies, participants learned how cloud computing is applied across different industries, enhancing their understanding of its significance in modern technology. The event also fostered networking opportunities, encouraging students to discuss emerging trends and potential projects in cloud computing. Overall, the seminar successfully broadened students' perspectives, inspired them to explore cloud computing further, and equipped them with skills that could be beneficial for their academic and professional growth.

Teacher’s Day

The Teacher's Day Celebration, organized by the Electronics & Computer Science Students Association (ECSSA) on 05/09/2024 under the guidance of Ms. Aarti Naik, was a memorable event dedicated to honoring the invaluable contributions of teachers. With 57 students from SE, TE, and BE, along with 10 faculty members in attendance, the event was a perfect blend of gratitude, fun, and appreciation. The celebration commenced with a warm welcome speech by Master Vaibhav Vishwakarma and Miss Manashree Jagtap, highlighting the significance of teachers in shaping students’ lives. A special slideshow dedicated to teachers set a heartfelt tone for the event. The program featured engaging activities such as Guess the Teacher, The Whisper Challenge, and Blindfolded Direction Game, fostering an interactive and enjoyable atmosphere for both students and faculty.

The appreciation ceremony was the highlight of the event, where students expressed their gratitude through heartfelt speeches, personalized cards, and special tokens of appreciation. Teachers were deeply moved by the recognition and the effort put in by the organizing team. The event concluded with a joyful cake-cutting ceremony and a vote of thanks delivered by Mrs. Manjiri Gogate and Ms. Aarti Naik. The feedback from both teachers and students was highly positive, with many suggesting that such celebrations continue in the future with even more engaging activities. Overall, the event successfully strengthened the teacher-student bond and created lasting memories.

ENGINOMICS

(Engineer's Week)

Pathfinders : Navigating 2nd Year

The Pathfinders: Navigating 2nd Year mentoring session, held on September 18, 2024, under the guidance of Mrs. Rohini Rathod, aimed to help second-year (SE) students navigate academic challenges and extracurricular opportunities. Led by third-year (TE) students, the session covered essential topics such as time management, balancing academics with extracurriculars, project selection, and internship preparation. The interactive format allowed SE students to ask questions and receive practical advice based on real experiences, making the session highly engaging and informative.

The event successfully boosted students' confidence by providing clarity on how to approach their second year effectively. Third-year mentors shared valuable resources, including websites, tools, and references to help with self-learning, time management, and securing internships. Beyond academic guidance, the session fostered a strong sense of community by creating a support network between SE and TE students, ensuring that juniors could seek help and mentorship even after the event. The open discussions encouraged students to explore extracurricular activities, take on meaningful projects, and start preparing early for placements. Pathfinders proved to be an impactful initiative, equipping second-year students with the strategies, motivation, and support needed for both academic and professional success.

Cultural Catalyst

Beyond Academics

The Culture Catalyst: Beyond Academics event, held on September 19, 2024, under the guidance of Mrs. Aarti Naik, aimed to encourage students to engage in extracurricular activities while effectively managing their academic responsibilities. With 42 second-year (SE) and 7 third-year (TE) students in attendance, the event featured insightful discussions led by guest speakers who shared their personal experiences on balancing studies with cultural and sports activities. They highlighted the importance of extracurricular involvement in developing teamwork, leadership, and personal growth. The session also provided students with practical strategies to manage their time efficiently, ensuring they could participate in diverse activities without compromising their academic performance.

The event successfully motivated students to explore new opportunities beyond the classroom, inspiring them to take an active role in cultural and sports events. By emphasizing the benefits of a well-rounded college experience, Culture Catalyst helped students understand how extracurricular engagement contributes to both personal and professional development. Participants left the session with a greater appreciation for time management and a renewed enthusiasm to explore their interests while excelling academically. The event fostered a sense of balance, encouraging students to make the most of their college journey by integrating learning with meaningful experiences outside the academic curriculum.

Engineer’s Insight
(Blog)

The Engineers' Insight blog-writing competition, held on September 17, 2024, as part of Engineers Week 2024, encouraged students to reflect critically on the role of engineers in shaping the future. Organized by the Electronics & Computer Science Students Association (ECSSA) and led by Mrs. Aarti Naik, the event was conducted online through Google Meet, where participants were tasked with writing blogs that explored various aspects of engineering, such as its impact on society, ethical responsibilities, and its potential for driving future innovations.

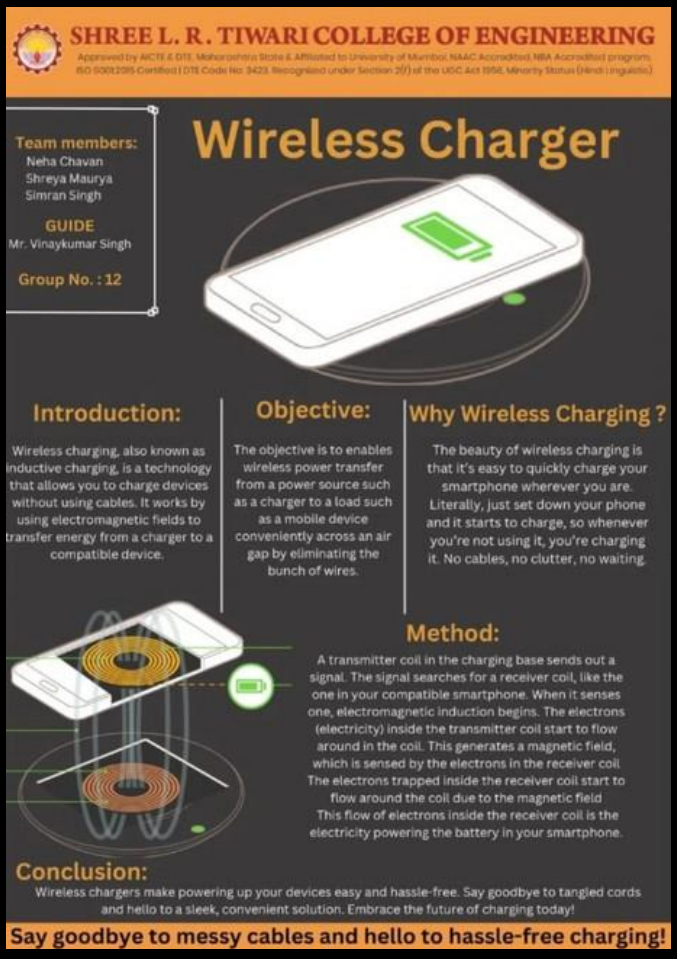
Engineers' Insight successfully fostered intellectual engagement, encouraging students to think beyond their technical expertise and consider the broader societal impact of engineering. The event helped participants gain a deeper understanding of the critical role engineers play in solving global challenges. Overall, the competition not only enhanced writing and communication skills but also inspired students to reflect on their future roles as engineers and their ability to influence positive change through innovation.

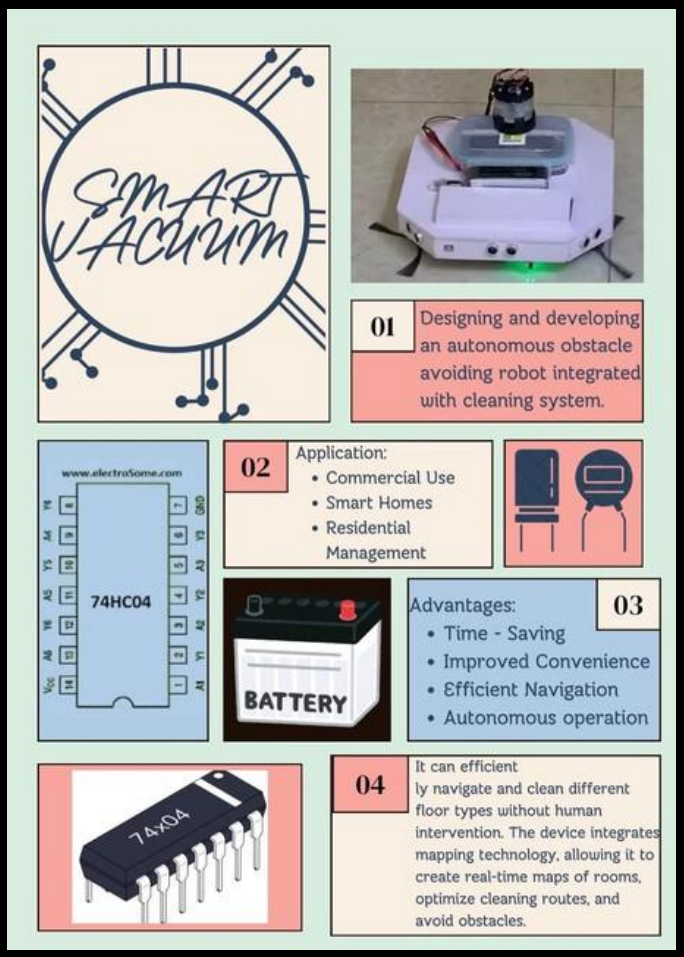
The event provided an excellent platform for students to enhance their writing and communication skills, allowing them to articulate complex engineering ideas clearly and effectively. Students produced insightful, well-researched blogs, covering topics such as sustainability and the role of technology in modern society. The live discussions that followed the submission of blogs offered participants the opportunity to exchange ideas, receive constructive feedback, and learn from each other’s perspectives.

Posterize

Art Meets Innovation

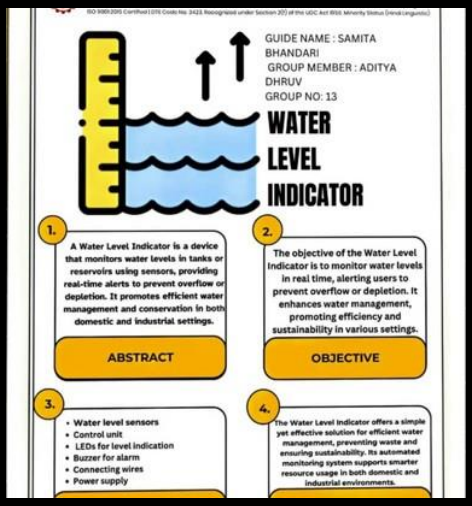
Posterize - Art Meets Innovation, held on September 16, 2024, was the inaugural event of Engineers Week 2024, organized by the Electronics & Computer Science Students Association (ECSSA). The event, conducted online through Google Meet, challenged second-year students to creatively blend their technical skills with artistic expression by designing posters that illustrated their ongoing mini-projects. Participants submitted their posters digitally, followed by a presentation where they explained their projects and shared their design process. The event provided a unique platform for students to showcase their work in a visually compelling format, emphasizing the importance of creativity in engineering.

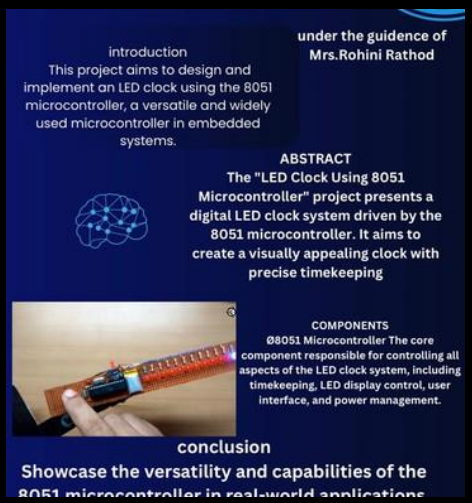


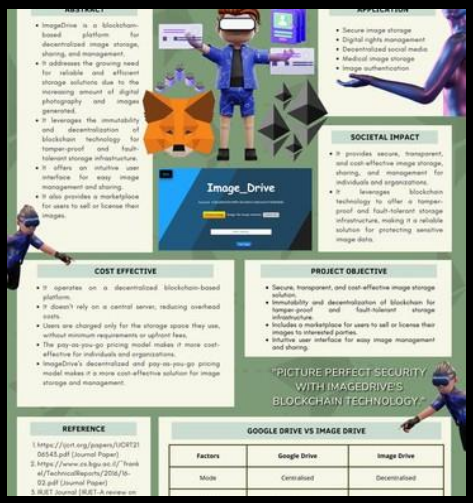


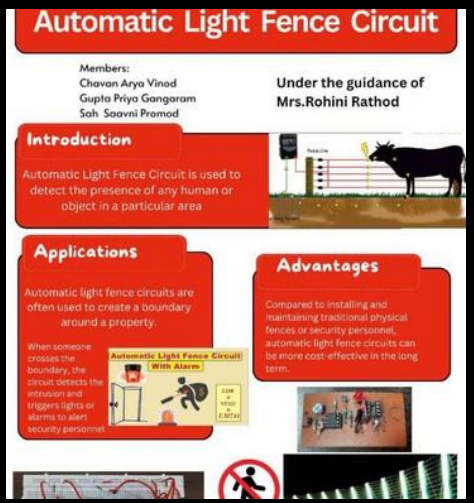
The peer feedback sessions were a key feature of the event, encouraging collaboration and constructive critique among participants. Students actively engaged in discussions, offering valuable insights to each other, which contributed to a collaborative learning environment. The event not only helped participants enhance their visual communication skills but also inspired them to refine their mini-projects and explore innovative ways to present technical information. Overall, Posterize successfully set a creative and engaging tone for Engineers Week, fostering skills in design, presentation, and collaboration, all of which contribute to the students' academic and professional growth.

The posters submitted by the participants were a creative blend of technical innovation and artistic expression. Each poster effectively captured the essence of the student's mini-project, using visual elements to simplify and communicate complex engineering concepts. The designs varied in style, with some incorporating diagrams, flowcharts, and graphical representations, while others utilized more abstract, artistic elements to convey the project's impact and relevance. Overall, the posters demonstrated the participants' ability to translate their technical ideas into clear, engaging visuals, showcasing not only their engineering skills but also their creativity and attention to detail.









DESIGNERS

GRAPHICS TEAM ECSSA

Mrs. Aarti Naik
ECSSA Faculty Coordinator

Vaibhav Vishwakarma
President ECSSA

Faheem Shaikh
Graphics Coordinator
ECSSA