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# FACULTY TEAM



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### From HoD desk

It gives me immense pleasure to present the latest edition of the Department of Electronics and Communication Engineering Newsletter, highlighting the remarkable achievements, innovative initiatives, and outstanding contributions of our students and faculty. Our continuous focus on experiential learning, cutting-edge research, and industry collaboration has empowered our students to develop real-world solutions, compete at national and international forums, and secure prestigious opportunities in leading organizations.

This issue covers diverse activities – from the successful 24-Hour Learnathon, industry visits, and Fab Lab advancements, to breakthrough research in 5G technologies and Quantum Communication. I am proud to see our students and faculty striving for excellence, demonstrating technical prowess, and making significant contributions to emerging technologies that shape the future of electronics and communication.

I congratulate all the achievers for their hard work, dedication, and innovative spirit. Let us continue to nurture creativity, foster scientific curiosity, and develop industry-ready professionals who will lead and transform the world.

**DR. I. GOVARDHANI**  
**HOD-ECE**

## ABOUT THE DEPARTMENT OF ELECTRONICS & COMMUNICATION



Engineering (ECE), established in 1983, boasts 120 distinguished faculty members, including 101 with PhD degrees, while others are pursuing PhDs. Faculty with rich industry experience cater to both academic and industry needs. State-of-the-art laboratories, Centers of Excellence, and Research Centers support UG, PG, and PhD students, emphasizing R&D activities and innovative exploration beyond the curriculum.

With Rs. 259 million in sponsored projects from DST, ISRO, and others, the department showcases a strong research culture, publishing over 3300 peer-reviewed articles. The vibrant academic calendar includes advanced certificate courses, seminars, visiting foreign faculty, and student paper contests. Student development programs, industry alliances, and active associations further enhance the department's offerings.

### VISION

To become a world-class department in the frontier regions of Electronics & Communication Engineering.

### MISSION

- To bring forth graduates possessing professional excellence.
- To conduct quality research with social & industrial application.
- To render technical assistance in converting the learners into entrepreneurs.

## ABOUT PULSE

PULSE, the official student body of the ECE Department, is more than a club – it's a catalyst for growth, leadership, and bringing out the best in every student. Rooted in collaboration, innovation, and empowerment, PULSE transforms classroom learning into real-world impact.

By bridging theory and practice, it helps students develop essential skills like teamwork, decision-making, and problem-solving. It's where engineers don't just build systems – they learn to lead them.

Through cultural, technical, and recreational events, PULSE becomes a space for self-discovery, inspiring confidence, creativity, and lifelong connections. It's a launchpad for both personal and professional excellence.

## Past Events by PULSE

- Idol of ECE – A circuit-based competition that tested students' technical skills and crowned top talent.
- Learnathons – 24-hour problem-solving marathons that promoted creativity and collaboration.
- Technical Sessions – Expert-led workshops that enhanced knowledge on electronics and emerging technologies.
- Circuit Crusade – A challenge focused on testing students' fundamentals in basic electronics and circuits.

## Upcoming Events by PULSE

- Tejomayam – Continuing the tradition of paying tribute to teachers.
- Treasure Hunt – A new edition with more engaging and challenging tasks.
- Project Expo – Another opportunity for students to showcase their innovative projects.
- Build-athon – A hands-on event encouraging students to design and build solutions.
- And many more – Exciting cultural, technical, and recreational events in the pipeline.

These events are not only milestones in the academic calendar but also serve as launchpads for innovative ideas, leadership opportunities, and a strong sense of community engagement.

PULSE continues to represent the spirit of ambition, collaboration, and excellence within the ECE Department. It provides every student with the platform to contribute meaningfully, grow confidently, and pursue their aspirations with purpose.



# ACADEMICS

## 24-HOUR LEARNATHON: ENGINEERING MINDS AT WORK



As part of the Skill Development Course on Robotics and Automation with Webots, Optical Sensors Design, and Embedded Design, a 24-hour Learnathon was held from 7:00 PM on 23rd to the afternoon of 24th August 2025. Third-year engineering students worked in teams to solve real-world challenges using microcontrollers, sensors, circuit design, and embedded systems. The programme, extensively covered in leading newspapers including The Hindu, Suryaa, Prajashakti, Sakshi, and Andhra Prabha.



ప్రాణి

ప్రాణికాల పుట్టును కూడా నీ ప్రేమ విషయం అనుభూతి. ఈట్లు తెలుగు వాచికాలకి

పొరికామిక రంగానికి అవసరమైన నెపుణ్ణాలు అందిస్తాం



ప్రశ్నాన్నలో పూర్విక, ఆదాయులు, పరిక్రమల నిప్పించుట

పుస్తకాలి

प्राचीन ग्रन्थ



Date: 2025-08-25, Edition:Guntur, Pg.No: 7  
Source: <https://epaper.prajasakti.com>

ECE ACHIEVERS SECURE PRESTIGIOUS PLACEMENT AT SCHNEIDER ELECTRIC

# Congratulations!



2200040238  
D. BHANU PRAKASH REDDY



2200049034  
C.HEMA YASWANTH KUMAR



2200040285  
BHAVANI PUJITHA MALLIPUDI

Placed in

**Schneider**  
 **Electric**

Post offer confirmation  
package

**12 LPA**

**Stipend-INR 35000 per month**

Three students of KL University D. Bhanu Prakash Reddy, Bhavani Pujitha Mallipudi, and C. Hema Yaswanth Kumar have been successfully placed in Schneider Electric with an impressive package of 12 LPA. They will also receive a monthly stipend of ₹35,000 during their internship period.

**24-HOUR LEARNATHON:  
ENGINEERING MINDS AT WORK**

As part of the Skill Development Course on Robotics and Automation with Webots, Optical Sensors Design, and Embedded Design, a 24-hour Learnathon was held from 7:00 PM on 23rd to the afternoon of 24th August 2025. Third-year engineering students worked in teams to solve real-world challenges using microcontrollers, sensors, circuit design, and embedded systems. The programme, extensively covered in leading newspapers including The Hindu, Suryaa, Prajashakti, Sakshi, and Andhra Prabha.

**INDUSTRY VISIT TO EFFTRONICS SYSTEMS PVT. LTD.**

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## FAB LAB DATA INSIDE NANO TECHNOLOGY



### Explore the Tools : Ultrasonic cell crusher

The Fab Lab at the Department of Electronics and Communication Engineering is more than just a workspace—it's a launchpad for innovation. One of its key instruments is the Ultrasonic Cell Crusher Noise Isolating Chamber, designed for safe, efficient cell disruption and sample preparation.

With a soundproof enclosure and transparent viewing window, it combines powerful ultrasonic processing with noise reduction, ensuring operator comfort and protecting delicate biomolecules through a non-thermal mechanism.

#### How it Works

High-frequency ultrasonic vibrations generate cavitation bubbles that collapse to release proteins, DNA, RNA, and other biomolecules. The soundproof chamber minimizes noise while enabling precise, high-throughput processing.

#### Applications

- Cell lysis for protein, DNA, and RNA extraction
- Preparation of bacterial, yeast, and mammalian cell samples
- Nanoparticle dispersion and size reduction
- Emulsification of immiscible liquids
- Homogenization of biological and chemical suspensions



## INSIDE FAB LAB

### ROOM NUMBER:R001



#### EXPLORE THE TOOLS: GLOVE BOX SYSTEM

The Fab Lab features the Glove Box System (Inert Atmosphere Glove Box) by MBRAUN, a sealed container designed for the safe manipulation of sensitive substances. It maintains a high-purity nitrogen or argon environment with integrated gas purification, vacuum pumps, and antechambers for secure sample transfer.

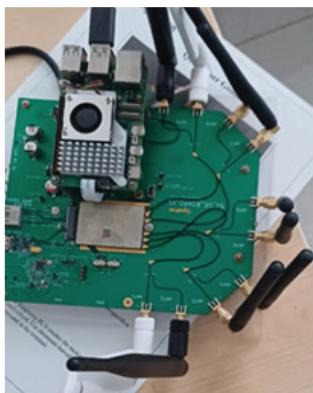
#### HOW IT WORKS

The system circulates and purifies inert gas to eliminate oxygen and moisture, creating a contamination-free environment. Samples are transferred through the antechamber without disturbing internal conditions, while built-in gloves allow precise handling of materials.

#### APPLICATIONS IN THE ECE FAB LAB INCLUDE:

- Safe handling of air- and moisture-sensitive materials
- Lithium-ion battery fabrication and electrode protection
- Processing of perovskite solar cells and OLED devices
- Contamination-free synthesis and assembly for consistent results

## INSIDE 5G TECHNOLOGIES



#### EXPLORE THE TOOLS : SDR CUBE BOARD V1

SDR Cube Board V1, a versatile platform for wireless communication experiments and prototyping. Equipped with multiple antenna ports (ANT1–ANT8), an RF transceiver, and host connectivity, it enables flexible testing with

#### PCs or Raspberry Pi systems.

Unlike fixed hardware radios, an SDR shifts modulation, demodulation, and signal processing into software, allowing rapid development and modification of communication protocols. Its multi-antenna design supports advanced techniques like MIMO, beamforming, and direction finding, while the onboard cooling system ensures stable, high-performance operation.

## APPLICATIONS

- Wireless protocol testing for 4G, 5G, and IoT
- MIMO and beamforming experiments
- Spectrum monitoring and cognitive radio research
- Antenna testing and optimization
- Secure communication system development
- Academic and industrial prototyping

## RESEARCH DATA



### ECE DEPARTMENT HOSTS 5G USE CASE LABS

#### – PHYSICAL TRAINING PROGRAM

The Vaddeswaram campus of KLEF successfully hosted the 5G Use Case Labs

– Physical Training Program from August 11th to 15th, 2025, in collaboration with the Department of Telecommunications (DoT) and Telecommunications Consultants India Ltd. (TCIL).

As part of this initiative, R205A has been equipped with advanced 5G sets and related equipment to facilitate the development of innovative 5G use cases. The 5G equipment units have been jointly sponsored by DoT and KLEF, thereby strengthening the institution's research and training infrastructure.

The training program brought together 34 participants and five expert speakers from Signaltron, along with an Assistant Director from the DoT, for an intensive five-day engagement at KLEF. The university was honoured to welcome delegates from several esteemed institutions, including IIT Tirupati, IIITDM Kurnool, Vignan University, GITAM University, Siksha 'O' Anusandhan University, and KLH.

The newly established 5G setup in the R205A lab closely resembles a real-world network, empowering students, researchers, and faculty to explore cutting-edge applications of 5G technology and contribute meaningfully to the national vision of digital innovation.

## THE GAME-CHANGER YOU NEVER NOTICED : SURFACE ACOUSTIC WAVE DEVICES



As an ECE student, our perception of electronic circuits should be geared towards commercial applications, like wireless sensors, mobile phones, Wi-Fi, Bluetooth, displays, televisions, ATMs, etc. When we talk about commercial electronics, most people think of processors, displays, or batteries as the core components. However, there is a Game-Changer You Never Noticed quietly enabling countless devices we use every day – Surface Acoustic Wave (SAW) devices.



Surface Acoustic Wave devices are electronic components that utilise acoustic waves travelling along the surface of a piezoelectric substrate to process signals. Interestingly, it converts an EM wave into an acoustic wave and vice versa, using comb-shaped metal electrodes and the converse piezoelectric effect.

Why are they here!!! What for!!!

They are employed in a wide range of commercial applications, as listed below,

Despite their critical role in modern wireless communication, SAW devices rarely get the spotlight compared to semiconductors or antennas. They are truly the dark horse of the consumer electronics industry.

Without the spotlight, we, the “SAW Devices,” are always in front of you, silently serving you...

GSK sir

## Quantum Communication and Security: Shaping the Future of Secure Networks

As the digital world continues to evolve, the need for ultra-secure communication systems becomes increasingly critical. Traditional encryption methods, though robust today, are vulnerable to future quantum computing attacks. Enter Quantum Communication — a breakthrough technology rooted in the laws of quantum mechanics, designed to offer theoretically unbreakable security.

### Why Quantum Communication?

Unlike classical cryptography, which relies on complex mathematical problems, quantum communication uses the behavior of subatomic particles (like photons) to transmit information securely. The most prominent application of this technology is Quantum Key Distribution (QKD), which enables two parties to share encryption keys with absolute security — any attempt at eavesdropping changes the state of the particles, thereby alerting the parties involved.

### Current Global Landscape and Statistics

**Market Growth:** The global QKD market, valued at \$2.1 billion in 2023, is projected to grow at a CAGR of 38.3% through 2030.

- ☒ China has implemented satellite-based quantum communication over distances of 1,200 km using its QUESS (Micius) satellite.
- ☒ The EU has committed over €1 billion through the Quantum Flagship program to develop secure pan-European quantum networks.
- ☒ United States has initiated the Quantum Internet Blueprint, aiming to connect federal labs and research institutions through quantum-secure links.
- ☒ Japan's NICT has conducted real-time QKD trials over existing telecom networks.
- ☒ Canada is pioneering QKD start-ups like ID Quantique and national research efforts through the University of Waterloo's IQC.

## PERFORMANCE METRICS & RESEARCH HIGHLIGHTS

Parameter	Typical Performance
Key Transmission Rate	Up to 10 kbps (depending on distance)
Distance (Fiber)	Max. ~600 km (Toshiba, 2022)
Distance (Satellite)	Up to 1,200 km (QUESS, China)
Security Guarantee	Unconditional (based on quantum laws)
Scalability Challenge	High — due to quantum repeater needs

## GLOBAL RESEARCH STATUS

Quantum repeaters, essential for long-distance QKD over fiber, are still in the developmental stages. Their success could push secure communication distances to thousands of kilometers.

Hybrid networks combining classical and quantum nodes are being tested in Germany, the Netherlands, and South Korea.

Standardization efforts are underway through ETSI, ITU-T, and ISO to create universal protocols for quantum-safe communication.

## WHY IT MATTERS

With increasing threats from nation-state actors, AI-powered cyberattacks, and the looming advent of quantum computers, quantum-secured communication is not a luxury – it's a necessity. Financial institutions, defense networks, and critical infrastructure are early adopters, setting the stage for widespread civilian and commercial deployment.

## CONCLUSION

Quantum communication isn't just a research concept anymore – it's a rapidly maturing field with global traction. Nations and tech giants are racing to deploy the first fully operational quantum-secure communication networks. With strategic investments and international collaboration, this technology is poised to become the backbone of secure communication for the next century.

**Dr. Syam Sundar Pillalamarri**  
Associate Professor  
Department of ECE

## FACULTY ACHIEVEMENTS

Dr. Shameem Syed participated in a five-day online Faculty Development Programme (FDP) on “Emerging Trends in Civil Engineering” from July 7th to 11th, 2025. Organized by the Department of Civil Engineering in association with the Academic Staff College at KL University, the program brought together faculty from across the country to discuss the latest advancements in the field.





Dr. S. Rooban has been actively engaged in professional development, recently completing two significant training programmes.

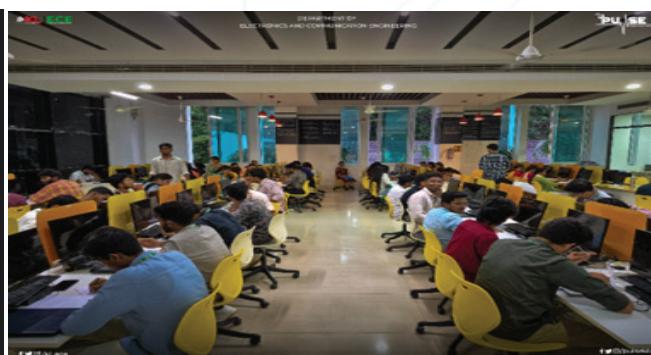
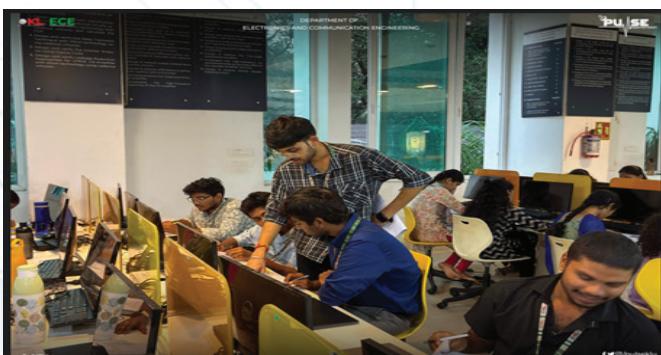
From May 26th to 30th, 2025, he participated in a five-day training on “Outcome-Based Education (OBE): Strategies for Effective Implementation,” organized by NITTTR, Bhopal. The workshop provided valuable insights into innovative teaching methodologies. Following this, he successfully completed a two-week Faculty Development Programme on the “Application of AI and ML for Engineers” from June 9th to 20th, 2025. The intensive course, conducted by NITTTR, Kolkata, focused on enhancing the understanding of Artificial Intelligence and Machine Learning applications in engineering.

## Circuit Crusade” Kicks Off a New Academic Year with a Bang

Team PULSE, supervised by Mr. P. Srikanth, successfully launched the new academic year's technical activities with “Circuit Crusade,” a major competition designed for second-year ECE (Y24) students.

Held in two challenging phases on July 31st and August 12th, the event tested the technical prowess and teamwork of participants. Students were tasked with navigating complex circuit-based rounds, identifying critical errors, and reviving faulty designs.

In collaboration with the AlwaysVLSI and Embedded & IoT clubs, the event added significant depth to the student experience. Drawing overwhelming participation, “Circuit Crusade” was the first major technical highlight of the academic year and has set a new standard for innovation and engagement within the ECE student community.



## AGRI EUREKA 2025 – NATIONAL AGRI INNOVATION AND BUSINESS MODEL CHALLENGE

Amirineni Harshith Sai (ID: 2300040277) participated in Agri Eureka 2025, organized by the National Institute of Agricultural Extension Management (MANAGE) from July 21–25, 2025. The team was selected as a finalist and promoted to the prestigious RKVY RAFTAAR program, recognizing their innovative contribution to agricultural entrepreneurship.



## THE BEAUTY OF BROKENNESS

I Even Loved the Pain You Gave

I even loved the pain you gave,  
It burned me slow but made me brave.  
From shattered dreams, I learned to  
crave  
The love that lingered past the grave.

I even loved the pain you gave,  
It played like waves in memory's cave.  
Your touch still haunts what I can't save  
Yet through it all, I still behave.

I even loved the pain you gave,  
It kept my nights from going cold.  
A scar that speaks of stories told,  
Of hands I'll never more to hold.

I even loved the pain you gave,  
Because it means you once were mine.  
Each ache repeats a sacred line  
Of kisses lost in threads of time.

I even loved the pain you gave,  
It blooms where joy and sorrow meet.

A thorn that made the rose complete,  
Still bleeding in a silent beat.

I even loved the pain you gave,  
It carved your name into my chest.  
It hurts, but that's when love feels best  
Alive inside what's laid to rest.

I even loved the pain you gave,  
For every tear recalls your smile.  
And holding grief is worth the while,  
To feel your soul within me a while.

I even loved the pain you gave,  
A song that echoes through the rain.  
No cure I seek, no end to chain  
For love is born inside the pain.

So let this sorrow fall like rain  
I even loved the deepest pain.  
So let this sorrow fall like rain  
I even loved the deepest pain.  
For even pain once felt like love again.

Credit: (Change suggested by  
my student **JYOTSNA 3<sup>RD</sup> year ECE,**  
KLU. It suits much better here for me.)

**DR. SYAM SUNDAR PILLALAMARRI**



## ਮੇਟੀ ਦਾਖਤਾਨ

ਪਹੇਲੀ ਸੀ ਹੈ ਦਾਖਤਾਨ, ਬੇ-ਟੰਗ ਹੈ ਮੇਟੀ ਜਿੰਦਗੀ...

ਪਦਤ ਪਡਾ ਹੈ ਛੌਸਲਾ, ਫ਼ਾਰੇਬੀ ਨਿਕਲੀ ਮੌਤ ਭੀ...

ਤਮਨਾਏਂ ਜੋ ਥੀਂ ਕਭੀ, ਵੋ ਅਥਕੋਂ ਮੌਜੂਦ ਸਿਮਟਕੇ ਬਹੁ ਗਈ...

ਖ਼ਵਾਬਾਂ ਕੀ ਕਬੀਂ ਪੇ ਅਕ, ਖਾਮੀਂ ਹੀ ਰੋ ਗਈ...

ਹੁਟ ਰਾਹ ਮੌਜੂਦ ਕਦਮ, ਹੁਟ ਸ਼ੋਡ ਪੇ ਕੀਗਾਨਿਆਂ...

ਸਾਧਾ ਭੀ ਸਾਥ ਛੋਡ ਦੇ, ਇਤਨੀ ਗਹਹੀ ਤਨਹਾਨਿਆਂ...

ਜ਼ਖ਼ਮਾਂ ਕੀ ਥਮੇ ਜਲ ਤਠੀਂ, ਖੂਨ-ਓ-ਆੱਸੂਆਂ ਦੇ ਯਹਾਂ...

ਕਿਸਕੋ ਪੁਕਾਈ, ਕੌਨ ਹੈ? ਮੇਰਾ ਨਹੀਂ ਕੋਈ ਜਹਾਂ...

ਦਿਲ ਕੀ ਕਿਤਾਬ ਬੰਦ ਹੈ, ਹੁਟ ਲਫੜ ਹੈ ਮਾਧੂਸ ਸਾ...

ਤਨਹਾ ਪਡੀ ਹੈ ਢਹ ਭੀ, ਬੇ-ਨਾਮ ਦੇ ਏਹਸਾਸ ਸਾ...

ਸੁਨ ਲੇ ਖੁਦਾ ਤੂ ਏਕ ਬਾਰ, ਅਰਮਾਨ ਸਥ ਮਿਟਾ ਚੁਕਾ...

ਅਕ ਮੌਤ ਹੀ ਹੈ ਆਖਿਰੀ, ਜਿਸਦੇ ਮੈਂ ਦਿਲ ਲਗ ਚੁਕਾ...

ਡਾਂ. ਇਯਾਮ ਸੁਂਦਰ. ਪਿ.

ਸਾਹ - ਪ੍ਰਾਧਿਕਾਰਕ

ਡਾਂ.ਸੀ.ਡਾਂ. ਵਿਭਾਗ

ਕੇ.ਏਲ.ਡਾਂ.ਏਫ



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2024



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EDUCATION FOUNDATION**

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Andhra Pradesh, India