

BI ANNUAL

DECEMBER 31, 2025

VOL 4, ISSUE 2

# TECH-TIDE

NEWSLETTER

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



**AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY**

ISO 9001: 2015 Certified Institution | Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University  
Ahalia Campus, Palakkad | Ph: 04923 226666



## **EDITORIAL BOARD MEMBERS**

### **EDITOR-IN-CHIEF**

Dr. P.R.Suresh, Principal

### **MANAGING EDITOR**

Dr. Krishna Kumar Kishor - Vice Principal

### **EDITOR:**

Dr. V. Balamurugan - Professor & HoD, ECE

### **COORDINATING EDITORS:**

Mr. Sanish V S

Mr. Sathyan P

## **EDITORIAL STUDENT MEMBERS**

Ms. Arya R	S1 ECE
Mr. Aadharsh M P	S1 ECE
Ms. Nanditha R	S4 ECE
Ms. Remya B	S4 ECE
Ms. Anu L	S6 ECE
Ms. Arya B	S6 ECE
Ms. Ashrin	S8 ECE
Mr. Abishek K V	S8 ECE

## MESSAGE FROM PRINCIPAL

**Dear Students, Faculty, and Esteemed Readers,**



It gives me immense pleasure to present the July–December 2025 issue of Tech-Tide, the bi-annual newsletter of the Department of Electronics and Communication Engineering. This magazine stands as a vibrant reflection of the department's academic rigor, innovative spirit, and collective commitment to excellence.

The field of Electronics and Communication Engineering continues to evolve at an unprecedented pace, shaping the backbone of modern technology—ranging from communication systems and embedded technologies to artificial intelligence and sustainable innovations. In this dynamic landscape, Tech-Tide serves as a valuable platform that captures the intellectual curiosity, creativity, and technical competence of our students and faculty.

I commend the ECE Department for fostering a culture that encourages research, innovation, and holistic development. The articles, technical insights, project highlights, and achievements showcased in this issue demonstrate not only academic strength but also the department's dedication to nurturing industry-ready engineers with strong ethical values and social responsibility.

I extend my heartfelt appreciation to the editorial team, faculty coordinators, and students whose tireless efforts have made this publication possible. Their enthusiasm and teamwork truly exemplify the spirit of collaborative learning.

I am confident that Tech-Tide will inspire its readers, ignite innovative thinking, and serve as a source of knowledge and motivation. I wish the Department of ECE continued success in its pursuit of academic excellence and technological advancement.

Warm regards,  
Dr. P R Suresh  
Principal  
Ahalia School of Engineering and Technology

## MESSAGE FROM VICE PRINCIPAL



**Dear Students, Faculty Members, and Readers,**

I am delighted to extend my greetings to the readers of Tech-Tide, the bi-annual newsletter of the Department of Electronics and Communication Engineering, for the period July–December 2025. This publication is a testament to the department's vibrant academic environment and its continuous efforts toward excellence in technical education.

In today's rapidly transforming technological era, the role of Electronics and Communication Engineering is pivotal in driving innovation, connectivity, and digital transformation. Tech-Tide effectively showcases the department's academic activities, technical accomplishments, research initiatives, and creative expressions, reflecting the enthusiasm and dedication of both students and faculty members.

I appreciate the department's commitment to fostering a culture of innovation, critical thinking, and lifelong learning. The contributions featured in this issue highlight not only technical competence but also teamwork, leadership, and a strong sense of responsibility—qualities essential for future engineers.

I congratulate the editorial team, faculty coordinators, and students for their sincere efforts in bringing out this edition of Tech-Tide. Such initiatives play a crucial role in strengthening communication, encouraging knowledge sharing, and inspiring young minds.

I wish the Department of ECE continued success in its academic pursuits and commendable contributions to the technological and societal development of our nation.

Best wishes for continued growth and excellence.

With best wishes,

Dr.Krishna Kumar Kishor

Vice-Principal-ASET.

## MESSAGE FROM HOD

**Dear Students, Faculty, Alumni, and Well-Wishers,**



Tech-Tide is not just a newsletter—it is a mirror of the continuous learning, experimentation, and growth that define the Department of Electronics and Communication Engineering. I am pleased to present this July–December 2025 bi-annual issue, which captures the academic journey and technical spirit of our students and faculty during this period.

This semester has been marked by active learning through laboratories, mini-projects, technical workshops, industry interactions, paper presentations, and student-driven initiatives. The articles and reports featured in this issue highlight how our students are translating classroom concepts into practical solutions while developing problem-solving skills and professional confidence.

As a department, we emphasize strong fundamentals, hands-on exposure, teamwork, and adaptability to emerging technologies. Tech-Tide provides a platform for students to express ideas beyond examinations—encouraging technical writing, innovation, and creative thinking, which are essential traits of a competent engineer.

I sincerely appreciate the efforts of the student editorial team and faculty mentors whose commitment and coordination have brought this edition to life. Their initiative reflects the leadership and collaborative culture we strive to nurture within the department.

I hope this issue of Tech-Tide motivates our students to explore, innovate, and take pride in their learning journey. Let us continue to work together to strengthen our department and shape engineers who contribute meaningfully to society and the profession.

Wishing all readers an engaging and insightful experience.

Warm regards,

Dr.V.Balamurugan

Head of the Department

Electronics and Communication Engineering

## INSTITUTION VISION & MISSION

### VISION

Grow as a center of learning and research, transforming students to professionals with knowledge, skill, competence, commitment, confidence through decisive learning and contribute to the sustainable development of the society.

### MISSION

#### ★ MISSION 1

To instill technical expertise in order to address current and emerging challenges in the quest for creating sustainable and high-quality livelihoods.

#### ★ MISSION 2

To foster a culture of research, innovation, and entrepreneurship through determined learning.

#### ★ MISSION 3

To promote an environment that supports the welfare of society through ethical and professional conduct

## ABOUT ECE DEPARTMENT

The Department of Electronics and Communication Engineering (ECE) is a dynamic and innovative hub committed to excellence in teaching, research, and industry collaboration. Established with the vision to produce competent professionals, the department focuses on developing strong foundational knowledge and advanced technical skills in electronics, communication systems, embedded systems, VLSI design, IoT, and signal processing.

Our faculty comprises highly qualified educators and researchers who bring a wealth of academic and industry experience. The department offers undergraduate programs that blend rigorous theoretical instruction with hands-on practical training. State-of-the-art laboratories, modern research facilities, and industry-standard software tools support experiential learning and innovation.

We actively promote research, internships, and student participation in technical events and competitions. With regular guest lectures, industrial visits, and collaboration with leading companies, the department ensures students are industry-ready and equipped to face emerging global challenges in technology. Graduates from the ECE department are well-placed in top-tier companies, pursue higher studies at renowned institutions, and contribute significantly in areas such as telecommunications, robotics, AI, space technology, and consumer electronics.

## DEPARTMENT VISION & MISSION

### VISION

To provide quality education in Electronics and Communication Engineering through determined learning, promoting innovation and research, upholding professional ethics and contribute to sustainable societal progress

### MISSION

#### ★ MISSION 1

To provide a holistic technical education that empowers students with a robust foundation of theoretical expertise and practical skills in Electronics and Communication Engineering

#### ★ MISSION 2

To foster lifelong learning, research and inspire entrepreneurship, empowering students to excel in their field of expertise.

#### ★ MISSION 3

To nurture professional ethics, team work and leadership skills in students for their overall development and contribution to the society.

## **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

- ★ Apply the concepts of Electronics and Communication Engineering to provide solutions to the emerging problems in the society.
- ★ To solve problems of social relevance applying the knowledge of ECE and pursue higher education.
- ★ Work effectively as individuals and as team members in multidisciplinary projects
- ★ Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.

## **PROGRAM SPECIFIC OUTCOMES (PSO)**

- ★ PSO 1: Develop electronics-based solutions for real-life challenges integrating entrepreneurship and sustainability
- ★ PSO2: Uphold ethics and values in designing sustainable technologies while embracing lifelong learning for professional growth

## **LATEST TRENDS AND DEVELOPMENTS IN ROBOTICS**

**Technical Talk**

**July 11, 2025**

The Department of Electronics and Communication Engineering organized the inauguration of its departmental association “ERFINDERS” on 11th July 2025 at visvesvaraya hall , followed by a highly engaging technical talk titled “Latest Trends and Developments in Robotics”. The event was conducted to mark the beginning of the new academic year with a strong emphasis on innovation, learning, and collaboration among students and faculty.

The program commenced with a prayer song by Anisree, a student of S3 ECE, setting a graceful tone for the event. This was followed by a warm welcome address delivered by Pooja P Menon of S7 ECE.

The inauguration was formally carried out by the Chief Guest, Prof. Santhakumar Mohan, from the Department of Mechanical Engineering, IIT Palakkad, who officially declared the association open. His presence and insights brought immense value to the occasion.

During the ceremony, the association office bearers for the academic year 2025–26 were introduced, highlighting the student leadership for the upcoming year.

Following the inauguration, a technical session was conducted by Prof. Santhakumar Mohan, an expert in the field of Robotics and Automation. His talk shed light on several emerging areas in robotics and its multidisciplinary applications.

### **HIGHLIGHTS OF THE TECHNICAL TALK:**

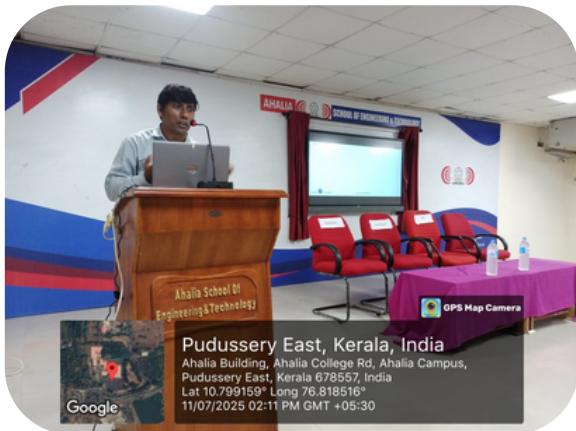
- ◆ Evolution of robotics from traditional automation to intelligent and autonomous systems
- ◆ Integration of Artificial Intelligence and Machine Learning in robotic platforms
- ◆ Applications of robotics in sectors such as healthcare, manufacturing, space exploration, and service industries

## LATEST TRENDS AND DEVELOPMENTS IN ROBOTICS

The session was not only informative but also highly interactive, sparking curiosity and enthusiasm among the students.

Dr. V Balamurugan, Head of the Department, addressed the gathering and felicitated the guest speaker, appreciating his valuable contribution and the enriching session.

The event concluded with a vote of thanks delivered by Namitha S Kumar of S5 ECE, who acknowledged the collective efforts of the organizing team, the guest speaker, faculty members, and student volunteers for ensuring the event's success. The inauguration of ERFINDERS and the technical talk marked a vibrant beginning for the academic year 2025–26. It set a strong foundation for future activities aimed at fostering technical excellence, innovation, and active participation among students of the Department of Electronics and Communication Engineering.



## **CAREER BLUEPRINT : ENGINEER EXPERIENCE UNVEILED**

**Talk**

**August 7, 2025**

On 7th August 2025, from 3:20 PM to 4:20 PM, the Design and Analysis Lab hosted a highly insightful career-oriented event, titled “Blueprint of a Career: Engineer Experience Unveiled.” This event was designed to provide students and aspiring engineers a glimpse into the world of engineering and the real-life experiences of professionals from leading tech companies.

The session began with a warm welcome speech by Dr. V. Balamurugan, the Head of Department (HOD), who greeted the gathering of students and professionals. Dr. V Balamurugan highlighted the importance of such events in shaping students' understanding of career opportunities and the different paths within the engineering field.

Dr. Balamurugan introduced the distinguished resource persons for the session:

**Ms. Maria Xavy – IP Logic Designer Engineer at Intel**

**Ms. Showfeena Shajahan – Test Engineer at Renaissance Electronics**

Both professionals were invited to share their experiences, challenges, and insights into their specific engineering roles, offering valuable knowledge to the attendees.

### **PRESENTATION BY RESOURCE PERSONS**

#### **Ms. Maria Xavy – IP Logic Designer Engineer at Intel**

**Introduction to Role:** Maria began by explaining the role of an IP (Intellectual Property) Logic Designer, a specialized engineer responsible for designing, developing, and optimizing digital logic used in semiconductor devices. She elaborated on how her work at Intel involves the development of next-generation technologies that power everything from smartphones to computers and servers.

**Challenges & Skills Required:** Maria emphasized the critical importance of a strong foundation in Digital Logic Design, Computer Architecture, and Programming Languages such as Verilog and VHDL. She also mentioned the constant innovation and team collaboration required in the industry, which makes the field both challenging and rewarding.

**Career Path Insights:** Maria shared the importance of internships, the value of constant upskilling, and how networking and mentorship can accelerate career growth. She encouraged students to be proactive in learning and exploring new technologies to remain competitive in the ever-evolving tech industry.

### **Ms. Showfeena Shajahan – Test Engineer at Renaissance Electronics**

**Introduction to Role:** Showfeena gave an insightful overview of her role as a Test Engineer at Renaissance Electronics, explaining that test engineers are responsible for ensuring the quality and reliability of electronic products through rigorous testing protocols.

**Key Skills and Tools:** She described the technical skills required, such as proficiency in automation tools, test frameworks, and scripting languages. She also highlighted the importance of attention to detail and problem-solving skills to identify issues in hardware and software integration.

**Job Prospects & Advice:** Showfeena encouraged students to explore cross-disciplinary knowledge—understanding both hardware and software aspects of electronics is crucial in today's testing world. She also spoke about the importance of hands-on experience, either through internships or personal projects, to gain practical exposure to real-world problems.



## **USAGE OF OPEN-SOURCE TOOLS IN CLINICAL IMAGE PROCESSING**

**Expert Talk**

**August 19, 2025**

The expert talk on “Open Source Tools in Clinical Image Processing” was organized by the Department of Electronics and Communication Engineering on 19th August 2025. The session began with a welcome address by Ms. Nandana, student of S5 EC-E, who warmly welcomed the dignitaries, faculty members, and participants. Dr. V Bala murugan HoD ECE, then addressed the gathering, highlighting the importance of clinical image processing in modern healthcare and the role of open-source tools in promoting cost-effective research and innovation. The expert talk was delivered by Dr. K S Tamil selvan HoD BME, KPR Institute of engineering and technology, Coimbatore. an eminent resource person with expertise in medical image analysis and open-source software.

### **SESSION HIGHLIGHTS**

Introduction to popular open-source platform ITK-SNAP.

- Demonstrations of medical image visualization, segmentation, and registration.
- Applications of open-source tools in tumor detection, surgical planning, and clinical research.
- Discussion on the importance of open tools for collaborative, reproducible research.

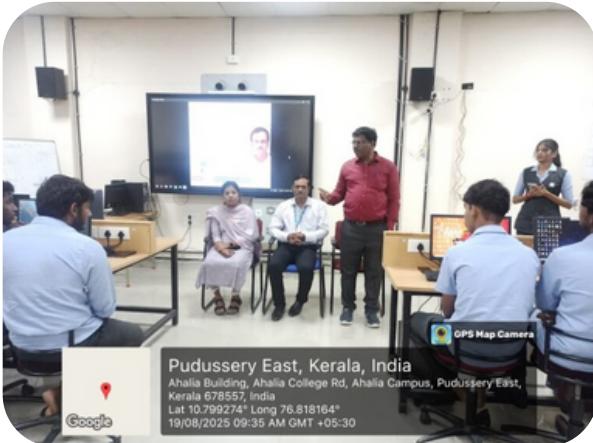
### **OUTCOMES**

Students and faculty gained practical knowledge about tools widely used in clinical imaging.

- The session bridged the gap between engineering techniques and medical applications.
- The talk motivated participants to undertake research projects using open-source platforms.

## USAGE OF OPEN-SOURCE TOOLS IN CLINICAL IMAGE PROCESSING

The session concluded with a vote of thanks proposed by Ms. Athulya Shivadasan student of S5 ECE, who expressed gratitude to the resource person, organizers, and participants for making the event successful. The program was attended by 50 (S5 ECE) students from the department. The expert talk was highly informative and beneficial to all participants, enhancing their knowledge in the field of clinical image processing and motivating them to further explore open-source research tools.



## 3D MODELLING USING FUSION 360

**Workshop**

**August 25, 2025**

The hands-on workshop on “3D Modelling Using Fusion 360” was successfully conducted on Monday, 25th August 2025, at the CAD Lab, ASET. The program was organized by the IEEE Student Branch of ASET, adding great value to the learning experience.

The session was led by Mr. Abhinav Rajeev, CEO & Director of Bumblebee Instruments Pvt. Ltd., who guided the participants through the exciting journey of turning creative ideas into innovative 3D designs.

The workshop provided participants with:

- Practical exposure to Fusion 360 and its applications in modern design.
- Industry-level insights to improve design speed, efficiency, and innovation.
- Skills to strengthen their portfolios and build a strong foundation in CAD-based product design.





Students, beginners, and makers enthusiastically engaged in interactive learning, gaining the confidence to design without limits. The session not only expanded technical knowledge but also inspired participants to imagine, innovate, and shape the future through 3D modelling.

## **INDUSTRIAL VISIT TO BSNL PALAKKAD**

**Industrial Visit**

**September 19, 2025**

The Department of Electronics and Communication Engineering organized an industrial visit for the S3 ECE students to BSNL Palakkad on 18th September 2025. A total of 54 students participated in this visit, accompanied by Mr. Vinod Kumar P (Assistant Professor, ECE) and Mr. Sathyan P (Senior Instructor, ECE Department).

The visit aimed to bridge the gap between academic learning and industrial practices, offering students valuable exposure to real-world applications in the field of telecommunications and networking. The objective of the visit are to understand the practical aspects of telecommunication systems and networks, to gain insights into the functioning of switching systems, optical fiber communication, and broadband technologies to familiarize students with the latest advancements in telecom infrastructure, to enhance industry-institute interaction and broaden the students' practical knowledge. The session began with an introductory briefing by BSNL officials about the organization's role in India's telecom sector. Students were given a guided tour of various divisions such as:

Switching and Transmission Unit, Optical Fiber Communication Systems, Broadband and Mobile Communication Wing, Network Operations Centre (NOC). The officials explained concepts like call routing, signal processing, IP-based telephony, and 4G/5G readiness. An interactive session was held where students clarified their doubts on modern telecom challenges and career opportunities in the sector.

Students acquired practical exposure to telecommunication technologies complementing their academic curriculum. The visit enhanced their understanding of switching, transmission, and broadband systems.

## INDUSTRIAL VISIT TO BSNL PALAKKAD

It motivated students to explore future career opportunities in the telecom and networking domain.

The industrial visit to BSNL on 18th September 2025 was highly beneficial for the S3 ECE students. It provided them with valuable industrial insights and strengthened their theoretical knowledge with hands-on exposure to telecom infrastructure.



# ARDUINO WORKSHOP

Workshop

September 24, 2025

From coding basics to real-time projects, the Arduino workshop empowered students to experiment, create, and innovate. A session full of curiosity, learning, and endless possibilities! An Arduino training program was conducted at LM HSS Mangalam Dam

The program conducted by Department of ECE for the students of LM HSS Mangalam Dam. The session were handled by Ms.Gayathri P S and Mr.Sathyan P from Department of ECE,Ahlia School of Engineering and Technology.

The Arduino Workshop was a highly engaging and hands-on learning experience aimed at bridging the gap between theoretical knowledge and real-time hardware implementation. The workshop introduced participants to the fundamentals of Arduino hardware, programming concepts, and interfacing techniques using sensors, actuators, and communication modules. Through step-by-step demonstrations and practical sessions, students gained confidence in writing, modifying, and debugging Arduino programs while understanding real-world applications of microcontrollers. One of the major advantages of the workshop was its emphasis on experiential learning, which enhanced students' problem-solving ability, logical thinking, and design skills. The open-source nature of Arduino, its ease of programming, and vast community support were highlighted, motivating students to explore innovation beyond the syllabus. Key highlights of the workshop included hands-on mini projects, live circuit debugging, sensor interfacing experiments, PWM-based control applications, and interactive discussions on project development and industry relevance. Overall, the workshop empowered students with practical skills, boosted their interest in embedded systems and IoT, and laid a strong foundation for academic projects, internships, and future technological innovation.

## ARDUINO WORKSHOP



## **STATISTICAL QUALITY CONTROL & RELIABILITY ENGINEERING**

**Expert Talk**

**October 14, 2025**

An expert talk on “Statistical Quality Control & Reliability Engineering” was organized on 14th October 2025 at Visvesvaraya Hall, Ahlia School of Engineering & Technology (ASET), Palakkad. The event was conducted as part of the International Day of Standards celebration.

The session was jointly organized by the Institution’s Innovation Council (IIC), ISTE, IETE Student Chapters, and the NSS Unit, in association with the Departments of Electronics and Communication Engineering (ECE), Mechanical Engineering (ME), and Civil Engineering (CE).

The resource person for the session was Dr. Rajeev N, Dean Academics, ASET. Dr. Rajeev delivered an insightful lecture on the concepts of Statistical Quality Control (SQC) and Reliability Engineering, highlighting their importance in maintaining product quality and process efficiency in modern engineering industries. He also discussed various statistical tools, control charts, and reliability analysis methods used in quality improvement and system performance evaluation.





The talk helped students gain a deeper understanding of how SQC and reliability concepts can be applied in real-world engineering scenarios. It also emphasized the role of standardization in ensuring product consistency and dependability.

## ARDUINO TRAINING

**Workshop**

**October 14, 2025**

With the aim of creating awareness among school students about the emerging fields of electronics and manufacturing, an Arduino training workshop was successfully conducted at M.N.K.M. Higher Secondary School, Chittilamchery. The programme was jointly organized by Ahlia Engineering College, Ezhuthachan I.T.I., and Gift College, reflecting a strong spirit of academic collaboration and community outreach. The workshop was formally inaugurated by the School Headmistress, Ms. Bindu, who emphasized the importance of early exposure to technology and practical learning for students. The training sessions were handled by Prof. P. S. Gayathri along with Senior Lab Instructors Mr. P. Sathyan and Ms. V. R. Sindhu, who introduced the students to the basics of Arduino, microcontroller concepts, and simple electronic circuits in an engaging and student-friendly manner. Through interactive demonstrations and hands-on activities, the participants were encouraged to explore electronics beyond textbooks and gain a foundational understanding of how technology works in real-life applications.

The workshop highlighted the advantages and applications of Arduino in a way that was easily understandable for school-level learners. Students learned that Arduino is an open-source, low-cost, and beginner-friendly platform that enables them to design and control electronic projects with minimal complexity. The training demonstrated how Arduino can be used in practical applications such as automatic street lights, smart irrigation systems, temperature monitoring, obstacle-detection systems, LED control, and basic robotics. These examples helped students visualize how electronics can solve everyday problems and contribute to smart and sustainable solutions. By engaging in simple programming and hardware interfacing, students developed logical thinking, creativity, and problem-solving skills.

## ARDUINO TRAINING

The workshop also motivated them to pursue future studies and careers in engineering, electronics, and manufacturing technologies, thereby laying a strong foundation for innovation, skill development, and technological curiosity at an early stage.



എ.ഒ.എ.എ.കെ.എ.ഒ.എ.എ.എ.എ.എ.സി.എ.സി.ചിറ്റില്ലേവേരിയിൽ  
സംഘടിപ്പിച്ച ആദ്യിന്നോ പരിശീലനം.

## ആർഡിനോ പരിശീലനം നടത്തി

ଭେଦ୍ୟା ଏହି କ୍ଷତି ଖୁବି ଦେଖିଲିବା  
ଶ୍ରୀକୃତୀରୁଷ୍ମା ଏବଂ ପାରି  
ଶିଳ୍ପାଳ୍ପାଦା ପାରିଲାମ୍ବିତ  
ଶିଳ୍ପିରୁଷ୍ମା ଶିଳ୍ପି ଉତ୍ସବ  
କଣା କାହିଁମହିମାରୁ ଉପରାମ  
ପାରିଲାମ୍ବିତ ଶିଳ୍ପି ଉତ୍ସବ  
ଏହି ଶାସ୍ତ୍ରୀୟ ସିନିମାରେ ଲାଗ  
ବେଳୁଣ୍ଣିରୁଷ୍ମା ଏବଂ ପାରିଲା  
ଆର୍ଦ୍ର ସିନିମା ଏବଂ ପାରିଲା  
ଲାଗନ୍ତିକି ଅନ୍ତରୁକୁ ନାହିଁକି

# INTRODUCTION TO ARDUINO & EMBEDDED SYSTEMS

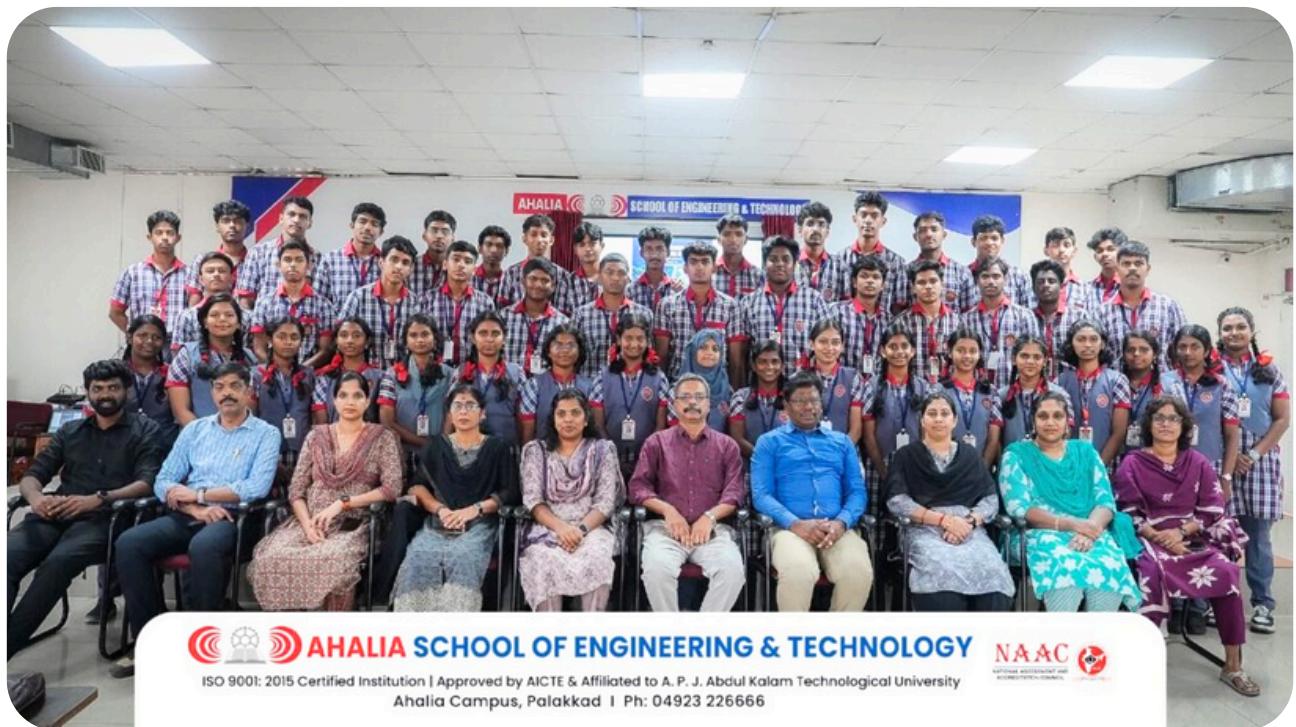
Workshop

November 28, 2025

Ahelia School of Engineering & Technology proudly hosted the students of Kendriya Vidyalaya, Olavakkode for an engaging and insightful Arduino Workshop aimed at introducing young minds to the fundamentals of electronics and embedded systems. The workshop was designed to spark curiosity and creativity by providing students with hands-on exposure to Arduino hardware and basic programming concepts. Through interactive sessions, live demonstrations, and simple circuit-building activities, the participants gained a clear understanding of how software and hardware work together to create intelligent electronic systems. The learning environment encouraged questioning, experimentation, and teamwork, making the session both educational and enjoyable for the students.

The workshop also highlighted the wide-ranging applications and advantages of Arduino, helping students relate technology to real-world problem-solving. Practical examples such as LED control, sensor-based automation, and basic robotic concepts were demonstrated to showcase how Arduino is used in smart devices, automation, and IoT applications. Being an open-source and beginner-friendly platform, Arduino enabled students to quickly grasp concepts and experience the satisfaction of building working models on their own. The programme played a vital role in nurturing analytical thinking, creativity, and confidence among the participants, motivating them to explore future careers in engineering and technology. Overall, the workshop served as an inspiring platform that laid a strong foundation for innovation and empowered students to become the next generation of tech creators.

## INTRODUCTION TO ARDUINO AND EMBEDDED SYSTEMS



## **DIGITAL SYSTEM DESIGN USING VERILOG AND FPGA**

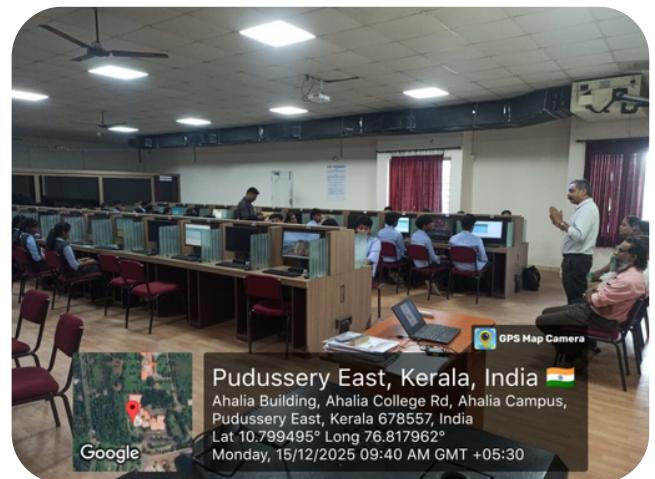
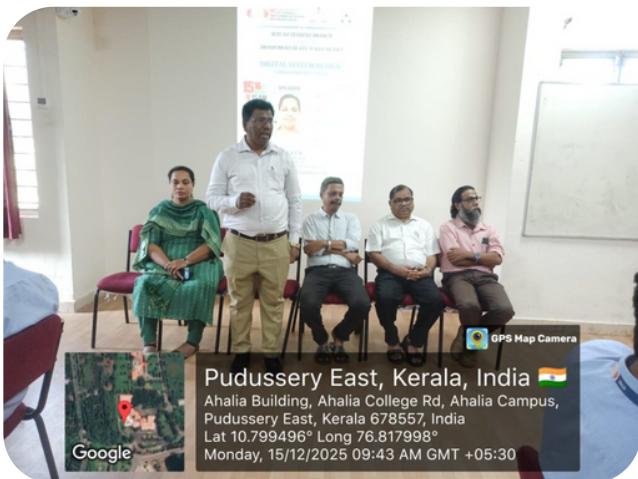
**Workshop**

**December 16, 2025**

The Two-Day Hands-on Workshop on Digital System Design using Verilog and FPGA, conducted on 15th and 16th December 2025 at Programming Lab 3, was a focused technical programme aimed at strengthening the practical competencies of Electronics and Communication Engineering students. The workshop was organized by the IETE-ISF Student Chapter, in association with the Department of Electronics and Communication Engineering and IEEE Student Branch, Ahalia, and was coordinated by Dr. Aneesh K, Department of ECE. The sessions were expertly handled by Ms. Shaila C K, Assistant Professor, Department of ECE, SCMS School of Engineering and Technology, Cochin, who served as the resource person. Designed specifically for 4th Semester ECE students, the programme catered to 53 participants and provided a structured introduction to HDL-based digital system design. The workshop covered the complete design flow, including Verilog HDL fundamentals, RTL coding, combinational and sequential circuit design, FPGA architecture, synthesis, implementation, bitstream generation, clocking, timing constraints, and real-time debugging on FPGA platforms.

The workshop offered significant advantages by bridging the gap between theoretical digital electronics concepts and real-world hardware implementation. Through extensive hands-on sessions using Verilog HDL and FPGA design tools, students gained the ability to design, synthesize, implement, and debug digital systems efficiently. The practical exposure enhanced their understanding of timing analysis, architectural constraints, and hardware-level problem-solving—skills that are critical for industry-ready engineers. From a future perspective, the knowledge gained through this workshop opens pathways in VLSI design, embedded systems, hardware acceleration, signal processing, and semiconductor industries, as well as advanced academic and research pursuits. Overall, the programme had a strong academic and professional impact, equipping students with industry-relevant skills and preparing them for complex design challenges and technology-driven careers in the evolving electronics domain.

The feedback received for the two-day workshop on Digital System Design Using Verilog and FPGA was highly positive. Most participants rated the workshop as very good to excellent, appreciating the clear explanation of objectives, relevance of the topics, and the strong subject knowledge of the resource person. Students reported noticeable improvement in their understanding of Verilog HDL and FPGA-based digital system design. The workshop was well organized and highly recommended by the participants, with a few suggestions for incorporating more hands-on practice and problem-solving sessions in future programs.



# ACHIEVEMENTS

## ACADEMIC TOPPERS



## JOURNAL PUBLICATION

Aditya Kiran SR, Anirudh Sreejithesh, Ashik M, Jishnu R, Ms. Gayathri PS, Dr. V Balamurugan: 'A STUDY ON HIGH-PERFORMANCE VLSI ARCHITECTURE FOR REAL-TIME VIDEO EDGE DETECTION', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83693>

Dr. V. Balamurugan, Akshaya Sri PS, Anamika S, Manu S Vignesh, Mehrin Ayisha S: 'INTELLIGENT FRONT-DESK FRAMEWORK FOR ENHANCING PATIENT FLOW IN HOSPITALS', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83447>.

Arya PR, Ashrin A, Athish R, Chaithra KC, Dr. Aneesh K, Dr. V. Balamurugan: 'DESIGN AND FPGA IMPLEMENTATION OF A SIMPLIFIED MIPS-LIKE 8-BIT RISC PROCESSOR BASED ON HARVARD ARCHITECTURE USING VERILOG HDL', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83001>

Arya Sasikumar, Dhanush P, Gowthami S, Mahitha M, Ms. Swetha C, Dr. V Balamurugan: 'CATRON: A CABLE TUNNEL INSPECTION ROBOT', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83625>

Nandana N, Rijul R Das, Shakira U, Sivani PS, Mr. Sanish VS, Dr. V. Balamurugan: 'MICROSTRIP PATCH ANTENNA FOR SUB 6G APPLICATIONS', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83455>

## JOURNAL PUBLICATION

1. Sooraj S, Sidharth K, Vineeth M, Muhammed Aslam KM, Dr. V Balamurugan: 'AN AI-POWERED LASER-BASED AUTONOMOUS ROVER FOR WEED DETECTION AND REMOVAL', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83768>

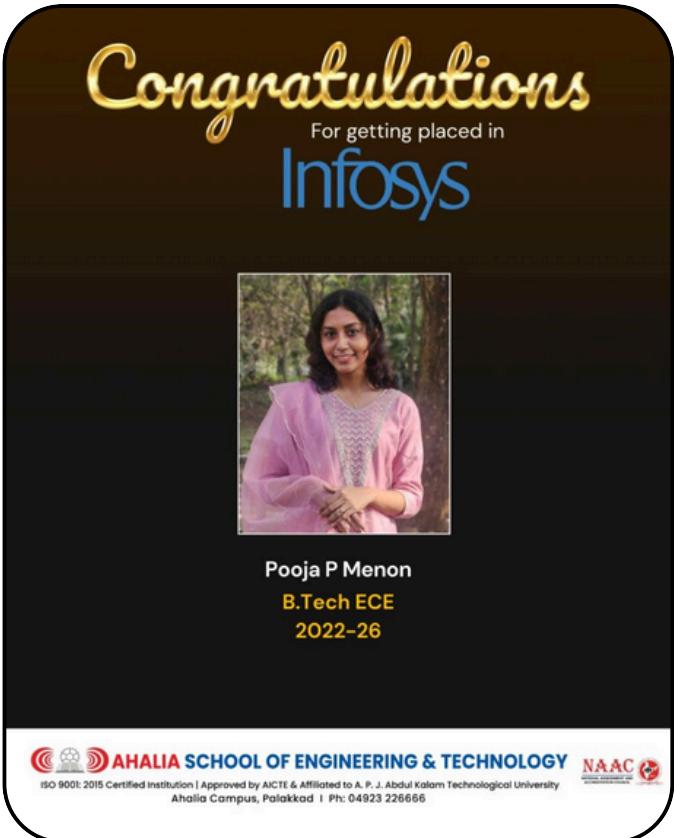
M Padmaja, Rayan Gaffor, S Chandru, Sreelakshmi V, Dr. Divya Mohan, Dr. V. Balamurugan: 'TOMATO QUALITY CLASSIFICATION', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS82772>

Sanu CS, Sreerag P, Swetha R, Thriphthi M, Ms Vijitha Khan, Dr. V. Balamurugan: 'HYDRO TECH', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83493>

Pooja P Menon, Subiksha S, Haadiq, Nikhil, Dr. Leesha Paul, Dr. V. Balamurugan: 'STUDY OF BRAIN TUMOR DETECTION USING MULTIMODAL MRI SCANS WITH DEEP LEARNING ALGORITHM AND EDGE AI', International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208, <https://www.doi.org/10.56726/IRJMETS83399>

Abhishek KV, Ajil J, Ajmal TA3, Athul G, Vinod Kumar P, Dr. V. Balamurugan "SOLAR POWERED DC OXYGEN CONCENTRATOR WITH BATTERY BACKUP AND REAL TIME MONITORING" International Research Journal of Modernization in Engineering Technology and Science, Volume:07/Issue:10/October-2025, e-ISSN: 2582-5208

# PLACEMENTS



# NPTEL CERTIFICATION



 AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY

ISO 9001:2015 Certified Institution | Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University  
Ahalia Campus, Palakkad | Ph: 04923 226666



*Congratulations to students for securing Certification*

*Department of Electronics & Communication*

								
Ashrin A 2022-26 ECE	Nandana 2022-26 ECE	Subiksha.S 2022-26 ECE	Aditya Kiran S R 2022-26 ECE	Arya Sasikumar 2022-26 ECE	Akshaya Sri P.S 2022-26 ECE	Anamika S 2022-26 ECE	Gowthami S 2022-26 ECE	Dhanush P 2022-26 ECE
								
AJU FATHIMA T 2023-27 ECE	Amritha U 2023-27 ECE	Krishnaja M 2023-27 ECE	M AKBAR BASHA 2023-27 ECE	Namitha S Kumar 2023-27 ECE	Neha j 2023-27 ECE	Rifa Thahsin I 2023-27 ECE	Sreya R 2023-27 ECE	Shakira U 2022-26 ECE
								
LAKSHMI SUBRAMANIAM.R 2023-27 ECE	Nethra S 2024-28 ECE	Zoya Prakasan 2024-28 ECE	AJIL MADHAV C K 2023-27 ECE	Akshaya A 2023-27 ECE	Nandhana R 2023-27 ECE	Arya R 2023-27 ECE	Arya B 2023-27 ECE	Namitha.C.P 2023-27 ECE
								
M Mohammed Niyan 2023-27 ECE	Athulya Sivadasan 2023-27 ECE	Sreejith Balaji 2023-27 ECE	AJIL J 2022-26 ECE	Athish R 2022-26 ECE	Mahitha M 2023-27 ECE	Sooraj S 2022-26 ECE		



# ACHIEVEMENTS OF FACULTY

*Congratulations*  
For successfully completing PhD from  
Amrita Vishwa Vidyapeetham



**Dr. Divya Mohan**  
Assistant Professor  
ECE

Your dedication, perseverance, and commitment  
are truly inspiring!

 **AHLIA SCHOOL OF ENGINEERING & TECHNOLOGY**  
ISO 9001:2015 Certified Institution. Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University  
AHLIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557, PH: 04923-228666  




*Electronic Modules for Industrial Applications using Op-Amps*  
from IISc Bangalore

**Dr. V BALAMURUGAN**  
Professor & HoD  
Department of Electronics & Communication Engineering





*Programming, Data Structures and Algorithm using Python*  
from Chennai Mathematical Institute

**Dr. KRISHNA KUMAR KISHOR**  
Vice Principal  
Ahlia School of Engineering & Technology





  
**DIVYA MOHAN**  
Assistant Professor  
Department of Electronics & Communication Engineering



  
**GAYATHRI P S**  
Assistant Professor  
Department of Electronics & Communication Engineering



  
**Dr. V BALAMURUGAN**  
Professor & HoD  
Department of Electronics & Communication Engineering



  
**Dr. ANEESH K**  
Assistant Professor  
Department of Electronics & Communication Engineering



  
**VIJITHA KHAN**  
Assistant Professor  
Department of Electronics & Communication Engineering