

## State the Vision and Mission of the Department and Institute

### Vision and Mission of the Institute

#### VISION

- ❖ To become a globally recognized Institution in Engineering Education, Research and Entrepreneurship.

#### MISSION

- ❖ Accomplish quality education through improved teaching learning process.
- ❖ Enrich technical skills with state of the art laboratories and facilities.
- ❖ Enhance research and entrepreneurship activities to meet the industrial and societal needs.

### Vision and Mission statements of the Department

#### VISION

- ❖ To produce globally competitive Electronics and Communication Engineers and Entrepreneurs with ethical values.

#### MISSION

- ❖ Impart quality education through student centric teaching and learning process.
- ❖ Equip students with Industry driven skills by providing excellent Infrastructure and continuous interaction with academia and Industry.
- ❖ Empower students towards research, entrepreneurship and lifelong learning to meet societal needs.

## State the Program Educational Objectives (PEOs)

### PEOs of ECE Department

PEO	Keywords	Description
PEO 1	<b>Core Competency</b>	Graduates will have strong foundation in Engineering, Science and Technology for a successful career in Electronics and Communication Engineering.
PEO 2	<b>Professionalism</b>	Graduates will have effective communication skills, interpersonal skills and ethical values to exhibit professionalism in multidisciplinary environment.
PEO 3	<b>Higher studies and Entrepreneurship</b>	Graduates will pursue professional development through higher studies and have entrepreneurial attitude to address technological changes and societal needs.

## Program Specific Outcomes (PSO)

**PSO1: Embedded system design:** Graduates will be able to analyze, design, construct and test electronic and embedded systems for desired specification.

**PSO2 : Simulation Tools:** Graduates will be able to solve emerging real world problems using suitable hardware and software tools.

## Program Outcome for Electronics and Communication Engineering

**PO 1: Engineering Knowledge:** Apply knowledge of mathematics, science and engineering principles to solve problems in the domain of Electronics and Communication Engineering.

**PO 2: Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO 3: Design/Development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO 4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO 5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO 6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess Societal, Health, Safety, Legal and Cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO 7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.

**PO 8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO 9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO 10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO 11: Project management and finance:** Demonstrate Knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO 12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## ABOUT THE DEPARTMENT

The Department of Electronics and Communication with its cohesive team of faculty members, offers a sound programme at the UG level. Through curriculum, projects, forum and various clubs we meet the growing demands and the changing trends of the software industry and research laboratories.

The department of ECE is equipped with the best of resources to enrich the bloodline of the department ensuring high quality education to the students. The department has spacious laboratories, class rooms, staff rooms, and well stacked department library. The department has more than **120 computers** with the state of the art facilities. All the computers are installed with latest software supporting the recent advancements in the real time applications. The list of software includes MATLAB, Xilinx, Microwind, NetSim, NS2, OPNET, ModelSim, Multisim etc. The laboratories are fully equipped with latest equipment.

All the faculty and students are encouraged and sponsored to attend Winter / Summer programmes to upgrade & update the current trends in technological advancements.



**MESSAGE FROM PRINCIPAL**

**Dr.M.Venkatesan, M.E.,Ph.D.,  
Principal**

I congratulate the Department of Electronics and Communication Engineering for bringing out the Department Technical magazine, **ECE Chronicle -Innovations Illustrated**. I am sure that the magazine will provide a platform to the students and faculty members to expand their technical knowledge and sharpen their hidden literary talent and will also strengthen the all round development of the students.

I am hopeful that this small piece of literary work shall not only develop the taste for reading among students but also develop a sense of belonging to the institution as well. My congratulations to the editorial board who took the responsibility for the arduous task most effectively. I extend best wishes for the success of this endeavor.

**MESSAGE FROM HOD**

**Dr.R. Nandakumar M.E.,Ph.D.,  
Head of the Department/ECE**

It is an occasion of great pride and satisfaction for the department of ECE, KSRIET to bring out the technical magazine **ECE Chronicles- Innovations Illustrated** for the academic year 2017-18. The wide spectrum of articles gives us a sense of pride that our students and faculties possess creative potential and original thinking in ample measures.

Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in article contributed by them.

## INSPIRATION OF THE CENTURY

### A. P. J. ABDUL KALAM

Avul Pakir Jainulabdeen Abdul Kalam better known as A. P. J. Abdul Kalam was the 11th President of India from 2002 to 2007. He spent the next four decades as a scientist and science administrator, mainly at the Defence Research and Development Organization (DRDO) and Indian Space Research Organization (ISRO) and was intimately involved in India's civilian space programme and military missile development efforts. He thus came to be known as the Missile Man of India for his work on the development of ballistic missile and launch vehicle technology.

After graduating from the Madras Institute of Technology, Kalam joined the Aeronautical Development Establishment of the Defense Research and Development Organization as a scientist after becoming a member of the Defence Research & Development Service (DRDS). He started his career by designing a small hovercraft, but remained unconvinced by his choice of a job at DRDO. Kalam was also part of the INCOSPAR committee working under Vikram Sarabhai, the renowned space scientist. Kalam was then transferred to the Indian Space Research Organization (ISRO) where he was the project director of India's first Satellite Launch Vehicle (SLV-III). Kalam received the government's approval and expanded the programme to include more engineers.

Kalam strongly advocated an action plan to develop India into a "knowledge superpower" and a developed nation by the year 2020. He regarded his work on India's nuclear weapons programme as a way to assert India's place as a future superpower.

He identified five areas where India has a core competence for integrated action:

1. Agriculture and food processing;
2. Education and healthcare;
3. Information and communication technology;
4. Infrastructure, reliable and quality electric power, surface transport and infrastructure for all parts of the country;
5. Self-reliance in critical technologies.

These five areas are closely inter-related and if advanced in a coordinated way, will lead to food, economic and national security. Kalam took an active interest in other developments in the field of science and technology, including a research programme for developing biomedical implants. He also supported open source technology over proprietary software, predicting that the use of free software on a large scale would bring the benefits of information technology to more people. Kalam set a target of interacting with 100,000 students during the two years after his resignation from the post of scientific adviser. He explained, "I feel comfortable in the company of young people, particularly high school students. Henceforth, I intend to share with them experiences, helping them to ignite their imagination and preparing them to work for a developed India for which the road map is already available."

His dream is to let every student to light up the sky with victory using their latent fire in the heart Kalam received 7 honorary doctorates from 40 universities. The Government of India honored him with the Padma Bhushan in 1981 and the Padma Vibhushan in 1990 for his work with ISRO and DRDO and his role as a scientific advisor to the Government. In 1997, Kalam received India's highest civilian honour, the Bharat Ratna, for his contribution to the scientific research and modernization of defense technology in India. In 2013, he was the recipient of the Von Braun Award from the National Space Society" to recognize excellence in the management and leadership of a space-related project".

Kalam believed that children out of small town India were capable of great things if only they received exposure and encouragement, like he once did. Returning to the small house on the small street he lived in with his brother, he dreamed of seeing the children of Ramnathapuram outgrow their roots and achieve big. For the last few decades of his life, it became his pet obsession.

He would have been proud to die on a stage amongst students in a remote province of India. Every teacher he ever had, he passed their learning and their encouragement on a hundred fold, and he did them proud.

**Faculty Pursuing Ph.D.:**

S. No.	Name of the Faculty	Research Area
1	P. Govindaraju	Wireless Networks
2	S. Premalatha	Digital Speech Processing
3	J. Divakaran	Wireless Communication
4	K.J. Uma	Embedded Systems
5	T. Senthil	Embedded Systems

**FACULTY DETAILS****Teaching Staff:**

S. No	Staff Name	Qualification	Designation
1.	Dr.R.NANDAKUMAR	B.E., M.E., Ph.D.,	Professor & Head
2.	Dr.R.VENKADESH	B.E., M.Tech., Ph.D.,	Professor
3.	Dr.A.N.NANDAKUMAR	B.E., M.Tech., Ph.D.,	Professor
4.	Dr.N.R.RAJALAKSHMI	B.E., M.E., Ph.D.,	Professor
5.	Dr.W.DEVAPRIYA	B.E., M.E., Ph.D.,	Associate Professor
6.	P.GOVINDARAJU	B.E., M.E., M.B.A., (Ph.D).,	Assistant Professor
7.	P.PREMKUMAR	B.E., M.E., M.B.A.,	Assistant Professor
8.	G.GOWTHAMRAJ	B.E., M.E.,	Assistant Professor
9.	T.SENTHIL	B.E., M.E., (Ph.D).,	Assistant Professor
10.	S.GOMATHI	B.E., M.E.,	Assistant Professor
11.	N.K.SHANKAR	B.E., M.E.,	Assistant Professor
12.	P.VIDHYA	B.E., M.E.,	Assistant Professor
13.	S.NANDHAKUMAR	B.E., M.E.,	Assistant Professor
14.	R.TAMILMANI	B.E., M.E.,	Assistant Professor
15.	S.KARTHIK	B.E., M.E.,	Assistant Professor
16.	K.J.UMA	B.E., M.E., (Ph.D)	Assistant Professor

17.	K.R.GOKULANAND	B.E., M.E.,	Assistant Professor
18.	B.LATHA	B.E., M.E.,	Assistant Professor
19.	T.MARTHANDAN	B.E., M.E.,	Assistant Professor
20.	V.PRAVEEN KUMAR	B.E., M.E.,	Assistant Professor
21.	K.VENKATACHALAM	B.E., M.E.,	Assistant Professor
22.	M.V.MAHESH	B.E., M.Tech	Assistant Professor
23.	P.SARANYA	B.E., M.E.,	Assistant Professor
24.	S.PREMALATHA	B.E., M.E., (Ph.D)	Assistant Professor
25.	J.DIVAKARAN	B.E., M.E., (Ph.D)	Assistant Professor
26.	A.RAVI	B.E., M.E.,	Assistant Professor
27.	R.LEELAVATHI	B.E., M.E.,	Assistant Professor
28.	E.L.DHIVYAPRIYA	B.E., M.E.,	Assistant Professor

#### Supporting Faculty

S. No	Staff Name	Designation
1.	A.SUNDAR	LAB TECHNICIAN
2.	L.RADHIKA	LAB TECHNICIAN
3.	R.SRIMATHI	PROGRAMMER
4.	C.SUGENDHAR	LAB TECHNICIAN
5.	P.SABARIGIRI	LAB TECHNICIAN

## STUDENTS TOPPERS LIST

### IV SEM RESULTS (II YEAR)

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	G.PREETHI	8.304	1	
2	GOKILA.T	8.196	2	
3	GOWRI.P	8.176471	3	

### III SEM RESULTS (II YEAR)

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	PREETHI G	8.263	1	
2	GOWRI.P	8.184	2	
3	GOKILA.T	8.132	3	

**VI SEM RESULTS (III YEAR)**

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	VIGNESHWAR	7.966	1	
2	SRIDHAR T	7.859	2	
3	HEMAVARTHINI M	7.691	3	

**V SEM RESULTS (III YEAR)**

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	SRIDHAR T	8.017	1	
2	SURIYA V	7.973	2	
3	VIGNESHWAR B	7.963	3	

**VII SEM RESULTS (IV YEAR)**

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	NANDHINI A	8.503	1	
2	SITHARA BEGUM. A	8.28	2	
3	MONISHA. S	8.212	3	
4	KARTHICK B	8.212	3	

**VIII SEM RESULTS (IV YEAR)**

S.NO	STUDENT NAME	CGPA Obtained	Rank	Photo
1	NANDHINI A	8.420	1	
2	MONISHA S	8.160	2	
3	KARTHICK B	8.155	3	

## TECHNOLOGY EXPERTISE ZONE

### RIDING AN ENERGY BEAM TO SPACE

Beam- energy propulsion using a beam of energy directed at a spacecraft either to heat up its propellant or to deliver electricity to its engine. By removing the energy source from the rocket itself, beam-energy propulsion has the potential to make launching spacecraft cheaper and more reliable. In conventional chemical propulsion, massive amounts of energy are stored in a rocket's fuel, which makes up a significant amount of its weight. In addition, chemical systems are heated to temperatures above the melting point of some materials in the rocket itself, says Alexander Brucocoleri, a researcher in the aeronautics and astronautics department at MIT, who recently received his masters from the space propulsion lab. Brucocoleri invented test beam-energy systems.

Beam energy was dreamt up in the late 1970s by NASA Ames Research Center and the California institute of technology. The idea was to use lasers as a heat exchanger- take the energy and make a hot fluid that can expand out of the nozzle. Now researchers are exploring ground-based lasers systems that heat fuels such as hydrogen to a temperature that is easier to manage. "The hydrogen molecules can be accelerated twice as fast as water molecules with the same temperature, providing better exhaust velocity- the thrust you get for the rate at which you are burning the propellant. Using light as an external power source can alleviate the weight and mass of having an onboard system, leaving room for scientific payloads. Kevin Johnson, a space exploration and spacecraft propulsion manager expresses concern about the potential for atmospheric interference with the beam.

**-Dr.R.Nandakumar**

**HOD/ECE**

## TECHNOLOGY EXPERTISE ZONE

### INTRODUCTION TO ARTIFICIAL NEURAL NETWORKS

An artificial neural network (ANN) is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. The key element of this paradigm is the novel structure of the information processing system. It is composed of a large number of highly interconnected processing elements (neurons) working in unison to solve specific problems. ANNs, like people, learn by example. An ANN is configured for a specific application, such as pattern recognition or data classification, through a learning process. Learning in biological systems involves adjustments to the synaptic connections that exist between the neurons. This is true for ANNs as well.



#### The use of neural networks

- Adaptive learning : An ability to learn how to do tasks based on the data given for training or initial experience.
- Self- Organization: An ANN can create its own organization or representation of the information it receives during learning time.
- Real time operation: ANN computations may be carried out in parallel, and special hardware devices are being designed and manufactured which take advantage of this capability.

- Mr.R.Tamilmani  
Assistant Professor, ECE

## TECHNOLOGY EXPERTISE ZONE

### INTERVEHICLE COMMUNICATION- VANET

Vehicular network can be deployed by network operators and service providers or through integration between operators, providers, and a governmental authority. Recent advances in wireless technologies and the current and advancing trends in ad hoc network scenarios allow a number of deployment architectures for vehicular networks, in highway, rural, and city environments. Such architectures should allow communication among nearby vehicles and between vehicles.



The main characteristic of the VANET is the infrastructure absence, such as access point or base stations, existing in the Wi-Fi, WiMax, GSM or UMTS. The communication between nodes that they are beyond of the reach of transmission of the radio is made in multi hops through the intermediate nodes contribution. On the other hand, the media without wire, into the absence of infrastructures and the multi hops routing transforms these networks in potential targets of diverse types of attacks that go since simple eavesdropping (espionages) passive of the messages until active interferences with the creation, modification and destruction of the messages.

- Dr.N.R.Rajalakshmi  
Professor,ECE

## TECHNOLOGY EXPERTISE ZONE

### OPTICAL COMPUTERS

Optical Computers need not be thought of merely as rapid substitutions for electronic devices. On the contrary, the greatest benefit of optical switches could come from applications that cannot be duplicated by other means. Optical fibers, which can carry prodigious amounts of information, are being used increasingly for communications among computers. Optical switching is a natural candidate to mediate between electronic systems and optical ones. On the other hand, if the computation is done optically to begin with, optical fibers could be employed as direct links between computing systems. A computer in which all internal circuits use light instead of electricity. However, there are definite advantages to optical circuits over electrical ones.

Light beams are neither affected by external radiation, nor by themselves. In fact, light beams can cross each other, allowing for simpler travel paths between inputs and outputs. Optical computer technology is still in the early stages: functional optical computers have been built in the laboratory, but none have progressed past the prototype stage. Most research projects focus on replacing current computer components with optical equivalents, resulting in an optical digital computer system processing binary data. This approach appears to offer the best short-term prospects for commercial optical computing, since optical components could be integrated into traditional computers to produce an optical/electronic hybrid. Other research projects take a non-traditional approach, attempting to develop entirely new methods of computing that are not physically possible with electronics.

Pure optical Computers use multiple frequencies. Information is sent as light waves and packets. These computers are very fast as there is no need to convert the light to binary form. The computers use lens let optical processor.

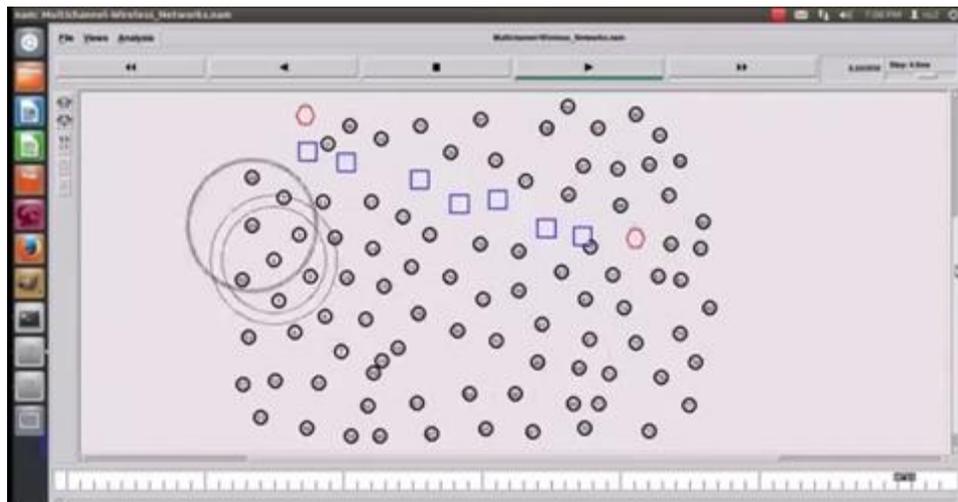
- Ms.E.L.DhivyaPriya  
Assistant Professor, ECE

## TECHNOLOGY EXPERTISE ZONE

### PATH STABILITY BASED LOAD BALANCING IN WIRELESS SENSOR NETWORKS

Energy efficiency is a major issue in Wireless Sensor Networks. Due to path failure, sensor nodes consume high energy. So, the performance of the networks is totally degraded. To overcome this issue, we proposed New Adaptive Reporting Protocol (NARP). It attains both throughput and network connectivity while keeping the nodes moving in dynamic manner. The scheme consists of two phases. In first phase, we proposed multipath routing to provide load balancing to improve the throughput.

The proposed multipath contains the route discovery process and route maintenance process. During route selection, the minimum power consumption route is chosen to set the maximum power efficiency. In second phase, the path stability is determined to improve the network connectivity and reduce the packet losses. Here the sensor nodes are assigned with the constant code words and different time slots. By using the extensive simulation results using the discrete event simulator, the proposed NARP achieves higher packet delivery ratio, network lifetime, less energy consumption, overhead and delay than the existing scheme GSTEB.



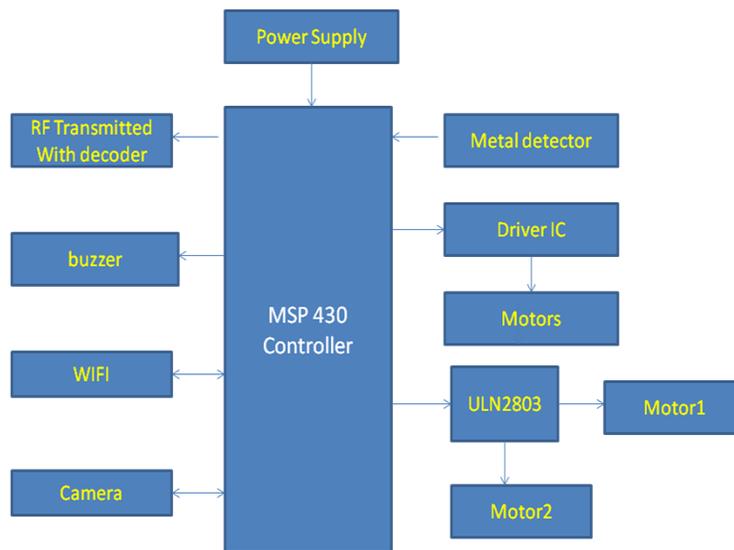
- Mr.J.Divakaran  
Assistant Professor, ECE

## TECHNOLOGY EXPERTISE ZONE

### MILITARY SPYING BOMB DIFUSION ROBOT USING MSP430

#### OBJECTIVE

Android Military Spying & Bomb Disposal Robot: Team main objective of this project is to reduce the high risk for human while involving bomb squad or disposal operation in the military application. A robot vehicle is used to identify and pickup the bomb from the critical zone and disposes it. In military there is No robot bomb detector. Still we are having only human bomb detector. There is no such technology used in Indian military system to dispose the bomb, using the robot. The project consists of micro-controller, android app technology, metal detector, wireless camera, wireless module. Our main motive is to the human risk at the defense system while diffusing the bomb as I already mentioned human resources is the most precious one when compare to the any other resources. So we tried to reduce the human risks at the defense time.



PROPOSED BLOCK DIAGRAM OF WIRELESS SPYING AND BOMB DISPOSAL ROBOT USING MSP430

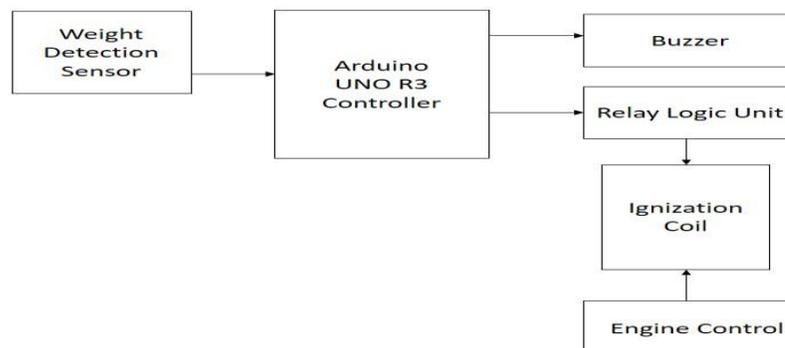
- B.Vigneshwar  
M.Logesh kumar  
Final Year,ECE

## TECHNOLOGY EXPERTISE ZONE

### ARDUINO BASED AUTOMATIC ENGINE LOCKING SYSTEM FOR OVERLOAD VEHICLES

Now-a- days, many accidents are happening because of carrying Overload in vehicles. Thus carrying overload in vehicles is a major reason of accidents in almost all countries all over the world. The Input value of weight Detection Sensor given is Analog and the output of sensor is Digital, which is used to detect the weight of the vehicles. The Overload weight in digital Value is controlled by using the Arduino UNO R3 controller in Vehicles by using weight detection sensor (load cell).

When the weight is overloaded in vehicle then controller is detect the signal and give to Buzzer. Then the buzzer will indicate the Maximum Weight Level of Vehicle at Initial information of vehicle weight and if the weight is continued, then by using Relay logic unit, we can switch on or off, the engine System. In this, the Relay logic unit is act as Switch. At which, once the weight is indicated in Buzzer, then the weight should be remove from the vehicle, If the Weight is not Reduce and be continued then the Relay will Switched On ,at which it will switch Off the Engine control by using ignization Coil of vehicles.

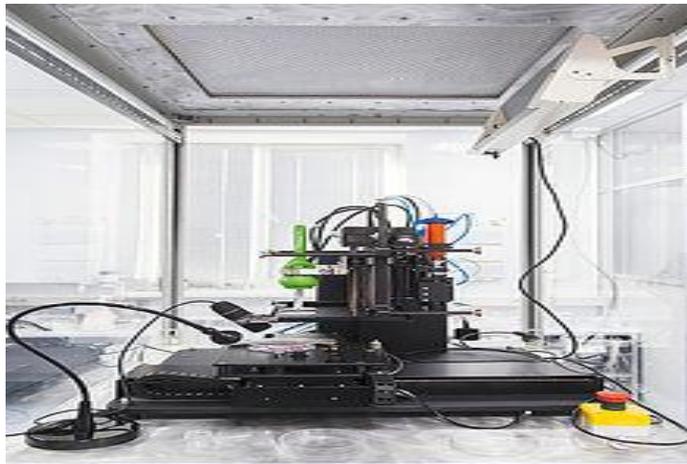


- Udhayakumar.B
  - Tamilarasu.S
  - Vigneshwar.B
  - Ranganathan.S
- Final years

## TECHNOLOGY EXPERTISE ZONE

### DIGITAL IMAGE PROCESSING

The one of the digital image processing technology is, 3D bio printing is the process of creating cell patterns in a confined space using 3D printing technologies, where cell function and viability are preserved within the printed construct. Generally, 3D bio printing utilizes the layer-by-layer method to deposit materials known as Bio links to create tissue-like structures that are later used in medical and tissue engineering fields. Bio printing covers a broad range of materials. Currently, bio printing can be used to print tissues and organs to help research drugs and pills. The company utilizes its Novo Gen MMX Bio printer for 3D bio printing. The printer is optimized to be able to print skin tissue, heart tissue, and blood vessels among other basic tissues that could be suitable for surgical therapy and transplantation. Similarly, a research team at Swansea University in the UK is using bio printing technology to produce soft tissues and artificial bones for eventual use in reconstructive surgery. Bio printing technology will eventually be used to create fully functional human organs for transplants and drug research, which will allow for more effective organ transplants and safer more effective drugs.



Devi.U  
Kavipreethi.V  
Third years

## TECHNOLOGY EXPERTISE ZONE

### EMBEDDED SYSTEM

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. Properties of typical embedded computers when compared with general-purpose counterparts are low power consumption, small size, rugged operating ranges, and low per-unit cost. This comes at the price of limited processing resources, which make them significantly more difficult to program and to interact with. Software dominates the embedded system design process; according to some estimates, software development can now consume up to 70% of a project's resources.



Traditionally, software development started when the hardware arrived, but not any more: software designers are using virtual prototypes to get their projects started in time to meet the deadlines. But there are also operating systems, which manage this growing complexity.

The choices are numerous and have an impact at the system level, as well for deeply embedded products. And C is no longer the only programming language. Whatever the complexity of the embedded system you're developing software for, New Electronics addresses the issues regularly by looking at the latest tools and techniques available.

- Nivetha S.  
- Roshni T.  
Second Years

## TECHNOLOGY EXPERTISE ZONE

### VLSI DESIGN TECHNOLOGY

Very-large-scale integration (VLSI) is the process of creating an integrated circuit (IC) by combining thousands of transistors into a single chip. The first semiconductor chips held two transistors each. Subsequent advances added more transistors, and as a consequence, more individual functions or systems were integrated over time. The first integrated circuits held only a few devices, perhaps as many as ten diodes, transistors, resistors and capacitors, making it possible to fabricate one or more logic gates on a single device

Current technology has moved far past this mark and today's microprocessors have many millions of gates and billions of individual transistors. New developed state-of-the-art VLSI memory chips, exemplified by DRAM, SRAM, and Flash memory, are discussed. Second, technology trends concerning standard DRAM's, embedded memories, and low-voltage memories are reviewed. For standard DRAM's, memory cells with high cell capacitance, high-speed subsystem technologies (such as synchronous operations, pipelining/perfecting, and use of packet protocols), and small-swing interfaces are investigated. And regarding embedded memories, the advantages and the challenges involved in reducing process costs are presented.



-Marimuthu M.  
-Balaji.R  
Second Years

## **TECHNOLOGY EXPERTISE ZONE**

### **COMMUNICATION - SECURITY, PRIVACY AND HIDING BODIES IN THE CLOUD**

Wireless communication consist of a transmitter, transmitting information at a frequency which remains constant with time, as constant as technology permits, thus the bandwidth is kept within certain limits. With conditions such as these it leaves the transmitted signal very susceptible to interception and interference.

Spread spectrum involves the deliberate variations in frequency of the transmitted signal over a comparatively large segment of the electromagnetic spectrum. This variation is done in accordance with a specific, complicated mathematical function. This frequency-versus-time function must be 'known' by both sender and receiver to ensure synchronisation. Spread Spectrum uses wide band, noise-like signals. Because Spread Spectrum signals are noise-like, they are hard to detect. Spread Spectrum signals are also hard to Intercept or demodulate. Further, Spread Spectrum signals are harder to jam (interfere with) than narrowband signals. Because Spread Spectrum signals are so wide, they transmit at a much lower spectral power density, measured in Watts per Hertz, than narrowband transmitters.

For a signal transmitted in such a manner to be incepted, a receiver must be tuned to frequencies that vary precisely according to this frequency-versus-time function, and must also have knowledge of the starting point at which the function begins. It is imperative for the spread spectrum function be kept very confidential and out of the hands of unauthorised persons.

-Dhivya T.  
Brindha M.  
Second years

## TECHNOLOGY EXPERTISE ZONE

### IMPORTANT WEBSITES

<http://www.engineering.com/>

<http://www.efunda.com/home.cfm>

<http://www.engineeringtoolbox.com/>

<http://www.howstuffworks.com/>

<http://www.eng-tips.com/>

<http://www.discoverengineering.org/>

<http://www.fun-engineering.net/>

<http://www.manufacturingiscool.com/>

<http://pbskids.org/designsquad/>

<http://www.futuresinengineering.com/>

<http://www.engineeryourlife.org/>

<https://www.indiabix.com/>

[www.knowafest.com](http://www.knowafest.com)

<http://www.ece.org/>

<http://www.mathworks.in/products/matlab/>

<http://www.opencircuitdesign.com>

<http://www.nptel.iitm.ac.in>

<http://www.engineering.carrers360>

## TECHNOLOGY EXPERTISE ZONE

### COMPANIES FOR EC ENGINEERS

- ✚ ISRO -Indian Space Research Organization
- ✚ BEL -Bharat Electronics Limited
- ✚ ECIL -Electronics Corporation India Limited
- ✚ DRDO -Defense Research and Development Organization
- ✚ BSNL JTO -Bharat Sanchar Nigam Limited Junior Telecom Officers
- ✚ SAIL -Steel Authority of India Limited
- ✚ GAIL -Gas Authority of India Limited
- ✚ HAL -Hindustan Aeronautics Limited
- ✚ NTPC -National Thermal Power Corporation
- ✚ ONGC -Oil and Natural gas Commission Limited
- ✚ Bharat Sanchar Nigam Ltd (BSNL)
- ✚ CMC Ltd
- ✚ Amara Raja Batteries Ltd
- ✚ Bartronics India Ltd
- ✚ Cranes Software International Ltd
- ✚ Datamatics Global Services
- ✚ Dell India Private Ltd
- ✚ Delta Energy Systems (India) Pvt Ltd
- ✚ Educomp Solutions Ltd
- ✚ EMC India
- ✚ Eveready
- ✚ Bharthi Airtel Ltd
- ✚ Industries India Ltd
- ✚ Exide Industries Ltd
- ✚ Bharthi Teletech

## READERS GARDEN



The department of ECE library “READERS GARDEN” has more than 680 books with more than 100 active members. The aim of the department library is to encourage reading habits among the students. The library holds books in its own domain, also inspirational books and autobiographies. This provides a space to the students to enrich their knowledge in the other fields.

The library in charge Mrs. S.Gomathi, AP/ECE is organizing various events in READERS ARENA 2017 so as to encourage student’s participation. The following events are organized for the current academic year 2017.

- ✚ Book Review
- ✚ Newspaper review
- ✚ Essay Writing

## PROJECTS

Projects can be one of the most efficient ways to learn as they force you to apply the skills while learning them. This, in fact, aids in retention and increases the usefulness of the skills learned. Countless startups have been created in the department of ECE that people's projects are key ways to find resources. Beyond simply helping you to learn skills, projects allow you to produce something. They allow you to learn and gain recognition for yourself. They are one of the most powerful tools in your arsenal of things to do with your time.

In such a way, the students of ECE, KSRIET is being guided by our faculty team headed by **Mr.S.Karthik**, AP/ECE. Our students done many real time projects that solves the day -to-day problems.

The students are encouraged to participate in many project expos. In the same way the student's teams are encouraged to apply for the "TEXAS INSTRUMENTS - India Innovation Challenge Design Contest 2017 (sponsored by **Department of Science and Technology (DST), IIM Bangalore**).

More than 21 batches have been guided to participate in the above contest by the project team for the academic year 2017-18. Last year successfully six teams got selected for the semi-finals and got certification. Also they got TI KIT worth One lakhs rupees for the department of ECE.

The final year students have been guided to submit their Project proposals for **STUDENT PROJECT SCHEME** conducted\_by **TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**. More than 11 batches have been submitted their proposals for the above mentioned contest. A Batch of 4 students PREETHIBERLIN W, PRIYA P, SINEHAN and VENKATESH V has submitted their project titled "**Smart Sanitation**" guided by **S.KARTHIK, AP/ECE** for NIYANTRA -Annual student design contest 2017 conducted by national instruments, Bangalore and has been shortlisted for the semi final round.



THE TI SPONSORED KIT FOR THE DEPARTMENT OF ECE

## **PROJECTS SUBMITTED FOR TI CONTEST**

The TI contest was conducted for the academic year 2017-18. More than 20 batches were registered their project ideas, under the guidance of eminent faculties for TI contest. The project lab was constructed with the required components in such a way that it supports the students to do projects in the college campus. Some of the projects title is *Smart Sanitation, Intelligence Automatic Time Adjusting Traffic Light Control System and AGROTRONICS.*

## **EVENTS CONDUCTED BY THE DEPARTMENT ASSOCIATION AURA:**

AURA is the association of the Department of Electronics and Communication Engineering, KSRIET. The association AURA works for the students benefit to improve their technical and non technical knowledge. And also it conducts various events for the benefit for faculty members of the department. Various events were conducted by the association AURA for the academic year 2017-18. A National level Two Days Faculty development programme on the topic "Principles of Digital Signal Processing" were conducted on 15.06.17 & 16.06.17 for the faculty members to enrich their knowledge on the signal processing techniques. A three days workshop on the topic "Project Based Learning in Embedded System Design using ARDUINO platform" was conducted for the students from 09.08.17 to 11.08.17.

The workshop guided the students with the hands on experience on ARDUNIO platform. The mini project ideas were given to the students at the end of the workshop. The resource person for the workshop Mr.A.Prabakaran, AP/Automobile Engineering , Kumaraguru College of Technology shared his experience with the students and guided them in a better way. The association AURA inauguration was conducted on 16.8.2017 in the ECE seminar hall. Mr.V.Pasupathy, Program Manager, Infosys were invited as the guest of honor and a guest lecture was given by him on the topic "Bridging Gap between College and m7Corporate". A value added course on network and security were conducted by T.Marthandan, AP/ECE, KSRIET from 24.08.17 & 30.08.17.

## **EVENTS ORGANISED BY ISTE STUDENT CHAPTER**

A special lecture on the topic "Marabiyalum Naveenamum" was given by Mr. Parthiban Baskaran, DCSE, Tamil Heritage Foundation-Germany on 10.11.2017. A motivational talk on the topic "SELF ENHANCEMENT" was given by Mr.Jayaraman Umashankar, Corporate Trainer & Consultant on 07.03.2017. every Tuesday first hour, Dr.R.Nandhakumar, HOD/ECE will be addressing the students with his motivational speech to improve their interpersonal skills and the skills both on technical and non technical aspects.

## ENTERPRENEURSHIP DEVELOPMENT CELL EVENTS

EDC cell of the department of ECE had conducted the listed two events for the academic year 2017-18 to create best entrepreneurs from the campus of KSRIET.

The events conducted are listed below in the tabular form.

S.NO	TYPE PROGRAM	TITLE OF THE PROGRAM	DATE	GUEST/ RESOURCE PERSON	SPONSERS
1	Seminar	Entrepreneurship Awareness Camp	16.07.17 to 18.07.17	VM.Mohan SWAM Technologies, Karur Matheswaran.S Managing Director, Shakthi Sharran Chemicals. Madhavakrishnan Thendral Studio	EDC Cell
2	Seminar	Entrepreneurship Awareness Camp	19.07.17 to 21.07.17	Thilagavathi. N AE, DIC, Namakkal Bhaskar Managing Director, Boom Institute, Erode	EDC Cell

The students of ECE are very well trained, in the way to expose their talents in the events organized by other colleges. The tabular form represented below list the number of students participated in the paper presentations, workshops, and seminar and project presentation. The students are also participated in the other extra and co-curricular. The list of extra and co-curricular activities participated by the students are also given below.

PAPER PRESENTATION					
S.NO	NAME OF THE STUDENT	YEAR/SEM	NAME OF THE EVENT	DATE	ORGANISED BY
1.	Bhuvaneshwari. R	III / V	Poster Presentation	09.09.17	KPR Institute of Engineering and Technology, Coimbatore
2.	Harini. T				
3.	Gowri. P				
4.	Kowsalya. C				
5.	Kathiravan . M	III/V	Paper Presentation	27.09.17	Salem College of Engineering and Technology
6.	Arunkumar A				
7.	Gopalakrishnan R				

WORKSHOP					
S.NO	NAME OF THE STUDENTS	YEAR/SEM	NAME OF THE EVENT	DATE	ORGANISED BY
1.	Brahadeeshwaran .M	II/III	Workshop on "Hack on Android"	13.08.17	Excel Engineering College
2.	Gowri. P	III/V	Workshop on Arduino	16.08.17	Arjun Engineering College
3.	Priyanga.S	III/ V	Workshop on Raspberry-pi, Arduino, IoT and Node-RED	25.08.17 & 26.08.17	Kongu Engineering College
4.	Priyanga.M				
5.	Maheshwari.C				
6.	Preethi.G				
7.	Ramesh.S				
8.	Gowtham.M	II/III	Workshop on "Internet of Things"	27.08.17	Coimbatore Institute of Technology
9.	Logesh Kumar.K				
10.	Iswarya.P				
11.	Malathi.A.S				
12.	Bhavyashree.S				
13.	Nandhakumaran.R				
14.	Thamarai Kannan.A.S				
15.	Syed Salman. N				
16.	Priyadharshini.S				
17.	Santhiya.G				
18.	Sowmiya.M				

#### PROJECT PRESENTATION

S.NO	NAME OF THE STUDENTS	YEAR/SEM	NAME OF THE EVENT	DATE	ORGANISED BY
1.	Vignesh .R	II/III	Project Expo - INVENTE 17 National Level Technical Symposium	09.09.17	SSN College of Engineering
2.	Sumathi R				
3.	Tharanya P				

#### SEMINAR

S.NO	NAME OF THE STUDENT	YEAR/SEM	NAME OF THE EVENT	DATE	ORGANISED BY
1.	Arun Kumar. A	III/ V	Seminar on PALS	09.08.17	Adhithya College of Engineering
2.	Ram kumar. L				
3.	Ranjith Raja. M				
4.	Sakthivel.K				
5.	Ananth.N	III/ V	PALS Campus Lecture	14.09.17	RVS Group of Institutions
6.	Dineshkumar .S				
7.	Karthikeyan.V				
8.	Abdul kadhar.S				

9.	Logesh kumar. K				
10.	Sathyamoorthi. K				
11.	Ranjith.V				
12.	Alexraj.A				
13.	Karthikeyan.P				
14.	Ramkumar.L				
15.	Ramesh S				
16.	Saravanakumar R				
17.	Palanivelu.G				
18.	Venkatesh.V				
19.	Arun.S.K				
20.	Ilakiya.S	II/ III	IEEE Coimbatore Hub Congress - 2017	08.09.17 & 09.09.17	Knowledge Institute of Technology
21.	Monika.R				
OTHER EVENTS					
S.NO	NAME OF THE STUDENTS	YEAR/SEM	NAME OF THE EVENT	DATE	ORGANISED BY
1.	Arunkumar A	III/V	ICTACT Youth Talk - Pre- finals	17.08.17	KSR Educational Institutions
2.	Dharani R				
3.	Karthikeyan P				
4.	Kavi preethi V				
5.	Keerthana L				

Our students of ECE participated in various events conducted by other colleges around Salem, Erode and Coimbatore districts. The prize winners of various events are given below.

S.N O	NAME OF THE STUDENTS	NAME OF THE EVENT	DATE	ORGANISED BY	PRIZES/ AWARD
1.	Kathiravan M	Paper Presentation	27.09.17	Salem College of Engineering and Technology	II
2.	Arunkumar A				
3.	Gopalakrishnan R				
4.	Vignesh R	Project Expo - INVENTE 17 National Level Technical Symposium	09.09.17	SSN College of Engineering	II
5.	Sumathi R				
6.	Tharanya P				
7.	Gowri P	Introduction to Modern	Sep & Oct 2017	Ministry of HRD Govt of india	Elite Grade

		Application Development			
8.	Deepankumar.S	Design for internet of things			
9.	Harshini Devi P	Introduction to internet of things			
10.	Gowri P				
11.	Bhuvaneswari R				
12.	Kowsalya C				
13.	Gokila T				

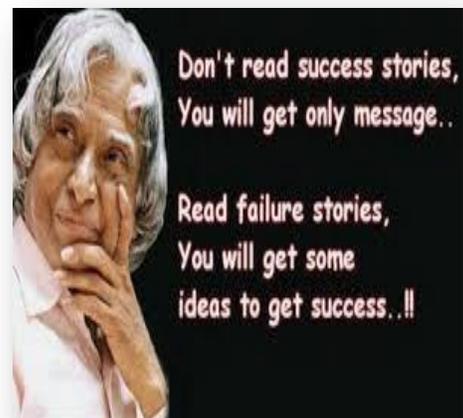
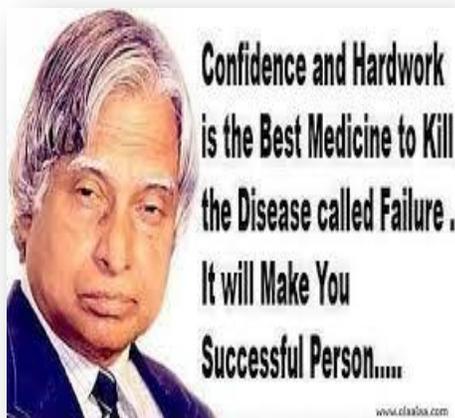
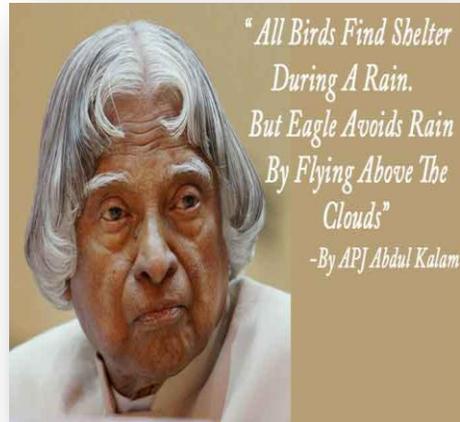
## ASSOCIATION INAUGURATION -AURA



## VALUE ADDED COURSE - PROJECT BASED LEARNING IN EMBEDDED SYSTEM DESIGN USING ARDUINO PLATFORM



## INSPIRATIONAL QUOTES



## Editorial Board

It is with great pride and privilege that we place before you the lovely edition of **ECE CHRONICLE - Innovation illustrated**. A small beginning made few years ago, has now blossomed into a superfine structure. It has given vent to the creative talent of the students and faculty members alike. We have made an earnest attempt to project the best possible as to make this issue an informative and interesting one. We look forward to your chronicle support and guidance in future also to bring out **ECE CHRONICLE - Innovation illustrated in an excellent way**.

<i>Principal</i>		Dr.M.Venkatesan
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<i>Association Head</i>		Mr.R.Tamilmani, AP/ECE
<i>Editor</i>		Ms.DhivyaPriya E.L.,AP/ECE
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		Mr.Sibichakravarthicholan C.
		Ms.Sharanya A.
	<i>Pre-Final Year</i>	Mr.Kathiravan M.
		Ms.Dhayali G.
		Mr. Pradhip R.R.
		Mr.Prabhu B.
		Mr. SelavRakeshKumar C.
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		Ms.Sumathi R.
		Ms.Malathi A.S.