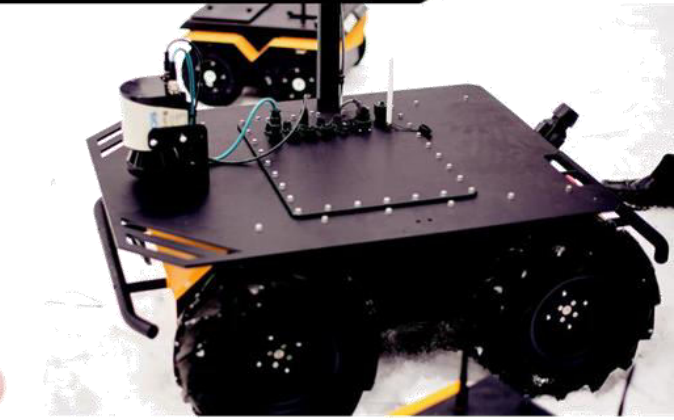


The Vizvasa

Department of ECE • Newsletter



Vol.7 Issue 1
Nov 2018



Administrator's Message



It is a matter of great pleasure to know that the seventh issue of the Institute newsletter is ready. The Newsletter will serve as an interface between the Institute and outside world. It provides information about the academic activities organized in the Institute - Information about co - curricular activities held during recent past is also shared.

I am happy to note that various initiatives are taken by the faculty to disseminate knowledge by organizing conferences, training programs and workshops. Expert lectures are also organized by various departments time to time to keep abreast with the latest developments in the field of science and technology.

The Institute has done good job in the past and able to produce quality Engineers and Technocrats capable of providing leadership in all spheres of life and society. Needless to say our commitment to further enrich the quality of education will be our constant endeavor. The demand across the country for a vibrant technical human resource has made us committed for the same. It is for all of us to do hard work to make the Institute known globally.

Principal's Message



I am happy to meet all of you through this News Letter and I thank all the staff who strived to give professional education in a new perspective manner and achieve perfection in all the fields. The main reason for our tremendous performance in various activities is the involvement of the faculty members who motivated students whole heartedly to participate in the seminars, industrial visit, inter activity session and other extracurricular activities to inculcate in them sound moral values, strong personality and eagerness to work in the society.

Because of these efforts we have been successful in molding the personality of our students and imbibe in them moral values and the spirit to team work. I wish this solidarity continues for successive years and we would be proud to release many more news letter like this, highlighting our achievements.




ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering was started in PEC in the year 1995 with the intake of 60 students with the objective of imparting quality education in the field of Electronics and Communication and the intake was increased to 120 in the year 2013. The department started M.E.Communication System in the year 2014 with an intake of 24 students. At present, the department is offering an undergraduate course in Electronics and Communication Engineering and one post graduate course in Communication Systems. The department has well-equipped laboratories with the facility of working in various areas like Integrated circuits, Microprocessor and Microcontrollers with interfaces, Microwave and optical communication, Digital signal processing and VLSI etc. The department has dynamic and committed faculty members who have published and presented papers in various Journals, National and international conferences in the area of speech processing, image processing, wireless communication networks and neural networks. Original MATLAB 7.0 with signal processing tool box, ORCAD PSPICE 10.1 version, XILINX 9.1 version is added to the department to bring multi faceted knowledge among students in the ECE discipline. The department in association with student professional bodies like IETE,ISTE, ICTACT has organized several workshops, conferences and other technical events.

VISION OF THE DEPARTMENT

To develop high quality, technically competent and socially responsible Engineers in the field of communication from rural background.

MISSION OF THE DEPARTMENT

1. To imbibe technical skills among graduates relevant to the area of electronics and communication engineering field.
 2. Making our students technologically superior and ethically strong.
 3. To instill skills among students to meet the industrial requirement
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PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

Program Educational Objectives (PEOs) are Broad Statements that describe what Graduates are expected to attain within a few years of Graduation. Program Educational Objectives are based on the needs of the program's Constituencies.

OBJECTIVES OF THE PROGRAM

PEO1: *Core Competence*

Graduates Excel In analyzing, designing, simulating and testing of all Electronics and Communication Engineering.

PEO2: *Breadth*

Graduates exhibit their multidisciplinary skills to integrate Contemporary knowledge.

PEO3: *Life Long Learning*

Graduates can adapt to lifelong learning to enhance their technical skills.

PEO4: *Professionalism*

Graduates excel in their professional careers as Engineers, consultants and entrepreneurs.

PROGRAMME OUTCOMES (PO'S)

Programme outcomes are narrower statements that describe what students are expected to know and be able to do upon the graduation. They are formed in line with the graduate attributes of NBA. These relate to the skills, knowledge, attitudes, values and behavior outcomes that students acquire through the programme.

Graduates will have ability to:

Programme Outcome 1 (Engineering Knowledge):

Understand and apply basic concepts of Mathematics, Physics, Chemistry and Engineering.

Programme Outcome 2 (Problem Analysis):

Understand and analyze circuit theory, electromagnetic theory, control theory, communication theory and apply them to electronics and communication engineering applications.

Programme Outcome 3 (Design & Development of Solutions):

Analyze and design the electronic components and to apply in analog and digital communication systems.

Programme Outcome 4 (Investigation of Complex Problem):

Analyze and design the electronic components and to apply in analog and digital communication systems.

Programme Outcome 5 (Modern Tools Usage):

Use contemporary computing tools and techniques in electronics and communication Engineering applications.

Programme Outcome 6 (Engineer and Society):

Handle engineering aspects of modern electronics and communication technology, utilization and the impact of engineering solutions to the Societal needs.

Programme Outcome 7 (Environment & Sustainability):

Acquire knowledge of contemporary issues to sustain the ever changing environment.

Programme Outcome 8 (Ethics):

Apply the ethical principles to their profession and social issues.

Programme Outcome 9 (Individual & Team work):

Perform individually and in a group to accomplish a common goal.

Programme Outcome 10 (Communication):

Effectively communicate and present technological developments.

Programme Outcome 11 (Lifelong Learning):

Gain self-confidence to engage in lifelong learning.

Programme Outcome 12 (Project management & Finance):

Plan and manage a project in a cost effective manner.

COLLEGE MOTTO


“PERSEVERANCE ENDURANCE COMMITMENT”





ECE Department Activities

SL. No	Name of the Event	Date	Resource Persons
1	Seminar on ' PCB Design & Embedded System '	25-07-2018	Mr.R.S.Venkatachalam.B.E. MS Managing Director, Wizaad System Coimbatore
2	National Level technical symposium "ECCLESIA-2k18"	25.08.2018	Dr.K.Umapathy M.E,Ph.D SCSVMV University, Kancheepram.
3	One Day Seminar on "Technology Enabled Solutions for Off-Highway Machines"	26.09.2018	Mr.S.Prabhu,B.E., Manager, Electronics Design Center, Schnell Technologies, Chennai
4	Trace down project	17.09.2018 to 19.09.2018	'TV Mechanic'



Seminar

One Day Seminar on “PCB Design & Embedded System” was conducted on 25.07.2018. The resource person was Mr.R.S.Venkatachalam.B.E. MS Managing Director, Wizaad System Coimbatore.



Symposium

National Level technical symposium "ECCLESIA-2k18" was conducted on 25.08.2018. The Chief Guest of the Symposium was Dr.K.Umapathy M.E,Ph.D , SCSVMV University, Kancheepram. 120 students had participated. Dr.K.Umapathy delivered elegant and simplified sessions on Silicon Brains and Embedded Systems

Totally 12 Teams Presented papers on various topics like "RFID, Artificial Intelligence, blue eyes , wireless communication and 15 teams participated in Technical Quiz, 10 teams participated in the Non- Technical event "Guess Logo"



Seminar

One Day Seminar on “Technology Enabled Solutions for Off-Highway Machines” was conducted on 26.09.2018. The resource person was Mr.S.Prabhu,B.E., Manager, Electronics Design Center, Schnell Technologies, Chennai.



Student Achievement

Final year ECE Student Mr. Habishekar.S won second prize in Tamil essay writing Swamy Vivekananda's Chicago lecture 125th Anniversary celebration.



ITC 2018

Final year ECE Students Mr.Kamlesh and Mr.Prashanth had participated in INDIAN TECHNOLOGY CONGRESS TECHNOLOGY FIRST conducted on 5th&6th SEPTEMBER 2018 at NIHMANS Convention Center , Bangalore. ITC-2018 is a flagship event of the Indian Technology Congress Association (ITCA), focusing on facilitating collaboration between technology professionals from the industry, R&D laboratories, government, academic institutions and other professional bodies.

The key topics for 2018 included:

- Transforming the Enterprise for a Digital Age
- Digital Manufacturing: Defining India's Vision 2030
- Challenges of Driving Digitalization in Public Sector Enterprises
- Agritech



Field Visit

Third year ECE Students had visited YERCAUD HILLS as part of Environmental Club Activities with different approaches to environmental sustainability by considering the challenges society faces, the solutions to those problems, and offer examples of professions that actively work to tackle and address the problems



Industrial visit



Industrial visit to the PEG lab at KELTRON, karakulam, Thiruvananthapuram-695564, Kerala was organized by the Department of Electronics and Communication Engineering on 31st August 2018. Final year ECE students of 2015-2019 batch along with faculty members visited to Keltron to interact with the Core Industry and to learn practical ideas on how to manufacture electronic components ,design circuits , create transformer and create coil winding

Field Visit



Industrial visit to SDSC-SHAR (ISRO), Sriharikota has been organized by Department of ECE for B.E II/III/IV Year students on 24th October 2018. ISRO is the primary space agency of India and one of the largest space research organizations in the world. The objective of the visit was to provide a Technical Exposure to the students about Space Technology and advancements in Technology. The visit not only provided a good insight into the quality of research happening in the area of space technology but also gave great exposure to the students about the future career prospects and areas of research in applied sciences

Staff Achievements

1. Mr.P.Arunkumar, Mr.G.Subramani, Mr.R.Selvarasan attended one day workshop on “Research Methods” organized by Research and Development Cell (R&D) on 30.08.2018.

2. Mr.P.Arunkumar, Mr.G.Subramani, Mr.R.Selvarasan attended one day workshop on “Intellectual Property Rights & Patents” organized by Research and Development Cell (R&D) on 07.09.2018.

Students Achievements:

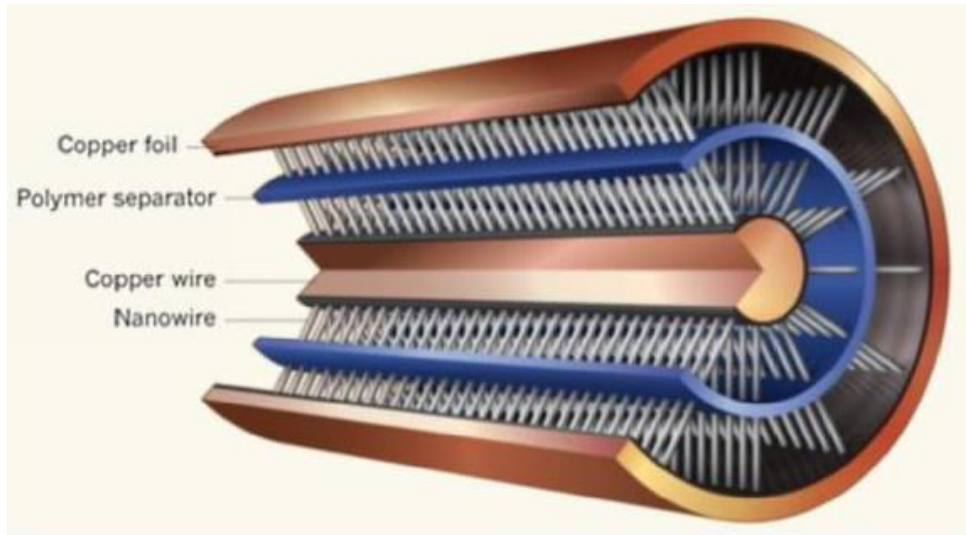
CO – CURRICULAR ACTIVITIES

1. Mr. S.Umashankar II year ECE student participated in paper presentation event titled “ 6G Technology” at PSV College of Engineering & Technology on 7th September 2018

2. Ms.S.Punithavathy and Ms.M.Priya of II Year ECE participated in National level Technical Symposium “TEKWARZZ-2K18” held on 7th September 2018 at PSV College of Engineering & Technology

3. Mr.Habishekar.S won second prize in Tamil essay writing Swamy Vivekananda's Chicago lecture 125th Anniversary celebration held at Sri Ramakrishna Mission Natrampalli.

Tech Article 1 –Super capacitor



The super capacitor, also known as ultra capacitor or double-layer capacitor, differs from a regular capacitor in that it has very high capacitance & it is also called electric double-layer capacitor (EDLC). A capacitor stores energy by means of a static charge as opposed to an electrochemical reaction. Applying a voltage differential on the positive and negative plates charges the capacitor. This is similar to the buildup of electrical charge when walking on a carpet. Touching an object releases the energy through the finger.

The super capacitor, which is thousands of times higher than the electrolytic capacitor. The super capacitor has evolved and crosses into battery technology by using special electrodes and electrolyte.

Storage principles

Electrochemical capacitors use the double-layer effect to store electric energy, however, this double-layer has no conventional solid dielectric to separate the charges.

There are two storage principles in the electric double-layer of the electrodes that contribute to the total capacitance of an electrochemical capacitor:

- Double-layer capacitance, electrostatic storage of the electrical energy achieved by separation of charge in a Helmholtz double layer

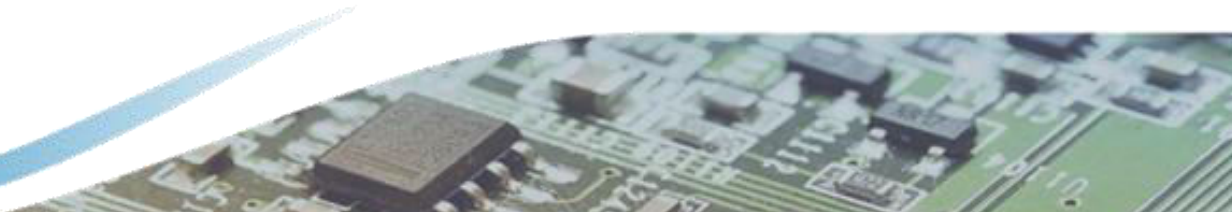
Both capacitances are only separable by measurement techniques. The amount of charge stored per unit voltage in an electrochemical capacitor is primarily a function of the electrode size, although the amount of capacitance of each storage principle can vary extremely.

Practically, these storage principles yield a capacitor with a capacitance value in the order of 1 to 100 farad.

Application spaces

At the high end of the energy storage spectrum, super capacitors are being used to increase the efficiency of hybrid electric vehicles in several ways. Today's hybrid vehicles typically turn off the engine completely when the car comes to a stop, however briefly, and then very efficiently start it again using energy stored in super capacitors.

Super capacitors are also used to protect CMOS logic and to power electronic toys, Security alarm systems, uninterruptible Power Supply (UPS) systems, and solar power are other common applications.






Tech Article 2: Will India become Solar Super Power country?

“India is the Saudi Arabia of renewable energy sources and if properly utilized, India can realize its place in the world as a great power - but political will is required for the eventual shift from fossil fuels to renewable energy.” It is as said by famous economist and activist Jeremy Rifkin in January 2012 at New Delhi. Now, as their green energy revolution is happening in India that can increase prosperity for millions of poor families by obtaining Clean Energy of the sun.

There are so many factors favoring India to taking leadership role in the Solar sweepstakes. India is endowed with vast solar energy potential with 500 trillion Kwh per year energy incident over the country’s land area and most part receiving 4-7 Kwh per square meter per day. Hence the two Technologies routes for the conversion of the solar radiation are taken into account, i.e. heat(solar thermal energy) & electricity.(solar photovoltaic energy)These can be tapped to ensure sustainable scalability for solar in India.





Solar energy offers India the potential to provide its long term power needs. By doing so we can reduce our dependence on fossil fuels and creates millions of new jobs. Also we can enhance the global competitiveness which leads one step ahead to become super-power country in the world. These targets are realistic, desirable and fully achievable. Our Prime Minister Narendra Modi has outlined his vision in 2015 for increasing India's renewable energy capacity from 30 GW to 175 GW which includes the boosting of solar power generation from mere 20 GW to 100 GW up to incoming year 2022. One of the world's largest solar power plant has been completed at Kamuthi in Tamilnadu, Southern India. This plant has 648 megawatt capacity and covers 10 sq km area. Also, India is very aggressive and has taken positive steps by announcing a goal to meet 40% of its energy need through renewable energy by 2030.

As every coin has two sides, there are some red flags to look our country as a 'solar super power country'.

There is no manufacturing facility for Silicon-wafers in India. Indian solar cell manufacturers import Si-Wafers for PV units from global sources and bulk copy sheet from China.

Looming and grid management issue.

Solar energy provides golden opportunity for India to move towards 100% Clean Energy in future while reducing poverty, ensuring energy security and reducing climatic change. Solar energy has a power to lead our country as a 'Solar Super Power Country'.

PUNITH.L
IV Year





Non Tech Article: “Innovation is the key determinant of economic growth and social welfare.”

“The courage to think differently, courage to travel the unexplored path, courage to invent makes one leader. Creativity and Innovation are the keys.” as said by Dr. A.P.J. Abdul Kalam. Innovation has always helping for sustainable growth and developing of social life it can bring change from black coal to precious diamond.

Everything that's working today is sometimes innovation. From man's being a hunter in early days to fire, wheel, electricity, radio, internet to the efforts of being able to reach the Mars, all is invention and innovation. Alan Turing with his innovative ideas cracked the ‘Enigma’ and ended the World War II and save millions of lives. Edison the great scientist has brought the world from ‘darkness towards the brightness’ by the innovative idea of electric bulb. The Na-tions history has a lot to teach about innovation for economic growth and social welfare which is not so good in current days.

Our Indian constitution also speaks about the innovation that is according to article 51 A of Indian constitution sub clause (h) speaks about developing scientific temper, humanism, the spirit of enquiry and reform. To promote and inculcate a spirit innovation. In India, numerous initiatives have been taken by Indian government as well as by industry or academic leaders to encourage and harness breakthrough technology in society. One of significant step is ‘India innovation initiative’ or i3 - a joint initiative of a Agilent, Department of Science and Technology, Government of India (DST) and confederation of Indian industry (CII).

India has a traditional knowledge base. The modern days Indian education system emphasize more on effort than on creativity. So there is a scope and need for impetus for innovation through education. Current and contemporary economies are more influenced by ideas and concepts, than they are governed by capital and labor. Empirical evidence across nations suggests the existence of a definite link between technological innovation and inclusive economic growth. Inclusive economic growth implies that the advantages of development are equitably distributed to all sections of the society. It ensures that the economic gains generated by growth are not monopolized only by the high and mighty, but the marginalized sections in the society also derive the benefits. We need more innovation through start ups for youth to turn from job seekers to employment generators.

Curriculum has to be revised as per the required means of the industry than just being a continuous input of static theory. Economic empowerment and innovation are going side by side by the means of innovative ideas like GST, PMJDY, digital payments, new technologies for agriculture, energy from Waste, effective use of renewable energy sources. E-governance and its transparency can enable business of Government speedy and income generation. The citizens need a broad mindset to accept new things, innovative and creative things with welfare and development through innovation. Barriers like caste and religion can melt down over a period of time.

Innovation is India's only one way out to address the pressing issues of social, economical development with the focus on uplifting the last person in line.

-M.YUVASREE (IV ECE)