

*Ingenious Electro-Cavalry*

**सतत**

*A Timeless Contact....!!!*

**2K15**



**Department of  
Electronics & Telecommunication**



**INTERNATIONAL CENTRE OF EXCELLENCE IN  
ENGINEERING AND MANAGEMENT, A'BAD.**

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## From the Add. Director's Desk

*“The great thinker Isaac Asimov has said “The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom ” and this is reason why we all are in cultural shock.*

*As a technocrats we should be sensitive to the happenings around us. So many farmers are committing suicide everyday in our region. We should be committed to change this scenario. Let us add science and technology at the door step of villagers.” I want to congratulate E & TC department for all the time and efforts put. I wish you all good luck for future.”*



**Prof. Dilip Gour**  
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ICEEM, A'Bad.

## HOD's Message

*“ First of all, I admire the initiative by the students of E&TC, also appreciate the efforts taken by IEC members to publish such a nice magazine within a very short time span & to be the pioneer in this regards. Some people will appreciate us, some will criticize us; in both cases we are the beneficiary, one will motivate us, while the other will improve us. The people who accept fair criticism are the ones who are genuinely interested in self improvement.”*



**Prof. H. L. Jadhav**  
H.O.D (E&TC)

**“ अंदाज कुछ अलग ही मेरे सोचने का है.  
मंजीलो का सभी को शौक, मुझे रास्ते का है...”**

## Editor's Desk

*“It gives me great opportunity to present the first issue of SANWAAD, the timeless contact .The past year was full of various activities by the students and faculty in academic, co-curricular, extra-curricular as well as research & developments. The formation of student council– IEC, a milestone in merging our thoughts will give us the chance to see the reflection of our progress and achievements. Wish you all best luck !”*

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## ◆ A FUEL-LESS GENERATOR

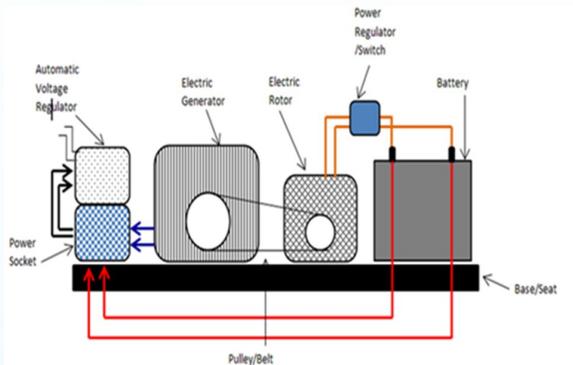


Fig. block diagram of Fuel-less generator

In day today life we need lots more of energy to run daily need equipments. If electricity is gone then we have seen the generator which produces energy run these equipments. But this is not an efficient method because, we need to buy fuel to make it work. So “a Fuel-less Generator” is a solution on it which completely reduces the cost of fuel. Not only this, but it also reduces the noise, being capable to produce great power than traditional fuel generator. We can call it as “A Fuel-less generator”.

A fuel less generator is a noiseless, smokeless, self charging device that generate electricity without using fuel. It produces power by means of energy recycling. The normal generators that use fuel are able to supply electricity due to the rotation of the alternator coil by the piston and shaft. The need for fuel in fuel-generator is to enable the piston to rotate the coil of alternator. So instead of using fuel to power the device to rotate the alternator, a car battery is used instead as fueling station.

Thus it reduces the cost of the fuel, Not only that we can handle it very easily, but also it is reliable than any other system. The cost will be same even for usage of 1hour or 4 hour but that will not happen for fuel generator it will require more fuel to use it for more time.

- Sachin Dukre (TE)

## ◆ PAPER BATTERY

### Introduction :

A paper battery is an energy storage device. It is used as a battery and also as a good capacitor. It is formed by combining two things which are carbon nano tube and the cellulose based paper.

### Definition of Paper battery :

Paper Batteries are made using a combination of nano tubes made from carbon and paper made from cellulose. The process to make paper batteries start with making a cathode and anode from manganese dioxide and zinc. These are then printed onto the cellulose paper. The nanotubes made from carbon are then added. The electrolyte is an ion based liquid solution.

### Working of Paper battery :

Once the paper is immersed in the ion based liquid solution, there is a chemical based reaction between the liquid and the electrodes, in this case the nanotubes. The electrons which are generated move from the cathode to the anode to generate electricity. The best way to increase the output is to stack different paper batteries, one over the other.

### Use of paper battery :

- It has a paper thin sheet of cellulose and it is infused with the carbon nanotubes. It is acting as an electrodes. And it also acts as a good conductor storage device.
- It provides long steady power by functions as a superconductor and a lithium ion battery.
- It can be twisted, folded, rolled or it can be cut into your needed shapes without any loss in its efficiency and in its output.
- It is light weight due to the nanotubes and it is used in the portable electronic devices and in automobile toys, such as remote appliances also

### Paper battery advantages :

- Used as both battery and capacitor.
- Shaped for different applications.
- Can be easily disposed.
- Available in different sizes.
- It is flexible.
- Long lasting

-Pooja Jangam(BE)

## ◆ Wi-Vi TECHNOLOGY

Scientists are developing a new technology that could give us 'X-ray' vision with the ability to track moving humans hiding in closed rooms or behind walls. Researchers at Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory are using low-cost wi-fi technology to develop the system that spots movement of people in rooms or behind walls.

"We wanted to create a device that is low-power, portable and simple enough for anyone to use, to give people the ability to see through walls and closed doors," said Dina Katabi, a professor in MIT's Department of Electrical Engineering and Computer Science. Researchers have long attempted to build a device capable of seeing people through walls. However, previous efforts to develop such a system have involved the use of expensive and bulky radar technology that uses a part of the electromagnetic spectrum only available to the military.

The new system, called "Wi-Vi", is based on a concept similar to radar and sonar imaging. But in contrast to radar and sonar, it transmits a low-power wi-fi signal and uses its reflections to track moving humans. It can do so even if the humans are in closed rooms or hiding behind a wall.

As a wi-fi signal is transmitted at a wall, a portion of the signal penetrates through it, reflecting off any humans on the other side.

However, only a tiny fraction of the signal makes it through to the other room, with the rest being reflected by the wall, or by other objects. "So we had to come up with a technology that could cancel out all these other reflections, and keep only those from the moving human body," Katabi said. To do this, the system uses two transmit antennas and a single receiver. The two antennas transmit almost identical signals, except that the signal from the second receiver is the inverse of the first.

As a result, the two signals interfere with each other in such a way as to cancel each other out. Since any static objects that the signals hit - including the wall - create identical reflections, they too are cancelled out by this nulling effect.

In this way, only those reflections that change between the two signals, such as those from a moving object, arrive back at the receiver," researcher Fadel Adib said. "So, if the person moves behind the wall, all reflections from static objects are cancelled out, and the only thing registered by the device is the moving human," Adib added. Once the system has cancelled out all of the reflections from static objects, it can then concentrate on tracking the person as he or she moves around the room. Wi-Vi will be presented at the Sigcomm conference in Hong Kong in August.

- Mayur Kale (BE)

## ◆ CLOUD COMPUTING

### **I**ntroduction:-

Cloud computing is the delivery of computing services over the Internet. Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include online file storage, social networking sites, webmail, and online business applications. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications.

### **C**haracteristics:-

The characteristics of cloud computing include on-demand self-service, broad network access, resource pooling, rapid elasticity and measured service. On-demand self-service means that customers (usually organizations) can request and manage their own computing resources. Broad network access allows services to be offered over the Internet or private networks. Pooled resources means that customers draw from a pool of computing resources, usually in remote data centres. Services can be scaled larger or smaller; and use of a service is measured and customers are billed accordingly.

### **Service models:-**

The cloud computing service models are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS). In a Software as a Service model, a pre-made application, along with any required software, operating system, hardware, and network are provided. In PaaS, an operating system, hardware, and network are provided, and the customer installs or develops its own software and applications. The IaaS model provides just the hardware and network; the customer installs or develops its own operating systems, software and application

### **Deployment of cloud services:-**

Cloud services are typically made available via a private cloud, community cloud, public cloud or hybrid cloud. Generally speaking, services provided by a public cloud are offered over the Internet and are owned and operated by a cloud provider. Some examples include services aimed at the general public, such as online photo storage services, e-mail services, or social networking sites. However, services for enterprises can also be offered in a public cloud.

In a private cloud, the cloud infrastructure is operated solely for a specific organization, and is managed by the organization or a third party. In a community cloud, the service is shared by several organizations and made available only to those groups. The infrastructure may be owned and operated by the organizations or by a cloud service provider.

### **Why cloud services are popular:-**

Cloud services are popular because they can reduce the cost and complexity of owning and operating computers and networks. Since cloud users do not have to invest in information technology infrastructure, purchase hardware, or buy software licences, the benefits are low up-front costs, rapid return on investment, rapid deployment, customization, flexible use, and solutions that can make use of new innovations. In addition, cloud providers that have specialized in a particular area (such as e-mail) can bring advanced services that a single company might not be able to afford or develop.

Some other benefits to users include scalability, reliability, and efficiency. Scalability means that cloud computing offers unlimited processing and storage capacity. The cloud is reliable in that it enables access to applications and documents anywhere in the world via the Internet. Cloud computing is often considered efficient because it allows organizations to free up resources to focus on innovation and product development.

### **Conclusion:-**

Cloud computing offers benefits for organizations and individuals. There are also privacy and security concerns. If you are considering a cloud service, you should think about how your personal information, and that of your customers, can best be protected. Carefully review the terms of service or contracts, and challenge the provider to meet your needs.

-Mahesh Natkar (BE).

## **◆ The Importance of Rare Earth Elements**

**W**hat is rare earth and it uses for? According to the definition of Wikipedia, rare earth is a term coined mainly for rare earth elements that are certain groups of elements in the periodic table. Rare earth also consists of rare minerals that are made up of rare earth elements along with rare earth magnet. China is one of the largest rare earth elements producers in the world. In recent days, China is becoming more reluctant to provide these elements to the worldwide investors that are causing a huge disturbance on the global scale. It is essential to first understand these rare earth elements and their primary uses in order to realize their worldwide importance.

### **What are rare earth elements?**

Rare earth elements basically consist of 17 rarely found elements that are present in the periodic table. Out of these 17 rare elements, 15 elements come under Lanthanide series. These 15 Lanthanides and 2 other elements, Scandium as well as Yttrium are together known as rare earth elements.

In Lanthanides series, the 15 elements are Cerium, Lanthanum, Neodymium, Samarium, Gadolinium, Dysprosium, Erbium,

In Lanthanides series, the 15 elements are Cerium, Lanthanum, Neodymium, Samarium, Gadolinium, Dysprosium, Erbium, Ytterbium, Lutetium, Thulium, Holmium, Terbium, Europium, Promethium, and Praseodymium.

### **Which are the biggest rare earth elements producers in the world?**

Very few countries in the world have abundant resources of rare earth elements. Amongst the countries that produce rare earth elements, China is the dominant player in the world. It is believed that the largest rare earth elements deposit lies in the Bayan Obo area of China. It has already been found out that out of 95.27 million tons of the world's rare earth elements resources; China has more than 47 million tons of rare earth oxides. Other important rare earth elements producers in the world are Canada, India, Malaysia, Australia, USA, and Brazil. China, USA and Commonwealth countries have the largest rare earth elements reserves in the world.

### **What is rare earth uses?**

Rare earth elements have several industrial uses worldwide. The primary rare earth uses are in the electronics and electrical fields. Most of the above mentioned rare earth elements and their alloys are being used in different types of electronic devices such as rechargeable batteries, computer memory, cell phones, DVDs, magnets, car catalytic converters, fluorescent lighting, and several other instruments.

Today, the worldwide demand for all the above-mentioned electronic devices and instruments has quadrupled. And to fulfill this ever-increasing global demand, it is essential to have more supply of rare earth metals. There are several industries such as petroleum refining, glass polishing, chemical catalysts, metallurgy, catalytic converters, permanent magnets production, television and monitors, etc. where these rare earth elements need in abundance. Rechargeable batteries are built only with the help of rare earth metals and alloys. These batteries are mainly used to power up several electrical and electronic devices, digital cameras, computers, laptops, hybrid vehicles and electric vehicles. Other important usage of rare earth metals is in the industries that make use of phosphors, catalysts, and polishing compounds. Such types of catalysts, phosphors and polishing compounds are then used in illuminating screens of several electronic devices along with optical quality glass. Air pollution control is also possible with

these catalysts and phosphors made up of rare earth elements.

The most significant rare earth uses are in the military and national defense field. Lanthanum metal is used to make night vision goggles. Europium is used in building phosphors and fluorescent material that is used in monitors and lamps. Neodymium element is mainly used in making guidance systems, laser range finders and in making efficient defense communication systems. Erbium metal is very important part of amplifiers that are used in fiber-optic data communication. Samarium element is mainly used in developing white noise stealth technology as well as precision-guided weapons. Permanent magnets are also built with the help of Samarium metal.

### **What is the future of global market that has increasing demand for rare earth elements?**

The global demand for several electronic devices, instruments, defense equipment, magnets, and pollution control catalysts is continuously rising every year. China is still the most dominant player in the production of rare earth metals and alloys. China has also restricted the export of these valuable elements to some extent. This emphasizes the need to find more natural resources of rare earth elements across the globe.

- Priyanka Mirgane(BE)

### **♦ To Overcome Chinese Monopoly**

The Indian Prime Minister was forced to cancel his planned visit to Japan in month of November 2014 after the Japanese government dissolved the lower house of parliament and announced early elections. An important trade pact in respect of rare earth materials was proposed to be signed during the visit. Fortunately, the cancellation of the Indian Prime Minister's visit has not come in the way of the realisation of this pact. On November 16, a trade pact allowing the import of 4100 tonnes of Rare Earth Elements (REE) material (amounts to roughly 10 to 15 per cent of Japan's peak annual demand) from India has been signed by the two countries.

China presently controls almost 97 per cent of the world's REE market and has developed a monopolistic hold on it. Japan is the world's largest importer of REE, mainly b'cos

of its major industrial base in electronics and the consequent demand for a significant amount of REE. REEs are required for computers, laptops and televisions. They also have significant usage in mobile telephony and Magnetic Resonance Imaging (MRI) equipment. Countries are over-protective about imports and exports of REEs because of their utility in strategic sectors such as missiles. For sometime now China has been found linking exports of REEs to Japan with territorial disputes.

Naturally, Japan has been on the lookout for alternate supply chains. Sensing this opportunity India is trying to fill the void, at least partially.

REEs include elements like Lanthanum, Cerium, Praseodymium, Erbium, Gadolinium, etc. China has been effectively controlling the global REE market for many years. In 2012, it published the first ever White Paper on REE titled "Situations and Policies of China's Rare Earth Industry", which highlighted the need for the 'sustainable and healthy development of this industry'. But in reality China has not followed the 'healthy' trend and has begun to use REE exports to Japan as a diplomatic lever especially over their maritime territorial dispute.

India is known to be the second largest producer of REEs. According to one estimate made in 2010, China produced 1.3 lakh tonnes of REEs while India's output was 2,700 tonnes. India, in spite of being a small player in comparison with China, has been in the business of REE since the 1950s when Indian Rare Earths Ltd. was established. The recent agreement between Japan and India on REE could also be viewed as a continuation of their existing relationship in the field of REEs. Japan has already made investments in this regard in India. A subsidiary of Toyota Tsusho called Toyotsu Rare Earths India Pvt. Ltd. is based at Vishakapatnam, Andhra Pradesh, and is involved in the production of some rare earth elements. The company operates a monazite sand rare earth production base and is involved in the making of rare earths such as neodymium, lanthanum and cerium. It receives the supply of monazite sand from Indian Rare Earths Ltd.

The most interesting aspect of India and Japan coming together is that they are also proposing to engage with other states where REEs are available for excavation. India and Japan want to develop a joint venture (JV) in third countries, particularly in under-developed states.

their supply sources. The rare-earth resources in Afghanistan (Helmand province) are estimated to be one million tonnes; and, particularly for India, engagement in Afghanistan has considerable strategic significance too.

With regard to Kazakhstan too, India and Japan aim to undertake joint development of rare-earth assets. All these efforts could assist India and Japan to develop a global market for REEs.

Japan is aware of India's huge reserves of REEs in Odisha. Recently, Indian Rare Earths Ltd., which comes under the Department of Atomic Energy, has sought clearance for rare earths mining from sand in the coastal stretch of around 2,500 hectares at Bramhagiri (Puri district). Japan has earmarked a \$1.5-billion corpus for developing alternative sources of rare earths and India needs to attract Japanese investment.

Both India and Japan understand that the REE sector offers commercial, strategic and diplomatic advantages. At the same time, ensuring the regular supply of REEs is going to be a time consuming process. If they invest today in various projects then it could take approximately five years to double or triple output. Over the years many countries in the world had stopped making investments in the mining of REEs because financially it was more viable to import from China. However, this had led to China developing a monopoly in this sector.

For countries like India there is much to learn from the REE experience. It is important to appreciate that with regard to critical materials and major minerals it is essential to plan thoughtfully. There should be minimal dependence on other countries with regard to the strategic materials required in the energy, aerospace, nuclear and defence sectors. Also, there is a need to constantly monitor the ongoing trends in areas like semiconductors, silicon technology, chips manufacture, thin films, nanotechnologies, etc. This could assist in undertaking mid-course corrections in policies with respect to strategic materials, if necessary. The presence or absences of strategic materials do have both short-term and long-term impacts on the country's economy as well as on military readiness.

## ◆ Career Guidance For Electronics Engineers

This article provides Career Guidance, Choices, Career development strategies, Job Opportunities, Salary and Skills Required in the field of Electronics and Communication for ECE, MSc students to make a successful career. Electronics and Communication is one of the old and best course in the field of engineering. Electronics and Communication covers a vast area in the field of engineering. It is not possible for a person to become an expert in all the fields. So one should choose one or two areas of interest from the list of sub fields given below, which is close to your heart. Also, to keep you updated about latest technologies and inventions in this domain, go through IEEE articles. Now a days, a lot of Engineers after completing ECE, opt for IT Jobs. Electronics engineers who opt for IT jobs, can go through the article on Career Guidance for Computer Science Engineers.

Recent recession had a big impact on the type of careers we choose. It's wise to go for a career that can withstand market conditions like recession rather than going for career change. That doesn't mean that we need to choose a career which we are not passionate about. So when you make a career choice, the choice should be interesting and reliable. In the following sections, we will look into various Career Opportunities, Choices and skills sets needed for a Electronics and Communication engineers.

### Where to start ?

Engineers and MSc Electronics students get hired by companies during campus recruitment or during walk ins conducted directly by companies or by consulting firms. Since the no of openings for freshers in the field of Electronics and Communication is far less compared to the no of students passing out every year, it's very important to get placed during campus recruitment and cross your first hurdle in your career. Students can opt for higher studies if you don't get placed during campus recruitment. Even if you get placed, to get noticed for your work as a fresher and get promoted is difficult, because companies hire freshers in large numbers.

So to give an incremental push to your career, it is good to have MS in Electronics and Communication. We will discuss about advantages of Higher Education in later sections.

While choosing colleges for Engineering or MS in Electronics and Communication, look for colleges which offers highest placement. Another important aspect while choosing a college is the lab facility they offer. Unlike computer science, which requires only computer and software, ECE departments requires extensive electronics circuits, micro processor and communication lab. Hands on experience in labs will help you get a good exposure in this field. So make a detailed inquiry about the lab facility before joining.

### How to get hired during Campus or off Campus Recruitment ?

Placement's takes place during penultimate year or final year of the course. If you didn't get placed during campus recruitment, try to get jobs via consultancies or during off Campus recruitment. Placements are done in two stages. In the first stage there will be Aptitude Test and Technical Test. So you should be well trained in aptitude test. Technical Test will be mainly based on Electronics Circuits, Communication, Microprocessor and digital electronics .

You should try out executing Microprocessor programs rather than learning from book. This helps you to get hand on experience and help you to answer questions on troubleshooting, execution methodology and program solving skills.

Based on the performance in the first stage, you will be selected to second stage. In the second stage, there will Group Discussion (GD) followed by Face to Face Technical Interview and HR Interview. In the group discussion, make sure that you are active and crisp in conveying your ideas. Please don't enforce you ideas on others during GD. Technical interview will be based on what you learned in your course. Interviewer look's for your knowledge on a topic as well as your level of confidence. HR Interview will be based on your personality.

If you are not getting placed, try for internships. Internship helps you gain experience and get paid.

### **Choosing right company for a bright Career ?**

Electronics and Communication Products and Solutions are used in various industries across the world. Major Industries which offer Jobs for ECE engineers are

- ◇ Electronics Circuit Design
- ◇ Signal processing
- ◇ Wireless Communication
- ◇ Optical Communication
- ◇ Robotics
- ◇ Embedded Systems
- ◇ Analog electronics
- ◇ Power Electronics
- ◇ Solid State Physics
- ◇ Control systems
- ◇ VLSI
- ◇ Defense
- ◇ Nanotechnology
- ◇ Mobile Companies

### **TOP Companies which offer JOBS for ECE engineers are**

- ◆ Texas Instruments
- ◆ Intel
- ◆ AMD
- ◆ CISCO
- ◆ IBM
- ◆ Samsung Electronics
- ◆ Sony
- ◆ Toshiba
- ◆ Philips Semiconductors
- ◆ Nokia
- ◆ Nvidia
- ◆ HP
- ◆ LG Electronics
- ◆ Bharat Heavy Electrical's Limited (BHEL)
- ◆ Electronics Corporation of India Limited (ECIL)
- ◆ National Thermal Power Corporation (NTPC)
- ◆ Wipro
- ◆ HCL
- ◆ ISRO
- ◆ SYNTEL
- ◆ WIPRO

- Arati Wakchoure (BE)

## ◆ SWARM ROBOTICS

“When everybody thinks alike, nobody is thinking much”, is so rightly said. Think out-of-the-box and you potent some innovation or maybe an invention; credits to your gamut. To speak in line with the concept here, swarming population; not always, is a bad idea.



How about rescuing some disaster hit zone with swarming intelligent population or maintaining a warehouse with moving, self-operational shelves?? A great idea indeed. Well, this is all about a seemingly new concept of **swarm robotics**. Everybody, in active adolescence or passive maturity may be, must have noticed the movement of ants or similar insects. It is awesomely coordinated and aligned with respect to each other. They accomplish their task collectively by keeping an eye on each other's movement. This type of coordinated movement in insects is termed as “**SWARM**” and when this movement is performed by some group of robots then in technical terms it is called as “swarm **robotics**” inspired by colonies of ants and swarms of bees. Simply put, Swarm Robotics is a multi robot system which consists of a large number of simple, physical autonomous robots. It was first coined by Gerardo Beni; professor at University of California and Jing Wang in 1989 in order to impart a notion of swarm intelligence to cellular robotic systems.

-Asmita Khatale (TE)

## :जिवनसाथी :

आज शिकारीचा सातवा दिवस होता. माझे पाय त्या आदिवासी गावाजवळील झुडुपात उभ्या असलेल्या हरणाला पाहून स्थिरावले. त्या हरणावर मी धनुष्याबाणाने नेम धरला. पण मी जसे त्या

हरणाच्या डोळ्यात पाहतो, त्या क्षणी माझ्या हातातील धनुष्याबाण निखळला गेला. गेले सहा दिवस माझ्या हातातून हेच घडत होते. याचे कारण मी त्या आदिवासी गावातील ओळखीच्या व्यक्तीस विचारता तो म्हणाला, हे हरिण गावात असलेल्या ढोलचा आवाज ऐकण्यासाठी या वेळी त्या ठिकाणी येतं. थोड्या आवाजाला घाबरून पळून जाणारा हरिण ढोल ऐकायला येते. हे त्या गृहस्थाच बोलण मला अतिशयोक्तीपूर्ण वाटलं हरणासारख्या भित्र्या प्राण्यात इतके साहस येणे कसं शक्य आहे? त्याच्या डोळ्यात तो कोणता भाव का असतो की जो पाहताच माझ्या हातातील धनुष्याबाण निखळायचा? अशा भावळलेल्या स्थितीत मला पाहताच तो गृहस्थ म्हणाला, खरं सांगु का हे हरिण आम्ही वस्तीत असलेला ढोल पाहण्यासाठी येत. त्याच्यातील हे साहस व हे कारुण्य या सर्वांच हेच कारण आहे. या ढोलवरिल कातड हे त्याच्या जीवनसाथीच आहे.

रश्मी राठोड

( B.E.)

## प्रेम

प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
दुसरं तिसरं नुसन ऐकमेकांत गुंतण मेण असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
नारेत नार ठेवून बघण सेम असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
ऐकमेकांसाठी सगळ करण डील असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
आयुष्यात येणारा प्रत्येक क्षण हा गेम असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
त्यासाठी सर्व काही करणं पणं असत.  
त्याने बाललेला शाब्द आपल्यासाठी मोल असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
त्याच्या कपड्याचे कॉम्बीनेशन हे आपल्यासाठी सर्पराई असतं.  
प्रेम म्हणो, प्रेम म्हणो प्रेम असतं.  
त्याने दिलेला प्रॉमिस आपल्यासाठी आयडीया कनेक्शन असतं.

पुजा यादव

( S.E.)

## “सखा”

एकदा एक स्त्री भयचकित अवस्थेत एका उंच आणि धोकादायक पुलाच्या टोकाला उभी असते. खूप घाबरलेली आणि अगदी एकटी... तिचा होणारा नवरा.... आयुष्याचा जोडीदार असतो पुलाच्या दुसऱ्या टोकाला.... तिला तो दिसत नसतो आणि त्याला ती त्याने याव म्हणून ती खूप साद घालते त्याला... पण त्याच्याकडून प्रतिसाद शून्य... घाबरलेली बावरलेली ती पुन्हा पुन्हा हाक मारत राहते.... आर्ततेने त्याच उत्तर येत.  
“मी बिझी आहे तू कर ना प्रयत्न स्वतः च, जथे तिथे मीच हा हवा तुला.. स्वतः च काम स्वतः करायला शिकणाराती दुखवते.. मोडते पण लगेच सावरते आणि हिमतीने पाउल टाकते त्या धोकादायक उंचच्याउंच पुलावर... कशीबीशा पार करते तो पूल मनातली अपमानाची धग दडपून मात्र त्याला बघताच बांध फुटून रडत धाव घेते त्याच्याकडे कारण.... कारण पुलाची मोडलेली बाजू सावरलेली असते त्याने आपल्या खांदयावर ... तिच्या सुरक्षितेसाठी... कधी कधी स्त्रियांना वाटते की, प्रियकर गप्प गप्प का? काहीही मदत नाही करत.... भलेही तो काही करतांना दिसत नसेल..... पण जेव्हा तुम्ही आत्मविश्वास गमावतात तेव्हा तो कदाचित पुलाची दुसरी बाजू सावरत असेल... असा असतो तो. पुरुष कोण आहे? पुरुष हा देवाने बनवलेली अशी एक सुंदर गोष्ट आहे, जो आपल्या अगदी कमी वयापासून कॉप्रमाईज करायला चालू करतो तो आपल्या हिश्यातील चॉकलेट सुध्दा आपल्या बहिणलाला देतो. तो आपले सर्व पॉकेट मनी अशा मुलीसाठी खर्च करतो जिच्या चेहऱ्यावरील हसू पाहायला त्याला आवडते. तो आपले पूर्ण तारुण्य आपल्या बायको आणि मुलांच्या सुखासाठी रात्री बेरात्री काम करून कुठल्याही तक्रारीविना खर्च करतो. तो त्यांच्या भविष्यासाठी बँकेतून लोन आणि कर्ज घेतो आणि जन्मभर ते फेडत बसतो. तो खूप संघर्ष करतो आणि तरीही त्याच्या आईचे, बायकोचे आणि बॉस चे आरडे खातो शेवटी त्याचे आयुष्य दुसऱ्यांसाठी झटण्यातच संपते. आईचे ऐकले तर त्याला ममास बॉय बोलतात. आणि बायकोचे ऐकले तर त्याला बायकोचा गुलाम बोलतात प्रत्येक पुरुषाचा आयुष्यात रिस्पेक्ट करा. कारण तुम्हाला माहित नसेल त्याने आयुष्यात तुमच्यासाठी कुठले बलिदान दिले असते.

मोहिनी चौर

( B.E.)

Forwarding something interesting: Regarding those who believe and those who don't believe in God ! Very interesting. It stimulates our lateral thinking :This lovely parable is from "Your Sacred Self" by Dr. Wayne Dyer. In a mother's womb were two babies. One asked the other: "Do you believe in life after delivery?" The other replied, "Why, of course. There has to be something after delivery. Maybe we are here to prepare ourselves for what we will be later." "Nonsense" said the first. "There is no life after delivery. What kind of life would that be?"

The second said, "I don't know, but there will be more light than here. Maybe we will walk with our legs and eat from our mouths. Maybe we will have other senses that we can't understand now." The first replied, "That is absurd. Walking is impossible. And eating with our mouths? Ridiculous! The umbilical cord supplies nutrition and everything we need. But the umbilical cord is so short. Life after delivery is to be logically excluded." The second insisted, "Well I think there is something and maybe it's different than it is here. Maybe we won't need this physical cord anymore." The first replied, "Nonsense. And moreover if there is life, then why has no one has ever come back from there? Delivery is the end of life, and in the after-delivery there is nothing but darkness and silence and oblivion. It takes us nowhere." "Well, I don't know," said the second, "but certainly we will meet Mother and she will take care of us."The first replied "Mother? You actually believe in Mother? That's laughable. If Mother exists then where is She now?" The second said, "She is all around us. We are surrounded by her. We are of Her. It is in Her that we live. Without Her this world would not and could not exist."

Said the first: "Well I don't see Her, so it is only logical that She doesn't exist." To which the second replied, "Sometimes, when you're in silence and you focus and you really listen, you can perceive Her presence, and you can hear Her loving voice, calling down from above."

**Bhavna Chothve**  
( B.E.)

॥ एक सत्य ॥

संकटाला कधी कंटाळायच नसत,  
त्याच्या समोर जायचं असतं ॥  
कोणी नावं ठेवली तरी थांबायचं नसत,  
आपल चांगल काम रेटायचं असत ॥  
अपयशाने कधी खचायचं नसतं,  
जिद्दीचं बळ वाढवायचं असतं ॥  
नाराज मुळी व्हायचं नसतं,  
चैतन्य सदा फुलवायचं असतं ॥  
पाय ओढले म्हणुन परतायचं नसतं,  
पुढे आणि पुढेचं जायचं असतं ॥  
लोक नींदेला घाबरायचं नसतं,  
आपल सामर्थ्य दाखवायचं असत ॥  
जिवनात खुप करण्याजोगं असतं,  
आपल फक्त तिकडे लक्ष नसतं ॥

**जयंत धाटबळे**  
( T.E.)

“ जीवन ”

बोलतांना जरा जपुन बोलावं  
कधी शब्दही अर्थ बदलतात  
चालतांना जरा जपुन चालावं  
कधी रस्ते ही घात करतात  
झुकतांना जरा जपुन झुकाव  
कधी आपलेच खंजीर खुपसतात  
ओळखतांना जरा ओळखावे  
कधी माणसे ही रंग बदलतात  
पाऊप टाकतांना जरा जपुन टाकाव  
कधी फुले ही काटे बनतात  
मागतांना जरा जपुन मागावं  
कधी आपलेचं नकार देतात  
नाते जोडतांना जरा जपुन जोडावे  
कधी नकळत धागे तुटतात

**रविंद्र आवारी**  
( T.E.)

# "Arts & Students' Gallery"

## IEC Inauguration



## Industrial Visits



Industrial Visit, BSNL Aurangabad: 8<sup>th</sup> Oct. 2014



Industrial Visit at IAR, Aurangabad.: 12<sup>th</sup> Oct. 2014



Industrial Visit, GMRT Project, Tata Institute of Fundamental Research, : 31<sup>st</sup> Oct. 2014



Industrial Visit, Earth Station Mhaismal : 6<sup>th</sup> March 2013

# Departmental Activities



Group Discussion



Quiz competition



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Expert lecture by Mr. Harshwardhan Chitale



Expert lecture by Mr. K. Shreedhar Rao

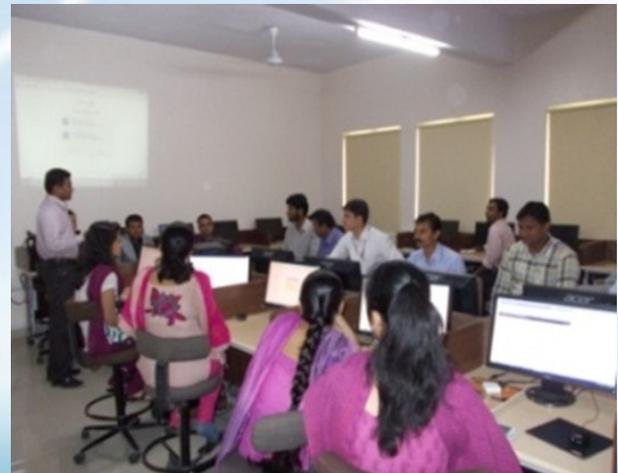


Students of Third year enjoying life at ICEEM

## Technical Workshops



### Workshop on “Network Theory and Design”



### Workshop on “Introduction to Android 2.3 based Applications Development”



### State level workshop on “Exploring the World of Electromagnetics”



Arti Hangargekar(SE)



Tanaji Sirsat(BE)



Pranita Vyawahare(TE)



Sketches drawn by Akash Sable (TE)



Group Day



Group Day



Cricket Winner Team (2014 -15)



Teachers Day



BE Class Students with Faculty



TE Class Students with Faculty



SE Class Students with Faculty



IEC Committee with Faculty

## *“ Departmental Activities ”*

Sr no.	Title	Date	Special Guests	Program highlights
1	Inauguration of Student Asso. Ingenious Electro-Cavalry (IEC)	30/08/14	Mr. Vijay Akot, Owner, Integrated Automation and Robotics, A'bad.	Chief guest discussed about industrial automation and how to increase employability.
2	Innovations and Entrepreneurship	16/08/14	Mr. Harshvardhan Chitale. (CEO – HCL Infosystems Ltd.)	Presented a valuable & enthusiastic expert talk on “Innovations and Entrepreneurship”
3	Teachers' Day	05/09/14	Director, Dr. P. A. Deshmukh	Director sir and all faculty accepted the wishes from the student in the event organized by the students actively.
4	Engineers' Day Celebration	17/09/14	Judges : Dr. Ardhapurkar, (Dean Engg.) Prof. H. L. Jadhav, (Asst. Prof. E & TC)	Poster competition was arranged by the committee.
5	Guest Lecture on “Soft Skills” by K. Sreedhar Rao	12/02/15	Mr. K. Sreedhar Rao, KILT Institute, Aurangabad.	Add. Director Prof. Dilip Gour, welcomed the chief guest. All departmental HODs along with students attended the lecture. The event was sponsored by The Institute of Engineers(India), A'bad centre.
6	Test on “Computer fundamental & C Language”	13/02/15	Amol Athwale, Seed Infotech Aurangabad	A Technical test on “Computer fundamental & C Language” was organized by the department for all the students of E&TC.
7	Aptitude test Group Discussion Debate & poster competition	14/02/15 & 16/02/15	--	Event sponsored by The IEI(India), Aurangabad centre. Aptitude test, Group Discussion, Debate and Poster competition was held. All the students of E&TC department actively participated in the events.

\* **Technical Workshops Organized by Department**

Sr. No.	Title	Recourse Persons	Organizing Secretary	Month & Year
1	State level workshop on "Exploring the World of Electromagnetics"	1. Dr. S. S. Ardhapurkar, Dean Engg., ICEEM, A'bad. 2. Dr. Ravinder Bhadraiah Yerram, Professor, (PICT),Pune. 3. Prof. R. P. Chaudhari, Professor, Govt Coe of Engg,A'bad.	Prof. Hemant L. Jadhav	16/01/15. & 17/01/15
2	A one day workshop on "Introduction to Android 2.3 based Applications Development"	Prof. Ashutosh Makone, MIT, A'bad	Dr. S. S. Ardhapurkar	22/03/14
3	A two days' tutorial workshop on "Network Theory and Design"	Dr. Vijay Pandhripande, V.C. Dr. BAMU, A'bad	Dr. S. S. Ardhapurkar	01/07/13 & 02/07/13

\* **Industrial Visits Arranged by Department:**

Sr. No.	Date	Visited Industry / Institute / Place
1	08/10/14	BSNL Office Chikalthana, Aurangabad
2	12/10/14	Integrated Automation & Robotics, E-122, Behind Siemens, MIDC, Waluj, Aurangabad
3	31/10/14	GIANT METERWAVE RADIO TELESCOPE (GMRT) National Center for Radio Astrophysics, Tata Institute of Fundamental Research, GMRT Project, Post Bag No. 6, Narayangaon, Tal-Junnar, Dist - Pune, State – Maharashtra.

\* **Expert Lectures attended by Faculties of E&TC (Organized by ICEEM):-**

Sr. No.	Title/Topic	Expert	Date
1	Changing trends in higher education	Dr. Madhawrao Chitale	12/6/2014
2	New trends in Technology	Mr. Anil Bhalerao	13/6/2014
3	Faculty orientation program	Dr. Madhawrao Chitale	04/08/2014
4	Technical Communication	Dr. V. L. Dharurkar, BCUD Director, Dr. BAMU, Aurangabad.	14/2/2015

**\* International/ National Research papers Published by Faculty Members:**

<b>S. N</b>	<b>Title of Paper</b>	<b>Authors</b>	<b>Name of Journal</b>	<b>Issue No.</b>	<b>M&amp; Y</b>
1	International research paper on “Poka-Yoke System for shaft assembly of two wheeler”	Prof. H. L. Jadhav Prof. K.R. Urgunde Prof. A. J. Pawar	IJESRT - International Journal Of Engineering Sciences & Research Technology	ISSN: 2277-9655 Scientific Journal Impact Factor: 3.449	Jan 15, 2015
2	International research journal paper on “A review on gain & bandwidth enhancement techniques of microstrip patch antenna.”	Prof. K.R. Urgunde Prof. H. L. Jadhav Prof. A. J. Pawar	IJESRT - International Journal Of Engineering Sciences & Research Technology	ISSN: 2277-9655 Scientific Journal Impact Factor: 3.449	Dec 30, 2014
3	A Comparative Study of Different Inpainting Techniques.	Prof. A. J. Pawar	IJESRT - International Journal Of Engineering Sciences & Research Technology	ISSN: 2277-9655 Scientific Journal Impact Factor: 3.449	Dec 30, 2014
4	Application of mechatronics in design and control of a quad- copter flying robot for aerial surveillance.	Hemant L. Jadhav	Excel Journal of Engineering Technology and Management Science An International Multidisciplinary Journal)	SSN 2277-3339 Vol. I No. 4	Jan-Jun 2013 - 14
5	Review on Implementation of Digital Music Equalization (Echo & Reverberation) Model Using Simulink and TMS320C6713DSK	Mr. S. N. Upasani, Ms. M.R. Dhotre	International Journal of Computer Science Trends and Technology	Volume No 2 Issue 2	Mar-Apr 2014

\* **Conferences/Workshops attended by Faculty Members:**

<b>S N</b>	<b>Title</b>	<b>Name of Faculty</b>	<b>Organized by</b>	<b>M&amp;Y</b>
1	State level workshop on “Exploring the World of Electromagnetics”	All Faculty members	ICEEM,A’bad	16 <sup>th</sup> and 17 <sup>th</sup> Jan 2015.
2	MATLAB and Simulink for Engineering Education	Prof. K. R. Urgunde Prof. S. N. Upasani Prof. A. J. Pawar Prof. Ansar Ahmed	Mathworks India	7th Nov 2014
3	Workshop on Computer Networking	Prof. K. R. Urgunde	IIT Bombay	July 2014
4	Introduction to Android 2.3 based Applications Development	Prof. Hemant L. Jadhav	ICEEM,A’bad	Mar 2014
5	International Conference on Science & Technology, Presented paper on “Design and Control of a Quad- copter Flying Robot for Aerial Surveillance”	Prof. Hemant L. Jadhav	SPVP's S. B. Patil College of Engineering, Indapur, Pune	Feb. 2014
6	“Testing & Measuring Instruments” Program	Prof. S. N. Upasani	Sciencetech Technologies Pvt. Ltd., Indore.	January 2014
7	Workshop on Leveraging Expertise of Technical Teaching	Prof. S. N. Upasani	Government College of Engineering, Jalgaon	Sept. 2013
8	Workshop on “Network Theory and Design”	Prof. Hemant L. Jadhav	ICEEM,A’bad	July 2013
9	Presented paper on “Artificial intelligence and fuzzy logic”	Prof. E. K. Ahuja	Pimpari chinchwade engg. College, pune.	March, 2013

Being Traditional



# गृहीणी कॉर्नर

प्रो.प्रा.अंजली मुळावेकर

मो : ९४२१०५६२६८

८८०५७५६२१८

पारंपारिक रेडिमेड नऊवार साडी  
कद ( सोळवे ), धोती, परकर, पोलके शिऊन मिळेल.

पंकजा मुंडे महिला बचत गट

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हळदी पावडर, धणे पावडर, चिप्स, चकली, योग्य दरात मिळेल.

सर्व प्रकारच्या घरगुती ऑर्डर स्विकारल्या जातील.



आर.एक्स. ५/२० दिपज्योती हौ. सोसायटी, लोकमान्य चौक, बजाजनगर, औरंगाबाद. मो : ९४२३७०६०५३ / ९०९६८७३४३०

## कैलास राऊत

महाराष्ट्र परिट ( धोबी ) सेवा मंडळ ( महाराष्ट्र प्रदेश उपाध्यक्ष - युवा )

संत गाडगेबाबा लाँडीधारक संघटना ( अध्यक्ष मराठवाडा )

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मातोश्री निवास : कैसाल ड्रायक्लिनर्स, एन-७, एफ-२८/५, आयोध्यनगर,  
छत्रपती शिवाजी महाराजांच्या पुतळ्यासमोर, सिडको, संभाजीनगर, मो : ९८९०६२५४७३

## गुरुकृपा करसाण मार्ट



फास्ट फुड, चाईनीज, पावभाजी, मॉकटेल,  
शिताफळ क्रिम, मिसळ पाव, दाबेली, वडापाव

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शाखा : उद्योगश्री कॉम्पेक्स, उलकानगरी गारखेडा, औरंगाबाद. फोन : ०२४०-२३४०२३८

उद्योग आयकॉन, ओ.अॅसीस चौक, नगर रोड, पंढरपूर, औरंगाबाद. मो: ८२३७६२४७६८



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<b>B.E. (Mechanical)</b>	<b>120</b>
<b>B.E. (Civil)</b>	<b>60</b>
<b>B.E. (Electronics &amp; Telecommunications)</b>	<b>60</b>
<b>Master in Business Administration (MBA)</b>	<b>60</b>

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