PRIYADHARSHINI ENGINEERING COLLEGE,

VANIYAMBADI-635751

Department of Electronics and Communication Engineering

TECHNICAL MAGAZINE

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PERSEVERANCE, ENDURANCE, COMMITMENT

"கற்றலும், கற்றவை கேட்டலும், கேட்டதன்கண் நிற்றலும்"

ABOUT THE COLLEGE

Moved by the sad plight of affairs which was prevailing among the rural based population of Vaniyambadiand nearby Village who were quite unaware of the technological explosion that was taking place in India, thephilanthropist of Vaniyambadi and nearby villages came together and established Jai Barath Charitable Trustin the year 1994 and started Pariyadarshini Engineering College in the year 1995 under its banner with theirsumptuous contributions.

With the sole aim that the accomplishment of the Vision and Mission of the Trust does not get shattered,the matter was referred to the Honorable High Court of Madras for scheming. The Honorable High Court ofMadras appointed Retired Justice V.Rengasamy as the Receiver of the Trust in the year 2004 whichappointment was confirmed by the Honorable Supreme Court of India, New Delhi. Right from that time Honorable Justice V.Rengasamy with his efficient leadership, guidance and impeccable integrity isadministering Pariyadarshini Engineering College faithfully following the Vision and Mission of Jai BarathCharitable Trust in letter and spirit and has raised the college to greater heights.

Mission He took initiative to establish palatial buildings and labs in the college. He made it a point to fully equipthe labs with the necessary software and our labs are deficient free as per the AICTE and Anna Universitynorms. He introduced B.E (Civil) in Undergraduate Course and M.E (Power Systems) and M.E (EngineeringDesigns) in Postgraduate course. He continues to administer the institution with full zeal and zest till date.

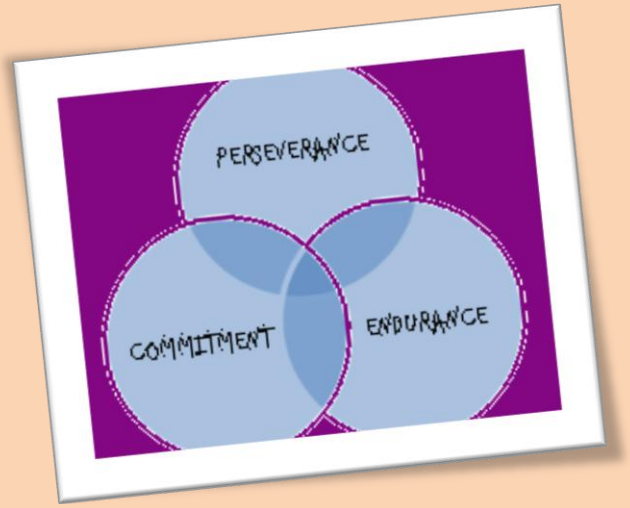
VISION OF THE COLLEGE

To Inculcate In the Young Rural Minds the Aptitude to Compete With the Quality Technocrats

MISSION OF THE COLLEGE

- To instill technical skills to compete for a sustainable world
- To impart holistic value based technical education
- To intensify international research and development (R & D) cooperation in technological development
- To imbibe core values of love for motherland, performance of duty, compassion, tolerance, honesty and integrity

COLLEGE MOTTO:



"கற்றலும், கற்றவை கேட்டலும், கேட்டதன்கண் நிற்றலும்"

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 ISTE, ICTACT has organized several workshops, conferences and other technical events.

The ultimate aim of the department is to foster the technical skills in the field of Electronics and Communication that will help the students to practically express their findings as products conducive to the society.

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

PROGRAM EDUCATIONAL OBJECTIVES (PEO'S)

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 withthe 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.

ADMINISTRATOR'S MESSAGE

India has the world's largest population. It is not enough to only foster cognitive intelligence among the youth. The youth requires a mutual faculty endowed with multi dimensional intelligence. What are the objectives that the youth should work towards? These cannot be purely materialistic, materialistic Programme alone does not guarantee national security. What is essential is the character or integrity of the country's citizens. A national policy for integrating spiritual values and organization leadership can be achieved through measures by which we can create a modern Mindset among the youth. This will not only motivate them to acquire technical cognitive competence but also develop their emotional,, moral , social, spiritual, environmental and innovational intelligence. This will make them more patriotic self-reliant individuals of high character, possessing a social conscience. Such an army of evolved youth will be the asset of the nation

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 moulding the personality of our students and imbibe in them moral values and the spirit to team work. As a result 328 of our students leaving the institution in the year 2015 got Placed in reputed and renowned firms. I wish this solidarity continues for successive years and we would be proud to release many more news letter like this, highlighting ourachievements. I have no doubts in near future PEC will be termed as one of the leading technical institutions in our district.

VICE PRINCIPAL'S MESSAGE

The Department of ECE has seen a considerable growth since its inception in the year 1995. The well qualified faculty and courses of this department aid to prepare students for careers as professional engineers through an education in fundamental principles as well as in the context of real application and design environment. The department encourages all students to take advantage of the opportunities provided by the institute and participate in all the extracurricular activities that are offered.

I wish to emphasis the importance of few things that we always have to remember. Parents and teachers should remember that students should not be forced, but should be guided to achieve their goals in an easy and pleasing ways, so that we can discover the touch of genius in each one of them

HOD MESSAGE

THE DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING (ECE) has consistently maintained an exemplary academic record. The greatest asset of the department is its highly motivated and learned faculty. The available diversity of expertise of the faculty with the support of the other staff prepares the students to work in global multicultural environment. The graduates of the Electronics & Communication Stream have been selected by some of the world's leading corporations & as well as by most of the leading Indian counter parts.

We hope that we will continue to deliver our best to serve the society and mankind. It is also expected and that our students will continue to pass-on the skills which they have developed during their stay at this department

to whole of the worldfor a better society. We will be happy to receive your suggestions for further improvement and development of our department.

FROM THE EDITOR'S DESK

Dear Students,

We hearty welcome you to the newly launched ECE Department's first issue of the Magazine for the academic year 2016-2017.

The objective of the magazine is to mainly focus on Achievement of the students from the ECE department in the Co-curricular and Extra-Curricular Activities.

I congratulate all my team members for their constant effort in launching this Magazine. We are also thankful to our Management and Principal for their support and encouragement. Finally we are gratified to our reviewers for their frank opinions and constructive suggestions, namely our colleagues and students.

DEPARTMENT TOPPERS

ACADEMIC YEAR (2016-2017)

PHOTO	STUDENT NAME	CGPA
IV YEAR ECE		
	**VIMALRANI. V**	**8.6**
	**ASWITHASREE. B**	**8.2**
	**PRIYANKA.P**	**8.0**
	**HINDHUMATHI. R**	**7.8**
III YEAR ECE		
	**KAYALVIZHI .M**	**8.5**
	**PREMALATHA. M**	**8.2**
II YEAR ECE		
	**MUSFIRA AMBAREEN**	**8.6**

	**SARITHA B**	**8.4**

ARTICLES

Satellite TV

M.Hari Krishnan, IV Year ECE A

Satellite TV is a type of television programming that is wirelessly delivered to TV sets across the world via a network of radio signals, communications satellites, broadcast centers and outdoor antennas. Broadcast signals are transmitted from satellites orbiting the Earth and received by local and regional satellite TV systems.

How Satellite TV service works

Satellite TV technology makes use of specialized antennas known as satellite dishes. These satellite dishes transmit signals to a satellite receiver such as a set-top box or satellite tuner module within a TV set. The programming source transmits signals to a satellite provider broadcast center and these waves are then picked up by a compact satellite dish and broadcast onto television sets.

Overview of Satellite TV Video Content Delivery

Satellite TV service can also be referred to as direct-broadcast satellite (DBS or DBSTV) service. A DBS provider will select programming—often a wide range of channels and services—and will then broadcast this content to satellite TV subscribers as part of a larger TV package. DBS programming can either be sent to a digital satellite receiver or an analog satellite receiver. Analog satellite television is slowly being replaced by digital satellite programming. Digital satellite television has become increasingly available in better quality known as HD TV (high-definition television). Digitally-broadcast content is characterized by greater picture and sound quality.

Satellite stations and broadcast television stations both transmit TV programming through radio signals. Years ago, the first satellite television TV technologies were broadcast in the C-band radio frequency range. Today, digital satellite TV content is transmitted in the Ku frequency range.

To further understand the technology behind direct-broadcast satellite systems, it is important to review the top features and elements involved in direct-broadcast satellite TV video content delivery: programming sources, satellite provider broadcast centers, satellites, satellite dishes and the satellite receivers. Programming sources refer to networks or channels that offer TV shows and movies for the enjoyment of subscribers. A broadcast center plays an integral role in video content delivery. At broadcast centers, TV providers receive and send broadcast signals to satellites orbiting the Earth.

Before sending out a signal, a broadcast center will convert programming into a digital stream of content. Once satellites have received and processed all of these uncompressed signals, they ultimately rebroadcast them to satellite dishes on Earth. Next, a subscriber's outdoor satellite dish will pick up the broadcast signal and transmit it to the satellite receiver located inside of a home. A satellite receiver then completes the information transmission by processing the signal and passing it on to a viewer's television set.

Reliability and Reception

If a satellite dish or antenna is knocked out of place by inclement weather, homeowners may need to climb a roof to adjust these settings

Bundle Services

Bundling services like television, Internet, phone and home security is often a very convenient option for customers. One advantage of bundled service is a single bill. While cable TV providers frequently offer bundles, satellite TV companies may need to partner up with other carriers in order to provide Internet, phone and other services to their customers.

Online Streaming Service

If you are interested in streaming live TV and watching video content online, you may want to carefully review package details to ensure you sign on with a provider—whether Internet, cable or satellite—that offers a wide array of live TV streaming content, both in-home and on-the-go. Do you want to stream your favorite TV shows and movies online or would you prefer to watch live TV on your mobile devices?

Direct broadcast via satellite

Direct broadcast satellite, (DBS) also known as "Direct-To-Home" can either refer to the communications satellites themselves that deliver DBS service or the actual television service. Most satellite television customers in developed television markets get their programming through a direct broadcast satellite provider. Signals are transmitted using Ku band and are completely digital which means it has high picture and stereo sound quality.

Programming for satellite television channels comes from multiple sources and may include live studio feeds. The broadcast centre assembles and packages programming into channels for transmission and, where necessary, encrypts the channels. The signal is then sent to the uplink where it is transmitted to the satellite. With some broadcast centres, the studios, administration and uplink are all part of the same campus. The satellite then translates and broadcasts the channels.

Most of the DBS systems use the DVB-S standard for transmission. With pay television services, the data stream is encrypted and requires proprietary reception equipment. While the underlying reception technology is similar, the pay television technology is proprietary, often consisting of a conditional-access module and smart card. This measure assures satellite television providers that only authorised, paying subscribers have access to pay television content but at the same time can allow free-to-air (FTA) channels to be viewed even by the people with standard equipment (DBS receivers without the conditional-access modules) available in the market.

NATURE

R.Brindha

IV Year ECE A

In the broadest sense, is the natural, physical, or material world or universe. "Nature" can refer to the phenomena of the physical world, and also to life in general. The study of nature is a large part of science. Although humans are part of nature, human activity is often understood as a separate category from other natural phenomena.

The word *nature* is derived from the Latin word *natura*, or "essential qualities, innate disposition", and in ancient times, literally meant "birth". *Natura* is a Latin translation of the Greek word *physis* , which originally related to the intrinsic characteristics that plants, animals, and other features of the world develop of their own accord. The concept of nature as a whole, the physical universe, is one of several expansions of the original notion; it began with certain core applications of the word by pre-Socratic philosophers, and has steadily gained currency ever since. This usage continued during the advent of modern scientific method in the last several centuries.

Within the various uses of the word today, "nature" often refers to geology and wildlife. Nature can refer to the general realm of living plants and animals, and in some cases to the processes associated with inanimate objects – the way that particular types of things exist and change of their own accord, such as the weather and geology of the Earth. It is often taken to mean the "natural environment" or wilderness–wild animals, rocks, forest, and in general those things that have not been substantially altered by human intervention, or

which persist despite human intervention. For example, manufactured objects and human interaction generally are not considered part of nature, unless qualified as, for example, "human nature" or "the whole of nature". This more traditional concept of natural things which can still be found today implies a distinction between the natural and the artificial, with the artificial being understood as that which has been brought into being by a human consciousness or a human mind. Depending on the particular context, the term "natural" might also be distinguished from the unnatural or the supernatural

Silicon Memory

R.YUVARANI

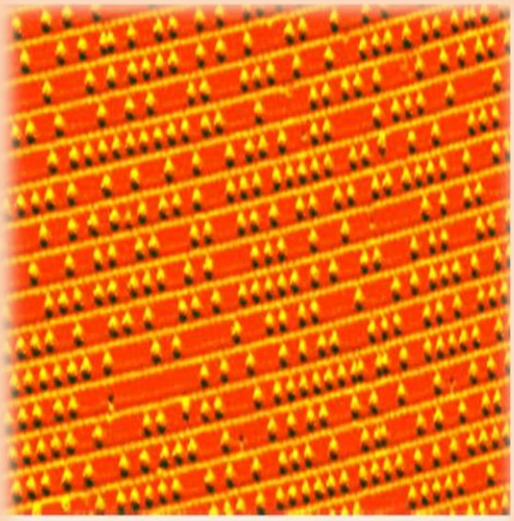
IV Year ECE B

The limits of pushing storage density to the atomic scale are explored with a memory that stores a bit by the presence or absence of one silicon atom. These atoms are positioned at lattice sites along self-assembled tracks with a pitch of five atom rows. The memory can be initialized and reformatted by controlled deposition of silicon. The writing process involves the transfer of Si atoms to the tip of a scanning tunneling microscope.

The constraints on speed and reliability are compared with data storage in magnetic hard disks and DNA. The physics icon Richard Feynman estimated that “all of the information that man has carefully accumulated in all the books in the world, can be written in a cube of material one two-hundredth of an inch wide”. Thereby, he uses a cube of 5×5×5 = 125 atoms to store one bit, which is comparable to the 32 atoms that store one bit in DNA. Such a simple, back-of-the-envelope calculation gave a first glimpse into how much room there is for improving the density of stored data when going down to the atomic level.

In the meantime, there has been great progress towards miniaturizing electronic devices all the way down to single molecules or nanotubes as active elements. Memory structures have been devised that consist of crossed arrays of nanowires linked by switchable organic molecules or crossed arrays of carbon nanotubes with electro statically switchable intersections. The purpose is to push the storage density to the atomic limit and to test whether a single atom can be used to store a bit at room temperature. How closely can the bits be packed without interacting? What are the drawbacks of pushing the density to its limit while neglecting speed, reliability and ease of use?

A bit is encoded by the presence or absence of a Si atom inside a unit cell of 5×4 = 20 atoms. The remaining 19 atoms are required to prevent adjacent bits from interacting with each other, which is verified by measuring the autocorrelation. A specialty of the structure in figure 1 is the array of self-assembled tracks with a pitch of five atom rows that supports the extra atoms. Such regular tracks are reminiscent of a conventional CDROM. However, the scale is shrunk from μm to nm. Although the memory created now is in two dimensions rather than the three-dimensional cube envisioned by Feynman, it provides a storage density a million times greater than a CD-ROM, today's conventional means of storing data.



Conventional storage media

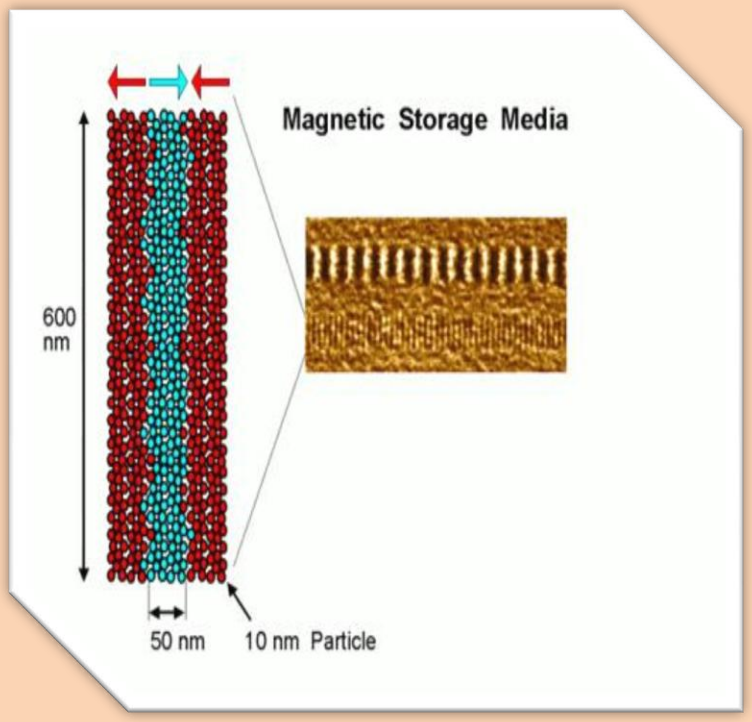
The highest commercial storage density is achieved with magnetic hard disks, whose aerial density has increased by seven orders of magnitude since their invention in Feynman's days. Currently, the storage density is approaching 100 Gigabits per square inch in commercial hard disks. Typical storage media consist of a combination of several metals, which segregate into magnetic particles embedded into a non-magnetic matrix that keeps them magnetically independent. A strip of particles with parallel magnetic orientation makes up a bit, as color coded red and turquoise in the figure below. (The dimensions keep getting smaller.) When such a bit is imaged by a magnetic force microscope the collection of these particles shows up as white or dark line, depending on the magnetic orientation.

The density limit in magnetic data storage is largely determined by the in homogeneity of the magnetic particles that make up the storage medium. Overcoming variations in particle size, shape, spacing, and magnetic switching currently requires the use of about 100 particles per bit. The error limits are extremely stringent (less than one error in 108 read/write cycles, which can be reduced further to one error in 1012 cycles by error-correcting codes). The individual particles in today's media approach the super paramagnetic limit already (about 10 nm), where thermal fluctuations flip the magnetization.

Writing is more difficult. While atoms can be positioned controllably at liquid helium temperature, that is much harder to achieve that at room temperature. In order to prevent them from moving around spontaneously it is necessary to choose atoms that are strongly bound to the surface. Pushing them around with the STM tip requires a close approach, which entails the risk of an atom jumping over to the tip. This problem can be turned into a solution by using the STM tip to remove

silicon atoms for writing zeros. The memory is pre-formatted with a 1 everywhere by controlled deposition of silicon onto all vacant sites Advantages and Disadvantages

An intriguing aspect of atomic scale memory is that memory density is comparable to the way nature stores data in DNA molecules. The Wisconsin atomic-scale silicon memory uses 20 atoms to store one bit of information, including the space around the single atom bits. DNA uses 32 atoms to store information in one half of the chemical base pair that is the fundamental unit that makes up genetic information. Compared to conventional storage media, both DNA and the silicon surface excel by their storage density. Obviously there are some drawbacks. The memory was constructed and manipulated in a vacuum, and that a scanning tunneling microscope is needed to write memory which makes the writing process very time consuming.



Moreover, there is a tradeoff between memory density and speed. As density increases, the ability to read the memory comes down because we get less and less of a signal. As we make things smaller, it's going to get slower

The push towards the atomic density limit requires a sacrifice in speed. Practical data storage might evolve in a similar direction, with the gain in speed slows down as the density increases. Somewhere on the way to the atomic scale ought to be an optimum combination of density and speed. If the reading and writing speed is improved and the memory is made cost effective, this will revolutionize the field of secondary storage devices.

Electronic Toll Collection

FAIZAN.S.A

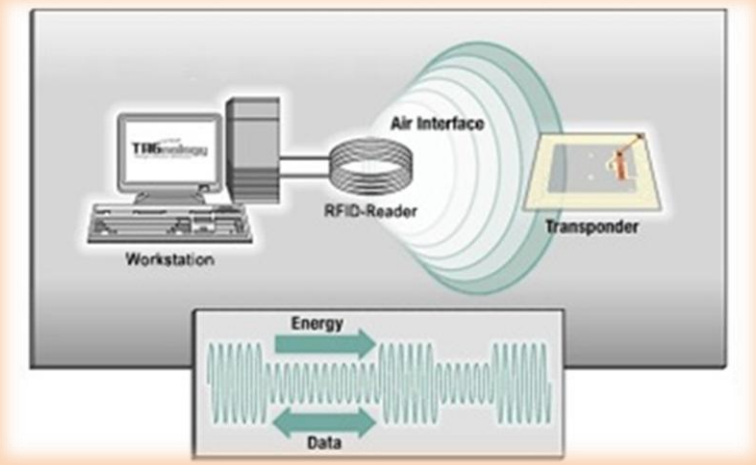
III Year ECE

Electronic Toll Collection is a generally mature technology that allows for electronic payment of highway tolls. It takes advantage of vehicle-to-roadside communication technologies to perform an electronic monetary transaction between a vehicle passing through a toll station and the toll agency. This project is implemented using the innovative technology of Radio Frequency Identification (RFID).

Radio-frequency identification (RFID) is a technology that uses communication via electromagnetic waves to exchange data between a terminal and an electronic tag attached to an object, for the purpose of identification and tracking.

An RFID system consists of a reader and transponders. Transponders (derived from the words "transmitter" and "responder") are attached to the items to be identified. They are often called "tags". Radio Frequency Identification (RFID) involves contact less reading and writing of data into an RFID tag's non-volatile memory through an RF signal. The reader emits an RF signal and data is exchanged when the tag comes in proximity to the reader signal. The RFID tag derives its power from the RF reader signal and does not require a battery or external power source.

Each vehicle will be provided with an RFID tag. This transponder (tag) stores the unique ID of the vehicle and related information. When interrogated by a reader, it responds with that data over a radio frequency link. The readers are fixed in the toll gates. So when the vehicle comes near the reader, the data from the tags can be easily read by the readers. This data is passed to the computer and thus the cash can be deducted from the user's account



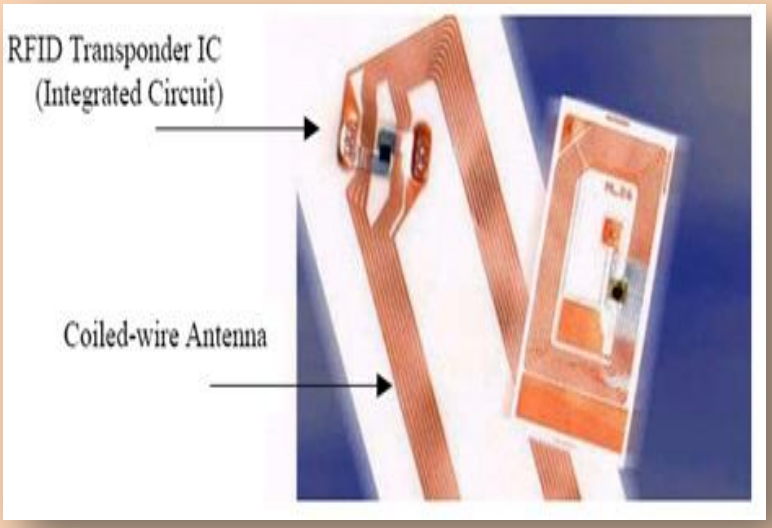
RFID is a wireless link to uniquely identify tags. These systems communicate via radio signals that carry data either unidirectional or bidirectional. The tag is energized by a time-varying electromagnetic radio frequency (RF) wave that is transmitted by the reader. This RF signal is called carrier signal. When tag is energized the information stored in the tag is transmitted back to the reader. This is often called backscattering. By detecting the backscattering signal, the information stored in the tag can be fully identified. RFID systems are comprised of two main components RF reader and RF Tag

The RFID tag, or transponder, is located on the object to be identified and is the data carrier in the RFID system. Typical transponders (transmitters/responders) consist of a microchip that stores data and a coupling element, such as a coiled antenna, used to communicate via radio frequency communication. Transponders may be either active or passive.

Active transponders have an on-tag power supply (such as a battery) and actively send an RF signal for communication while passive transponders obtain all of their power from the interrogation signal of the transceiver and either reflect or load modulate the transceiver's signal for communication. Most transponders, both passive and active, communicate only when they are interrogated by a transceiver.

Active RFID and Passive RFID are fundamentally different technologies. While both use radio frequency energy to communicate between a tag and a reader, the method of powering the tags is different. Active RFID uses an internal power source (battery) within the tag to continuously power the tag and its RF communication circuitry, whereas Passive RFID relies on RF energy transferred from the reader to the tag to power the tag. While this distinction may seem minor on the surface, its impact on the functionality of the system is significant

Passive RFID either 1) reflects energy from reader or 2) absorbs and temporarily stores a very small amount of energy from the reader's signal to generate its own quick response. In either case passive RFID operation requires very strong signals from the reader and the signal strength required from the tag is constrained to very low levels by the limited energy. On the other hand active RFID allows very low level signals to be received by the tag, and the tag can generate high level signals back to the reader, driven from its internal power source. Active RFID tag is continuously powered, whether in the reader field or not.



The selections of active or passive tag affect factors like range of communication, data storage capacity, sensor ability etc. If the tag is active the reader can spot more tags within seconds than the passive tag, but as the cost is compared the passive tags are cheaper than the active tags. The life of the passive tags are more than the active tag because, active tag requires tag power supply within the chip.

RF READER

The interrogator consists of a reader and data processing subsystem. The RFID reader, or transceiver, which may be able to both read data from and write data to a transponder. The data processing subsystem which utilizes the data obtained from the transceiver in some useful manner.

Typical transceivers (transmitter/receivers), or RFID readers, consist of a radio frequency module, a control unit, and a coupling element to interrogate electronic tags via radio frequency communication. In addition, many transceivers are fitted with an interface that enables them to communicate their received data to a data processing subsystem, e.g., a database running on a personal computer. The use of radio frequencies for communication with transponders allows RFID readers to read passive RFID tags at small to medium distances and active RFID tags at small to large distances even when the tags are located in a hostile environment and are obscured from view. The figure shows handheld and stationary reader modules.

The basic components of an RFID system combine in essentially the same manner for all applications and variations of RFID systems. All objects to be identified are physically tagged with transponders. The type of tag used and the data stored on the tag varies from application to application.

The RF field generated by a tag reader (the energy transmitter) has three purposes:

1. Induce enough power into the tag coil to energize the tag:

2. Provide a synchronized clock source to the tag:

3. Act as a carrier for return data from the tag:

TAG COUPLING AND COMMUNICATION

PUNITH.L, II year ECE

Passive RFID tags obtain their operating power from the electromagnetic field of the reader's communication signal. The limited resources of a passive tag require it to both harvest its energy and communicate with a reader within a narrow frequency band as permitted by regulatory agencies. Passive tags typically obtain their power from the communication signal either through inductive coupling or far field energy harvesting.

Inductive coupling uses the magnetic field generated by the communication signal to induce a current in its coupling element (usually a coiled antenna and a capacitor). The current induced in the coupling element charges the on-tag capacitor that provides the operating voltage, and power, for the tag. In this way, inductively coupled systems behave much like loosely coupled transformers. Consequently, inductive coupling works only in the near-field of the communication signal. For a given tag, the operating voltage obtained at a distance d from the reader is directly proportional to the flux density at that distance.

There is a fundamental limitation on the power detected a distance d away from a reader antenna. In a loss less medium, the power transmitted by the reader decreases as a function of the inverse square of the distance from the reader antenna in the far field. A reader communicates with and powers a passive tag using the same signal. The fact that the same signal is used to transmit power and communicate data creates some challenging trade-offs

The electronic toll Collection systems are a combination of completely automated toll collection systems and semi-automatic lanes. Various traffic and payment data are collected and stored by the system as vehicles pass through. The different technologies involved are logically integrated with each other but remain flexible for upgrades. They also include sophisticated video and image capturing equipment for full-time violation enforcement. So this basic arrangement developed by us will applicable for the future developments in road transport by proper modifications. RFID systems have a secure place in the automatic identification sector. The system can made free from the challenges and will be cost effective in near future.

Humiliation is behind them and they can start to build the kind of team that Iraq deserves.

Poems

Because you are my friend

Because you are my friend,
my life is enriched in a myriad of ways.
Like a cool breeze on a sweltering day,
like a ray of sunshine parting glowering clouds,
you lift me up.
In good times, we soar,
like weightless balloons
over neon rainbows.
In bad times, you are soothing balm
for my pummeled soul.
I learn so much from you;
you help me see old things in new ways.
I wonder if you are aware
of the bright seeds you are sowing in me.
I'm a better person for knowing you,
so that everyone I interact with
is touched by your good effect on me.
You relax me, refresh me, renew me.
Your bounteous heart envelops me
in joy and love and peace.
May your life be filled
with dazzling blessings,
just as I am blessed
by being your friend.

--------*Shalini*, III Year ECE

What "Mother" Means

"Mother" is such a simple word,
But to me there's meaning seldom heard.
For everything I am today,
My mother's love showed me the way.

I'll love my mother all my days,
For enriching my life in so many ways.
She set me straight and then set me free,
And that's what the word "mother" means to me.

Thanks for being a wonderful mother, Mom!

----------Nivethitha , III year ECE

A Teacher for All Seasons

A teacher is like Spring,
Who nurtures new green sprouts,
Encourages and leads them,
Whenever they have doubts.

A teacher is like Summer,
Whose sunny temperament
Makes studying a pleasure,
Preventing discontent.

A teacher is like Fall,
With methods crisp and clear,
Lessons of bright colors
And a happy atmosphere.

A teacher is like Winter,
While it's snowing hard outside,
Keeping students comfortable,

As a warm and helpful guide.

Teacher, you do all these things,

With a pleasant attitude;

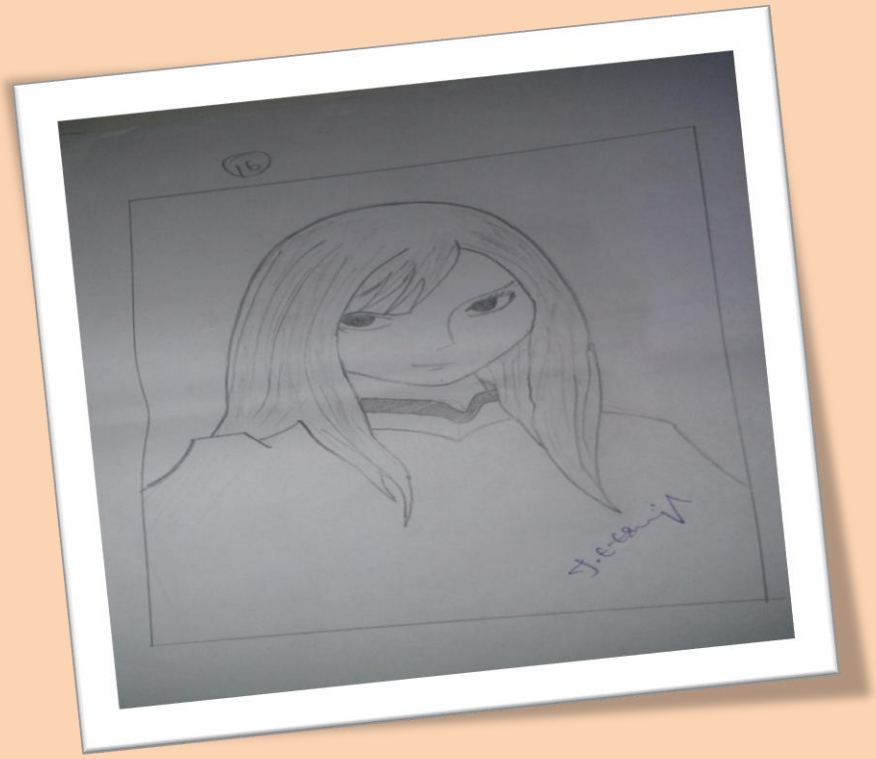
You're a teacher for all seasons,

And you have my gratitude!

----------Mahalakshmi, II Year ECE

PENCIL ART

ANUPRIYA, IV
Year ECE A



Sandhiya,

II year ECE