e-Blitz

An Online Magazine of ECE/EI

e-Blitz

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Inside Stories

Message from Vice Chancellor

This gives me immense pleasure to note that department of Electronics & Communication Engineering, Faculty of Engineering & Technology has taken the intellectual initiative of bringing out the first issue of "*e-Blitz*", the online departmental magazine. I am confident that the initiative will not only bring laurels to the student community but will also aid to the knowledge and innovation.

Wishing 'e-Blitz' a grand success for the future.

With best wishes!!

Prof. S. W. Akhtar
Vice Chancellor

Message from Pro Vice Chancellor

I am delighted to know that "Electronics & Communication Engineering" department is publishing first issue of online departmental magazine "e-Blitz".

I congratulate the ECE Department and the entire team on this Endeavour and wish the "e-Blitz", all success.

Prof. T. Usmani
Pro Vice Chancellor

Message from Chief Academic Consultant

It gives me immense pleasure to know that Electronics & Communication Engineering department is publishing first issue of online departmental magazine "e-Blitz". Electronics & Communication Engineering has a unique position in the field of engineering education & technological studies and this online magazine publication is one such good initiative taken by the department.

I wish the department a great success in publication of magazine.

Prof. S. M. Iqbal
Chief Academic Consultant

Message from Dean Engineering

It gives me immense pleasure that Electronics & Communication Engineering Department is publishing its online departmental magazine "e-Blitz",. It is good initiative taken by the department. I wish the department a great success in publication of magazine.

Prof. A. A. Zilli
Dean Engineering

Message from Dean Students Welfare

It's a matter of delight to know that the department of Electronics & Communication Engineering is going to publish first issue of online departmental magazine "e-Blitz". As the magazine is aimed to be a source of information and knowledge in the field of electronics engineering and profession, I expect that the magazine will generate a positive enthusiasm and creative current in the department.

I wish the magazine a grand success with best compliments.

M. M. Khan
Dean Students Welfare

Message from Registrar

It is a matter of immense pleasure to know that Electronics & Communication Engineering Department is releasing its first edition of online Departmental Magazine "e-Blitz". It would definitely provide a platform to enhance the talent of students and create good academic environment.

I congratulate the faculty members and team of students, who are contributing in the publication of Magazine.

Dr. I. A. Khan
Registrar

Message from Controller of Examinations

I am happy to know that the department of Electronics & Communication Engineering is publishing its first issue of online departmental magazine "e-Blitz".

I wish the department a great success in publication of magazine.

Dr. Qazi Shoeb Ahmad
Controller of Examinations

Message from Academic Coordinator

I am delighted that Department of Electronics & Communication Engineering is launching online departmental magazine "e-Blitz". This is a very exciting development and it will help in decimation of knowledge. It is a very useful and reader friendly way of providing information that is simple, efficient and instantly available.

I wish the department a great success in publication of this online magazine.

Gufran Ahmad
Academic Coordinator

From the editorial desk

I, as HoD ECE Department of this esteemed university, take it upon myself to present you the milestone we have achieved during the past year. With the blessing of God almighty, guidance of our seniors and the support of colleagues have led us towards the compilation of this online magazine e-Blitz. With proper guidance and prompt help to achieve rational targets, our students have always progressed towards the top. The future of our country belongs to our students- the youth. I am sure that with cognizant and hard work our students will head towards right direction.

Its aptly stated, 'High achievement always takes place in a framework of high expectation'. It's a commendable job and I am unable to thank adequately who have worked to make this effort, a success.

With best wishes,

Dr. Syed Hasan Saeed

HoD, ECE

Metamaterial

Some forty years ago, Russian physicist Victor Veselago theoretically investigated a fundamental question of whether the refractive index of a material can take negative values, and predicted a number of unusual phenomena associated with such negative index materials (NIMs). In his analysis, these bizarre materials are also named left-handed substances, as their electric field, magnetic field, and propagation vector obey the left-handed rule. However, this investigation was not widely accepted until their experimental verification over 30 years later by Professor David R. Smith and Professor Sheldon Schultz at the University of California, U.S.A.

While NIMs have not been found in nature, in the past decade they were demonstrated first in the microwave and terahertz and then in the near-infrared (IR) frequency ranges using the so-called metamaterial approach.

Now a day, the notion of metamaterials embraces a wide range of engineered materials with a unit cell that is much smaller than the wavelength and with predesigned electromagnetic properties, while NIMs are a subclass of metamaterials with the remarkable property of having an anti parallel phase velocity and Poynting vector. To date, a majority of NIMs experimentally demonstrated at visible and near-IR frequencies utilize metallic nanostructures with resonant magnetic response, so that both dielectric permittivity ε and magnetic permeability μ are negative in the same frequency range. Patterning on the sub-wavelength scale allows precise engineering of their electromagnetic properties over a range going far beyond natural media.
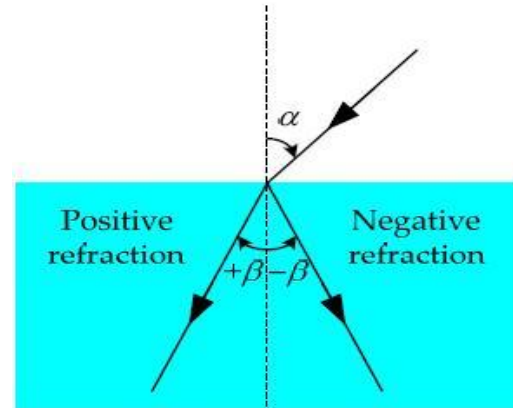
Positive and negative refractions. Angles α and β are the incidence and refraction angles, respectively.

Unlocking novel applications such as super lenses, invisibility cloaks, lasing interfaces, different type of antenna design and ultra-thin polarization optics, metamaterials are expected to lead to the next photonic revolution in science, industry and applications.

Shrish Bajpai, Assistant Professor, ECE Department

New Rules of Resume

If you're still using the first resume format you learned in school, no wonder you're not getting call-backs. The rules have changed, and you may have been doing it wrong all this time. You're competing with more people than ever before, and your resume is the employers' first contact with you - make it count. Present the information they want in an easy-to-read format, and the hiring manager is more likely to read the whole page instead of skimming and tossing.

e-Blitz

Customize the resume to the field: Bankers should stick with formal black and white, but creative fields generally prefer to see a bit of creativity. Showcase your talents right there on the page. You have to make your resume stand out from the other thousand in the pile, some of which are better-qualified than you. This is not an ad for a nightclub though, so keep it tasteful and somewhat subtle. Make it reflect the corporate climate of the company you're sending it to.

Customize the resume to the job: If the job listing focuses more on skills than education, put your skills section first. If education seems more important than experience, lead with your Education section. Objectives are no longer necessary unless the job listing specifically asks for one. Make sure the skills and experience you highlight match the skills and experience listed in the job ad - use the same words.

Digitize your resume: Internet-based job applications generally require you to upload a digital resume. Don't use the same file you print your hard copies from - use a web-optimized font like Georgia, and increase the space between the lines to about 120% to keep it readable. Don't use indents on a digital resume, but keep your margins well-defined and clean.

Combine sections: Use your work history section to highlight specific skills you developed or showcased at each job, and any accomplishments or awards you earned. Be specific - don't say that you're "intelligent and efficient", offer examples of things you've done that prove it.

Scrap the "Hobbies and Interests" section: For the most part, employers are concerned about how you'll benefit them - your comic book collection doesn't figure into the equation. Clear your resume

"It says here that you were created in God's image. Very impressive."

of all references to your cat, your favorite movie, or who's going to win the Super Bowl. The only time your hobbies should make an appearance is if they directly relate to the job in question. For example, if you're applying for a job with a nonprofit pet-welfare organization, by all means mention the many weekends you volunteered at your local shelter.

Put your name at the top: It sounds like a no-brainer, but people sometimes get carried away with the creativity and treat the resume like letterhead. True, your letterhead may be beautiful with the contact information at the bottom or down the side, but imagine this: the hiring manager remembers your resume, and wants to show it to her boss. She leafs through the stack on her desk, scanning the names at the top and doesn't see yours. She assumes it was lost, and moves on to the second-best candidate.

Don't list references: For better or worse, the internet is your reference now. You will be Googled

prior to the interview, so maybe take the New Year's Eve pictures down from your Facebook page. If you have some truly impressive references, print them out and bring a hard copy with you to the interview.

Still, no matter how perfect your resume is, there's an awful lot of competition out there. Apply only to jobs that you are qualified for - don't waste your (or the hiring managers') time shooting the moon, because there are applicants out there who actually are qualified. You won't get that job at NASA with a high school diploma, no matter how lovely your resume is.

But keep networking, keep applying, and stay relevant. You'll find your perfect fit yet.

Saifullah Ansari , EC-2, Final Year

Tricks with BLUETOOTH

Bluetooth is an application widely used today. Bluetooth enabled cell phones, laptops, PCs, Stereos have come to the fore during the last half a decade. It facilitates rapid data transfer at a short range. A Bluetooth connection is wireless and automatic and extremely user friendly. The etymology of the word Bluetooth is that it derives the name from anglicized version of 10th century Danish King Harald Blataand (940-981). The king ruled Denmark and Norway and united the Scandinavia. In the same vein Bluetooth saw the union of PC and mobile industry. All these were short-range radio link programs. Infrared communications have a couple of drawbacks.

First, infra- red is a "line of sight" technology i.e. you have to point the remote control at the television to operate. The second drawback is that infrared is almost always a "one to one" technology meaning it can be paired only to one device at a time. But this guards it against interference. The older Bluetooth 1.0 standard has a maximum transfer speed of 1 megabit per second (Mbps), while Bluetooth 2.0 can manage up to 3 Mbps. A trick that Bluetooth devices use to avoid interfering with other systems is by sending out very weak signals of about 1 mW cutting chances of interference.

By comparison, the most powerful cell phones can transmit a signal of 3 W. The low power limits the range of a Bluetooth device to about 10 meters Bluetooth can connect up to eight devices simultaneously. Bluetooth uses a technique called Spread-Spectrum Frequency Hopping that makes it rare for interference to occur. It communicates on a frequency of 2.45 gigahertz (actually between 2.402 GHz and 2.480 GHz, to be exact) creating a personal-area network (PAN), or piconet. In this technique, a device will use 79 individual, randomly chosen frequencies within a designated range, changing from one to another on a regular basis. In the case of Bluetooth, the transmitters change frequencies 1,600 times every second, meaning that more devices can make full use of a limited slice of the radio spectrum. Also if at all any interference occurs it will not last long. Bluetooth can be either half-duplex or full-duplex communication. Problems like "blue jacking," "blue bugging" and

"Car Whisperer" have turned up as Bluetooth-specific security issues. Blue jacking involves Bluetooth users sending a business card (just a text message, really) to other Bluetooth users within a 10-meter (32-foot) radius. If the user doesn't realize what the message is, he might allow the contact to be added to his address book, and the contact can send him messages that might be automatically opened because they're coming from a known contact. Blue bugging is more of a problem, because it allows hackers to remotely access a user's phone and use its features, including placing calls and sending text messages, and the user doesn't realize it's happening. The Car Whisperer is a piece of software that allows hackers to send audio to and receive audio from a Bluetooth-enabled car stereo.

Pamir Singh, EC 2, Third Year

Software Defined Radio

Software-defined radio (SDR) is a radio communication technology that is based on software defined wireless communication protocols instead of hardwired implementations popular in Military and JTRS applications. Design Considerations Software Defined Radio (SDR) Block Diagram Schematic Block Diagram for SDR Software-defined radio (SDR) is a radio communication technology that is based on software defined wireless communication protocols instead of hardwired implementations. In other words, frequency band, air interface protocol and functionality can be upgraded with software download and update instead of a complete

hardware replacement. SDR provides an efficient and secure solution to the problem of building multi-mode, multi-band and multifunctional wireless communication devices. An SDR is capable of being re-programmed or reconfigured to operate with different waveforms and protocols through dynamic loading of new waveforms and protocols. These waveforms and protocols can contain a number of different parts, including modulation techniques, security and performance characteristics defined in software as part of the waveform itself. The benefits of a programmable DSP plus ARM based SoC Efficient and effective SDR design requires a standard programmable hardware platform that allows designers to navigate these tough system requirements. The Applications Processors leverage the ARM general purpose processor to complement highly-efficient, programmable TI digital signal processor (DSP) and a rich set of IO to address the needs for software defined radio communication devices. Complex functions in wireless protocol-specific algorithms are perfectly suited to programmable DSPs since they combine number-crunching power with intelligence to enable multitasking. The DSPs math capability allows it to handle the various modem processing functions like filtering, modulation, demodulation and error correction encoding and decoding. The ARM926EJ-S™ Processor on the TMS320DM64xx the ARM Cortex™-A8 in the OMAP35xx SoC, as well as the ARM9 and ARM9-plus-DSP architecture of the OMAP-L1x are especially well suited to handle the networking,

media access control and applications processing in a wireless radio communication product. The ARM processor also helps address the control functions involved with man machine interface in the radios. Small Form Factor (SFF) Software Defined Radio (SDR) Development Platform The TI Small Form Factor (SFF) Software Defined Radio (SDR) Development Platform provides the entire signal chain hardware from antenna to baseband as well as a software board support package that supports a complete suite of software development tools in a single integrated development platform. With the kit, developers can easily design waveforms as well as create and test single or multi-protocol radios for applications in public safety, commercial, Professional Mobile Radio (PMR) and land mobile radio (LMR) communication systems as well as RFID readers.

Zeeshan Aktar, EC 2, Final Year

Sixth Sense

'Sixth Sense' is a wearable gestural interface that augments the physical world around us with digital information and lets us use natural hand gestures to interact with that information. Its prototype is called Wear Ur World (WUW). It is developed in the MIT Lab by the researchers Pranav Mistry and Pattie Maes.

The basic idea behind this invention was to bridge the gap between the digital world and physical world- to change the way how we interact with information by bringing intangible, digital information out into the tangible world, and

allowing us to interact with this information via natural hand gestures. 'Sixth Sense' frees information by seamlessly integrating it with reality, and thus making the entire world your computer.

The Sixth Sense prototype is comprised of a pocket projector, a mirror and a camera. The hardware components are coupled in a pendant like mobile wearable device. Both the projector and the camera are connected to the mobile computing device in the user's pocket. The projector projects visual information enabling surfaces, walls and physical objects around us to be used as interfaces; while the camera recognizes and tracks user's hand gestures and physical objects using computer-vision based techniques. The software program processes the video stream data captured by the camera and tracks the locations of the colored markers (visual tracking fiducials) at the tip of the user's fingers using simple computer-vision techniques. The movements and arrangements of these fiducials are interpreted into gestures that act as interaction instructions for the projected application interfaces. The maximum number of tracked fingers is only constrained by the number of unique fiducials, thus Sixth Sense also supports multi-touch and multi-user interaction.

The prototype has several applications that demonstrate the usefulness, viability and flexibility of the system. The map application lets the user navigate a map displayed on a nearby surface using hand gestures, similar to gestures supported by Multi-Touch based systems, letting the user zoom in, zoom out or pan using just hand movements. The drawing application lets the user draw on any

surface by tracking the fingertip movements of the user's index finger. Sixth Sense also recognizes user's freehand gestures. For example, it implements a gestural camera that takes photos of the scene the user is looking at by detecting the 'framing' gesture. The user can stop by any surface or wall and flick through the photos he/she has taken. Sixth Sense also lets the user draw icons or symbols in the air using the movement of the index finger and recognizes those symbols as interaction instructions. For example, drawing a magnifying glass symbol takes the user to the map application or drawing an '@' symbol lets the user check his mail. The Sixth Sense system also augments physical objects the user is interacting with by projecting more information about these objects projected on them. For example, a newspaper can show live video news on a regular piece of paper. The gesture of drawing a circle on the user's wrist projects an analog watch.

The software needed to run this prototype is open source to encourage developers around the world to create their own device. The cost of current prototype is around $350. It has already gained attention around the globe and the developers have been awarded with the Popular Science Invention award and TR35 award in Young Inventor category.

Sushant Khare, First Year, EC-3

"WIMAX" The Future of Wireless Communication

The new era of communication, currently employed in some parts of the world, is Worldwide Interoperability for Microwave Access (WIMAX). It is the latest technology which is approved by IEEE 802.16 group, which is a standard for point-to-multipoint wireless networking. WIMAX vision is to deliver "last mile" broadband connectivity to home or business locations, also its data rates are comparable with Cable and Digital Subscriber line (DSL) rates. It has the capability which connects to the ISP (Internet Service Provider) even when you are roaming outside home or office. The WIMAX technology is becoming the way to avert the impending crisis of rural connectivity i.e. it will be accessible till the last mile. This paper explains about the purpose of WIMAX, the study of WIMAX systems, its implications and applications and its wireless capabilities.

This innovation technology will provide transfer rates of multiple Megabits to the users within a range of several kilometers. As we know the demand for wireless has raised rapidly from 5.7 million in 2002 to 200 million in 2006. The global WIMAX market is growing at the rate of 30% per year and is expected to touch $2.8 billion by 2009 from the present $ 600 million. The number of WIMAX users is forecasted to each 14.9 million in 2009. WIMAX based solutions are more flexible and secured. They provide an outstanding service and are very much cost effective. Topologies of urban and suburban areas can be controlled by this technology. WIMAX technology is 30 times faster than the third generation and 100 times faster than the wireless data rates. This technology will provide fixed, nomadic, portable and mobile wireless

broadband connectivity without the need for a direct line of sight. WIMAX promises wireless broadband access at 31 miles in comparison to Wi Fi's 300 feet. The two main application of WIMAX are Fixed WIMAX, which are point to multipoint enabling broadband access to homes and offices, and Mobile WIMAX, which offers the full mobility of cellular networks at true speeds. Also the emergence of next generation wireless technology is going to enhance the effectiveness of the existing methods used by public safety. WIMAX has the potential or capability to provide India with widespread and unimaginable Internet access that can usher in economic growth. Better education and health care, and improved entertainment services. WIMAX can provide Internet access to residential customers in suburban and "really" rural areas the window to a whole new world that the now obsolete cabled broadband could not offer. Everybody who appreciates freedom from the shackles of cables would love WIMAX and what more when the new wireless connection offers convenient communication, cheap phone calls, fast downloads and smooth video streaming. Since demand for wireless is increasing day by day, presently, the networks are only available in commercial buildings, homes etc. But people want wireless internet access wherever they go like shopping malls, airport, roaming around the city etc. They want to have all the facilities that a cable broadband provides like surfing the web, downloading files, video conferencing etc. with higher data rates. In the context WIMAX is positioned as an excellent option. Moreover, the possibility of offering broadband services in combination with voice services will gradually lead to narrow band WLL substitution. Mobile companies are on the verge of developing new, faster 4G technology. The major advantage of WIMAX s it covers a huge area as compared to the already existing Wi-Fi networks. A single WIMAX main station can serve hundreds of users. The full connection can be installed in days rather than weeks which were required for wired connections. Data rates are as high as 280Mbps and distances of 30 miles are possible. Mobile can be operated within 3-5 miles of the base station with data rates of up to 75Mbps. Also, no ICC radio licensing is required for the connection. The possibilities are endless. As we become more mobile and reliant on electronic information and devices, this type of network becomes essential. WIMAX is going to bring scale to the market and ideally create a larger market along the way. WIMAX is not a new technology, but rather a more innovative and commercially viable adaptation of a proven technology that is delivering broadband services around the globe. WIMAX is a moniker for IEEE 802.16 interface specifications promoted by the industry trade organization "Forum for Worldwide Interoperability for Microwave Access". Members of the WIMAX forum include operators, equipment & component makers. The WIMAX forum has introduced a new standard for wireless broadband access. WIMAX forum has adopted certain profiles based on the 802.16 standard for interoperability testing and WIMAX certification

which operates in the frequency bands of 2.5GHz, 3.5GHz, 5.8GHz and also which are licensed by various government authorities. The purpose of The WIMAX Forum is to gather together the industry participants and form and communicate a clear vision for where WIMAX is heading, what stages and market development focus the standards, regulatory actions and systems development will take and how these things will occur. WIMAX is a standard base technology which will serve as a wireless extension or alternative to cable and DSL for broadband access. WIMAX is built on open standards and is widely accepted by regulatory agencies and standard groups around the globe. One of the most notable applications advanced applications for WIMAX is Tele geoprocessing, which is a combination of Geographical Information Systems (GIS) and Global Positioning Systems (GPS) working in concert over a high capacity wireless mobile system.

**Mohd. Arshad, Assistant Professor,
ECE Department**

4G : New Limits for Mobile Internet

That's the question many smartphone and tablet users have been asking ever since the launch of Apple's new 4G-capable iPad and the release of 4G-capable smartphones from the likes of HTC, Motorola and Samsung. Simply put, 4G is a blazing-fast internet connection for your mobile device. It refers to the fourth generation of cellular (or mobile) communications and is set to supplant the current 3G network that many of us use on our mobile devices when away from wi-fi coverage.

The most obvious difference will be the speed of everything. You will be able to browse the web, stream music and videos and download apps on your phone or tablet a hell of a lot faster on a 4G network than you can on your current 3G network. How fast, then? Well, 'true 4G' is defined by the International Telecommunications Union (ITU) as providing a "sustained data rate of 100Mbps for mobile connections and 1Gbps for fixed connections". That's a mobile speed that blows away the performance of most people's current home broadband connections. 3G mobile connections have a maximum speed of 7.2Mbps, but generally offer around 1-2Mbps so 4G is set to be up to 100 times faster than your current mobile web connection.

Apple iPhone 5 ready for 4G network across world wide

Broadbandchoices.co.uk telecoms expert Dominic Baliszewski offers: "The technology is capable of switching between masts smoothly which means stuttering connections whilst on a moving train/bus

should be a thing of the past too". The commercially available 4G Long Term Evolution (LTE) and Mobile WIMAX and "advanced 3G" HSDPA+ networks in the States and elsewhere might be described as '4G', but don't meet the technical requirements to provide the sustained connection speeds of the aforementioned 'true 4G'. Still, the ITU has allowed networks to market these technologies as 4G, in an attempt to try to keep things as clear as possible for the average consumer. A major issue in 4G systems is to make the high bit rates available in a larger portion of the cell, especially to users in an exposed position in between several base stations. In current research, this issue is addressed by macro-diversity techniques, also known as group cooperative relay, and also by Beam-Division Multiple Access (BDMA). Pervasive networks are an amorphous and at present entirely hypothetical concept where the user can be simultaneously connected to several wireless access technologies and can seamlessly move between them (See vertical handoff, IEEE 802.21). These access technologies can be Wi-Fi, UMTS, EDGE, or any other future access technology. Included in this concept is also smart-radio (also known as cognitive radio) technology to efficiently manage spectrum use and transmission power as well as the use of mesh routing protocols to create a pervasive network.

Utkarsh Tripathi, First Year, EC-3

RFID TECHNOLOGY

RFID (Radio Frequency Identification Technology) Technology allows non-contact transfer of information (much like the familiar barcode) making it effective in manufacturing and other hostile environments where barcode labels could not survive. RFID involves the use of electromagnetic or electrostatic coupling in the RF portion of electromagnetic spectrum to uniquely identify an object, animal or person . It has established itself in a wide range of markets including livestock identification and automated vehicle identification because of its ability to track moving objects. The technology has also become a primary component of automated data collection, identification and analysis systems worldwide.

An RFID system consists of three components:

1. Transceiver (often combined into the reader).

2. Same sort of data processing equipments such as a computer.

3. Transponder (the tag).

RFID Tag, usually known as transponder, acts as a transmitter as well as the receiver in the RFID System.

The three basic components of the RFID Tag are:

1. An Antenna

2. Microchip (memory)

3. Encapsulating material.

Low Frequency (30 – 500 kHz) RFID Systems have a short transmission range (less than 1.8 meters) while the High frequency (850 – 950 MHz) and (2.4 – 2.5 GHz) RFID Systems offer longer transmission range (more than 27 meters) . In

General , the higher the frequency , the more expensive the system. RFID is sometimes called Dedicated Short Range Communication.

PROS AND CONS OF RFID TECHNOLOGY

PROS:

RFID tags are rugged and robust and can work in harsh temperature and environment. It works at a remarkable high speed.

RFID tags are available in different shapes, sizes and types of material. The information on Read Only tag cannot be altered or duplicated. Read Write tags can be used repeatedly. The RFID tags are always read without any error.

Direct physical contact between the tags and the readers is not required. RF Technology is used for communication.

Multiple RFID Tags can be read at the same time.

RFID System can identify and track unique items unlike the barcode system which shows manufacturer and product type only.

Storage is greater than any other automatic identification and tracking system.

CONS

It is costly compared to other automatic identification systems.

Size and weight of tags is more as compared to barcode system.

There is no way in which damaged tags can be tracked and replaced with tags that are intact.

Although tags do not require line of sight communication, they can be read within a specific range only.

FUTURE Scope: Developments in RFID Technology continue to yield larger memory capacities, wider reading ranges and faster processing. However, it is highly unlikely that the technology will ultimately replace barcode .Even with the inevitable reduction in raw materials coupled with economies of scale, the integrated circuit in the RF tag will never be as cost effective as a barcode label .RFID though. Will continue to grow in its established niches where barcode or other optical technologies are ineffective, such as in chemical container and livestock industries.

Sajida Siddiqui, First Year, EC-3

LiFi THE LATEST TECHNOLOGY IN WIRELESS DATA

Introduction: It was observed that the data can be transmitted through LED light. So, the data will be transmitted through the LED light without any physical optical fiber. If there will be a LED light, there will be data. Meanwhile Steve Perlman of Rearden Labs has introduced another technology named DIDO which will break the Shannon's limit by 100 times. So, in a very short time we are going to forget to connect to internet with the Wi-Fi and we will be used to connect to Wi-Fi through light bulb. Whether you are using the internet in a coffee shop or trying to steal the internet from the next door of your friend or in a conference when you are facing the internet speed problem. As the user increases, the speed of the internet gets decreased. What if the speed gets constant though the user

increases in the place? Through this technique has taken the optical part of the fiber out of the fiber optics and sending the data through light bulbs. It was called D-light through this technique that is almost 10 GB which is better than any of the internet connection. Soling a near future you will see that the street lamps are transmitting data, the headlights of the cars will be also able to transmit data!

Development: Two latest technologies in telecommunication is been revealed in the last decade. It was demonstrated that the data can be transmitted through LED light. So, the data will be transmitted through the LED light without any physical optical fiber. If there will be a LED light ,there will be data. A very short time we are going to forget to connect to internet with the Wi-Fi and we will be used to connect to Wi-Fi through light bulb. Whether you are using the internet in a coffee shop or trying to steal the internet from the next door of your friend or in a conference when you are facing the internet speed problem. As the user increases, the speed of the internet gets decreased. What if the speed gets constant though the user increases in the place?

About LiFi Technology: LiFi is transmission of data through illumination by taking the fiber out of fiber optics by sending data through a LED light bulb that varies in intensity faster than the human eye can follow.

Different uses of LiFi Technology

Technology Demonstration: It was demonstrated that table lamp that successfully transmitted data at speeds exceeding 10Mbps using light waves from LED light bulbs to a computer located below the lamp. To prove that the light bulb was the source of the data stream, he periodically blocked the beam of light, causing the connection to drop. In fact the technology transfers thousands of streams of data simultaneously, in parallel, in higher speeds with the help of special modulation, using a unique signal processing technology.

SOME ASPECTS OF LiFi: The light used to transmit the data is called D-light by Harald Hass, the inventor of LiFi. In future data for laptops, Smartphone's, and tablets can be transmitted through the light in a room by using LiFi. Security would be a snap if you can't see the light, you can't access the data.

Brightness of LiFi Source: The LiFi source has very high lumen density - in other words, a single source, only a few millimeters in size, can produce 23,000 lumens of brilliant white light. At this level of output, you will only need to use one light source per street light in most cases. This makes the mechanical and optical implementation of light
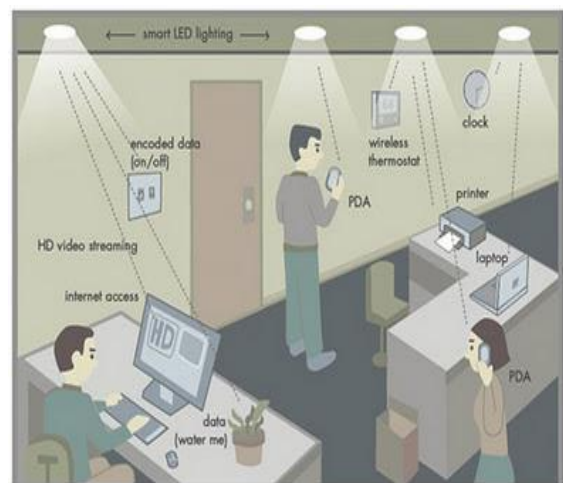
fixtures much simpler and less expensive compared to using a large HID bulb or an array of multiple LEDs that is needed to match this level of luminous output.

Data Transmission Using LiFi: As Wi-Fi hotspots and cloud computing are rapidly increasing reliable signal is bound to suffer. Speed and security are also major concerns. They are vulnerable to hackers as it is penetrate through walls easily. Li-Fi is said to overcome this .This new technology is comparable to infrared remote controls which sends data through an LED light bulb that varies in intensity faster than the human eye can see. In near future we can see data for laptops, smart phones, and tablets transmitted through the light in a room.   Li-Fi technology uses semi-conductor device LED light bulb that rapidly develop binary signals which can be manipulated to send data by tiny changes in amplitude. Using this innovative technology 10,000 to 20,000 bits per second of data can be transmitted simultaneously in parallel using a unique signal processing technology and special modulation. This Li-Fi technology will be really useful on oil rig platforms and underwater application were conventional radio signal can ignite fire due to accidental spark. This Li-Fi technology can be used on aircraft as it cannot interfere with other radio equipment. There is less risk of data leaking out of a house or office. As communication technology is expanding at a rapid pace we are running out of radio frequency spectrum but this new visible light spectrum has 10,000 times more capacity than radio

frequency. Cellular masts or base stations worldwide uses a lot of energy particularly for cooling and it operates at only five percent efficiency whereas Li-Fi technology can transmit data through the 14 billion light bulbs already installed worldwide. So it is virtually free .The whole process of transmitting data through light is more energy efficient than using radio frequency.

Li-Fi technology uses microchip fitted into every lighting device: household lights, street lamps, cell phones, overhead lights on planes, traffic lights such that every bulb can be used something like a Wi-Fi hotspot to transmit wireless data without no additional cost for infrastructure thus turning existing light fixtures from street lamps to Smartphone LED screens into rapidly pulsating data transmitters.

Applications of LiFi: Can be used in the places where it is difficult to lay the optical fiber like hospitals. In operation theatre LiFi can be used for modern medical instruments.

In traffic signals LiFi can be used which will communicate with the LED lights of the cars and accident numbers can be decreased.

Thousand and millions of street lamps can be transferred to LiFi lamps to transfer data.

In aircraft LiFi can be used for data transmission.

It can be used in petroleum or chemical plants where other transmission or frequencies could be hazardous.

Conclusion: The possibilities are numerous and can be explored further. If his technology can be put

into practical use, every bulb can be used something like a Wi-Fi hotspot to transmit wireless data.

Qazi Saeed Ahmad, Senior Lecturer,
ECE Department

MEMS : A Growing Technology

Microelectromechanical systems (MEMS) (also written as micro-electro-mechanical, Micro Electro Mechanical or microelectronic and micro-electromechanical systems) is the technology of very small devices; it merges at the nano-scale into nanoelectromechanical systems (NEMS) and nanotechnology. MEMS are also referred to as micro machines (in Japan), or micro systems technology MST (in Europe).

MEMS are separate and distinct from the hypothetical vision of molecular nanotechnology or molecular electronics. MEMS are made up of components between 1 to 100 micro meters in size (i.e. 0.001 to 0.1 mm), and MEMS devices generally range in size from 20 micro meters (20 millionths of a meter) to a mille meter (i.e. 0.02 to 1.0 mm). They usually consist of a central unit that processes data (the microprocessor) and several components that interact with the outside such as micro sensors. At these size scales, the standard constructs of classical physics are not always useful. Because of the large surface area to volume ratio of MEMS, surface effects such as electrostatics and wetting dominate volume effects such as inertia or thermal mass. The potential of very small machines was appreciated before the technology existed that could make them—see, for example, Richard Feynman's famous 1959 lecture There's Plenty of

Room at the Bottom. MEMS became practical once they could be fabricated using modified semiconductor device fabrication technologies, normally used to make electronics. These include molding and plating, wet etching (KOH, TMAH) and dry etching (RIE and DRIE), electro discharge machining (EDM), and other technologies capable of manufacturing small devices.
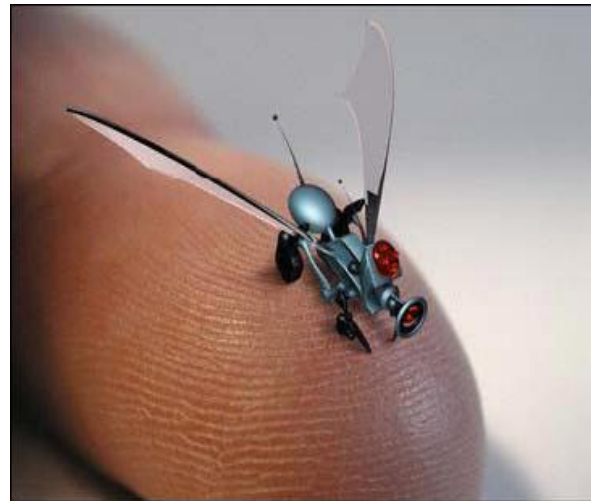
A Nano-Fly based on MEMS Technology

On one viewpoint MEMS application is categorized by type of use.

Sensor

Actuator

Structure

In another view point MEMS applications are categorized by the field of application (commercial applications include):

Accelerometers in modern cars for a large number of purposes including airbag deployment in collisions.

Accelerometers in consumer electronics devices such as game controllers (Nintendo Wii), personal media players / cell phones (Apple iPhone, various Nokia mobile phone models, various HTC PDA

models) and a number of Digital Cameras (various Canon Digital IXUS models). Also used in PCs to park the hard disk head when free-fall is detected, to prevent damage and data loss.

MEMS gyroscopes used in modern cars and other applications to detect yaw; e.g., to deploy a roll over bar or trigger dynamic stability control

MEMS microphones in portable devices, e.g., mobile phones, head sets and laptops.

Silicon pressure sensors e.g., car tire pressure sensors, and disposable blood pressure sensors

Optical switching technology, which is used for switching technology and alignment for data communications

Bio-MEMS applications in medical and health related technologies from Lab-On-Chip to MicroTotalAnalysis (biosensor, chemosensor)

Interferometric modulator display (IMOD) applications in consumer electronics (primarily displays for mobile devices), used to create interferometric modulation reflective display technology as found in mirasol displays

Fluid acceleration such as for micro-cooling

Companies with strong MEMS programs come in many sizes. The larger firms specialize in manufacturing high volume inexpensive components or packaged solutions for end markets such as automobiles, biomedical, and electronics. The successful small firms provide value in innovative solutions and absorb the expense of custom fabrication with high sales margins. In addition, both large and small companies work in R&D to explore MEMS technology.

Piyush Charan, Assistant Professor, ECE Department

Semiconductors Grown On Graphene

Researchers at the Norwegian University of Science and Technology (NTNU) have patented and are commercializing GaAs nanowires grown on graphene, a hybrid material with competitive properties. Semiconductors grown on graphene are expected to become the basis for new types of device systems, and could fundamentally change the semiconductor industry. The new patented hybrid material offers excellent optoelectronic properties, says Professor Helge Weman, a professor at NTNU's Department of Electronics and Telecommunications, and CTO and co-founder of the company created to commercialize the research, CrayoNano AS. "We have managed to combine low cost, transparency and flexibility in our new electrode," he adds. The patented method of growing semiconductor nanowires on atomically thin graphene uses MBE (Molecular Beam Epitaxy) to grow the nanowires.

Sunny outlook for nanowires : "Graphene is experiencing tremendous attention worldwide," Weman says. "Companies like IBM and Samsung are driving this development in the search for a replacement for silicon in electronics as well as for new applications, such as flexible touch screens for mobile phones. Well, they need not wait any more. Our invention fits perfectly with the production machinery they already have. We make it easy for

them to upgrade consumer electronics to a level where design has no limits." This invention is thus thought to be an enabler for a future platform for electronics and optoelectronics devices. One possible device with very large market potential is a nanowire solar cell. This type of solar cell has the potential to be efficient, cheap and flexible at the same time. The invention also makes it possible to imagine a future with self-powered nanomachines and advanced 3D integrated circuits built on graphene and semiconductor nanowires, enabling smaller and more efficient electronics. Semiconductors grown on graphene could become the basis for new types of device systems, and could transform the semiconductor industry by introducing graphene as a preferred substrate for many applications.

Salman Parwez, Third Year, EC-2

Mind of the MILLENIUM teen

Say mom, did you have electricity when you were growing up?" Twelve-year-old Aditya throws a casual query at his 38-year-old mother during a power cut. Even before the bemused mother can revert, the backup inverter springs into action and her son is once again immersed in his online game, competing against friends in multiple locations, most of whom perhaps have no idea how growing up in the 1900s a different century for them was like. These kids a generation born in 2000 would, by next year, be the millennium's first teens. Their arrival in the world roughly coincided with the dawn of the information age the internet implosion,

google search, mobile phones, glitzy malls stuff that was not available even to their immediate predecessors growing up barely a decade before in the late 1990s.

It's a generation, then, that has seen a completely different picture of the world which has accordingly shaped its world view. That it's a smarter generation is largely due to its fascination some would even say obsession with technology. Shivank Srivastava, a 12-year old student of Class VII at City Montessori School, says he was fascinated by mobile phones ever since he was a baby. He now uses a Samsung Galaxy smartphone and aspires for a S3 "This is a generation that has trained in a new kind of literacy, which involves technology extensively. For them, information and technology are commodities. They'd die of boredom if deprived of either commodity."

The solution to boredom, in the tween manual, is the golden 'F' word. Facebook is the alternate world which every kid below 13 aspires to reach. What makes it cooler is that it's officially off-limits to them. But it's a restriction that's easily bypassed. Impatient and restless may be the words that older generations may use to describe the millennium's first teens, but there's no denying that they symbolize the way society, and indeed, life has changed around the world. "The teenager of the 2000 series of years is essentially a very different animal," The feeling that life is tough, is not ingrained as much into them as it was even a few years back among those their age. "Today's kids are born in an era of relative plenty", They have not

seen strife or heard war sirens that made many children scurry into dug-outs in their schools in 1971. Nor is it a generation that has faced sugar or rice shortage. The consumer of this generation is therefore oriented to a greater degree of easy life, wants comforts, seeks out shortcuts and believes in intelligent work rather than hard-work. As these tweens emerge as millennium teens, the future would in all likelihood remember them as products of a generation that drastically altered the way in which information is not just consumed, but also produced. One only hopes, though, that they concede this point to those of us from an earlier, slower generation that however unbelievable it may sound, the rest of us are not from the dark ages and that we indeed did have electricity while growing up.

Shipra Srivastava, Third Year, EC-2

Memristors

'Memristors' based on transparent electronics offer technology of the future. The transparent electronics that were pioneered at Oregon State University may find one of their newest applications as a next-generation replacement for some uses of non-volatile flash memory, a multi-billion dollar technology nearing its limit of small size and information storage capacity. Researchers at OSU have confirmed that zinc tin oxide, an inexpensive and environmentally benign compound, has significant potential for use in this field, and could provide a new, transparent technology where computer memory is based on resistance, instead of an electron charge. This resistive random access memory, or RRAM, is referred to by some researchers as a "memristor". Products using this approach could become even smaller, faster and cheaper than the silicon transistors that have revolutionized modern electronics and transparent as well. Transparent electronics offer potential for innovative products that don't yet exist, like information displayed on an automobile windshield, or surfing the web on the glass top of a coffee table. "Flash memory has taken us a long way with its very small size and low price," said John Conley, a professor in the OSU School of Electrical Engineering and Computer Science. "But it's nearing the end of its potential and memristors are a leading candidate to continue performance improvements". Memristors have a simple structure, are able to program and erase information rapidly, and consume little power. They accomplish a function similar to transistor-based flash memory, but with a different approach. Whereas traditional flash memory stores information with an electrical charge, RRAM accomplishes this with electrical resistance. Like flash, it can store information as long as it's needed. Flash memory computer chips are ubiquitous in almost all modern electronic products, ranging from cell phones and computers to video games and flat panel televisions. Some of the best opportunities for these new amorphous oxide semiconductors are not so much for memory chips, but with thin-film, flat panel displays, researchers say. Private industry has already shown considerable interest in using them for the thin-film transistors that control liquid crystal displays, and

one compound approaching commercialization is indium gallium zinc oxide. But indium and gallium are getting increasingly expensive, and zinc tin oxide – also a transparent compound – appears to offer good performance with lower cost materials. The new research also shows that zinc tin oxide can be used not only for thin-film transistors, but also for memristive memory.

Swechchha Santosh, First Year, EC-3

Faculty Invited as Resource person

One day seminar on Matlab given by N R Kidwai in August 2011 at AIET, Lucknow.

Summer Lecture Series 2012

S. No.	Name of Faculty	Topic
1	Prof(Dr.) T. Usmani	Solar Photovoltaic System & Design.
2	Dr. S. H. Saeed	Taste Sensor
3	Mr. Monauwer Alam	Bluetooth and Wi-Fi
4	Mr. Saifur Rahman	E -Waste
5	Mr. M.Y.Yasin	Scientific Calculator and the Skill of Efficient Computation
6	Mr. Shailendra Kr. Singh	3D Video Processing in Handheld Application
7	Mr. N.R. Kidwai	Mobile Communication
8	Mrs. Saima Beg	Digitally Controlled Voltage and Current Mode biquadratic filter
9	Ms. Firdaus Majeed	Nokia Morph Technology-Future of Nano Technology
10	Mrs. Nupur Mittal	High Performance Current Controlled Conveyor(CCCII) & Its Applications Based On 350nm CMOS Technology
11	Mr Ahmad Nafees	Wireless Sensors Networks :An Overview
12	Ms. Mani Rajput	Wireless Power Transmission
13	Ms. Nooreen Fatima	Space Communications
14	Mr. Ayan Mustafa Khan	Hybrid Solar Device
15	Mr. Mohd. Suhaib Kidwai	Smart Dust
16	Mr. Qazi Saeed Ahmed	Optical Fiber Communication
17	Mr. Maroof Siddiqui	Electronics Signal Help in the Treatment of Paralysis
18	Mr. Hasin Alam	Earth's Atmosphere and Its Role in Communication
19	Ms. Tarana Chandel	Detection of cardiac disease and its remedies

Books Authored
Basic System Analysis by Dr. S. Hasan Saeed by Katson Publication (in Press)

Reviewer Appointed
Mr. Mohd Maroof Siddiqui appointed as reviewer in International Journal of Advanced Computer Research from Sep 2011.

Books Reviewed
Reviewed a book entitled "Electronic Devices and Circuits, 2e" by Salivahanan, Tata Mcgraw hill Publication

Campus Selection (2011-2012)
22 selected in companies like TCS, Syntel etc.

M.Tech Awarded
Ms Saima Beg
Ms Nupur Mittal
Ms Firdaus Majeed

Professional Membership
Life membership as fellow of IETE (Dr S. Hasan Saeed)

Publication and presentation by the Faculty Members -2011-2012

International Journal

- **Mohd Yusuf Yasin '**Low power resistance free multiphase oscillator based on the Translinear type CCCII in 45 nm CMOS", Int. Journal of Electrical Engineering, Bangladesh, May-2012.
- **M.Y.Yasin,** "Scientific Calculators and the Skill of Efficient Computation, BIBECHANA, A Multidisciplinary Journal of Science, Technology and Mathematics, Nepal", BIBECHANA Vol. 8, 2012, pp. 31-36, ISSN 2091-0762 (online). http://nepjol.info/index.php/BIBECHANA

e-Blitz

- **Firdaus Majeed and M.Y.Yasin,** "A Novel Voltage Comparator and its application – A New simple configuration based on 45nm 2nd Generation Current Controlled Current Conveyor"**,** Acta Electrotechnica, volume 53, Number 2, 2012, pp 112-114
- **Maroof Siddiqui,** "Electronics Signal Help in the Treatment of Paralysis", International Journal of Electronics Signal & System ISSN No (online and printed): 2231-5969, volume 1 issue 2, 2012.
- **Maroof Siddiqui,** "Electronics Instruments Play Major Role In Diagnosis Processes" International Journal of Computing and Corporate Research,,ISSN No (Online): 2249-054X, volume 2 issue 1, 2012
- **Maroof Siddiqui,** digital library & Google E book Vision of 5G Communication ,Springer ,ISSN No 1865-0929, EISBN 1865-0937 , volume 169 issue 2, 2011.
- **Firdaus Majeed, M Y Yasin, ,** "Quadrature Oscillator – A New Simple Configuration Based On 45nm 2nd Generation CMOS Current Controlled Current Conveyor", Int. Jn. of Information and Computation Technology (IJICT), Paper code 11235, Nov 2011
- **Yasmeen Hasan,**"Power Aware Physical Model for 3D IC's"**,** International Journal of VLSI design & Communication Systems (VLSICS), Vol.2, No. 3, Sep 2011.

International Conference

- **Anand Mohan Misra, Maroof Siddiqui, Syed Hasan Saeed and Pameer Singh** The Blue Eye Technology (Co-Author), 6th International Multiconference on Intelligent Systems & Nanotechnology (IISN-2012), Institute of Science and Technology Klawad (Haryana), on March 16–18, 2012
- **Nupur Mittal, Firdaus Majeed, Hasin Alam,** A Novel simple current amplifier and voltage amplifier based on 350nm using second generation Current Controlled Current Conveyor(CCCII),International Conference on VLSI, MEMS & NEMS (VMN-2012) at Amity School of Engg&

Technology,Amity University Lucknow U.P.

- **Firdaus Majeed, Nupur Mittal, Hasin Alam, "**Redesign of Current Controlled Conveyor (CCCII) & its digital application in 350nm CMOS technology", International Conference on Emerging Trends in Engg& Technology (ETET-2012) at College of Engg Teerthankar Mahaveer University, Moradabad.
- **Naimur Rahman Kidwai, Monauwer Alam, Ekram Khan and Rizwan Beg,** "A Fast And Memory Efficient Wavelet Based Set Partitioned Embedded Block Image Coding Algorithm", IEEE International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT 2011), pp 320-323
- **Maroof Siddiqui,** "Electronics Signal Help In The Treatment of Paralysis", International Conference on Electrical and Electronics Engineering (ICEEE-2011), Interscience Institute Of Management & Technology, Bhubaneswar on 22nd October, 2011
- **Maroof Siddiqui**,
- **"**Vision of 5G Communication", International Conference on High Performances Architecture & Grid Computin(HPAGC-2011) , Chitkara University, Chandigarh, Punjab on 19th July, 2011

National Conferences

- **Qazi Saeed Ahmad, Mohd. Suhaib Kidwai, Maroof Siddiqui,** "A Salt And Paper Battery", National Conference NCRAE12,Sanjeevan Engineering & Technology Institute, Panhala, 2012.
- **Mohd. Suhaib Kidwai, Maroof Siddiqui and Ayan Mustafa Khan "**A overview of Artificial Heart", ,National Conference, DBIT, Dehradoon, 2012
- **Qazi Saeed Ahmad, Mohd. Suhaib Kidwai, Maroof Siddiqui** "An Overview of Computer Clouding',National conference,"ETEIC2012" Anand Engineering College, Agra.

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Participation in Seminar/ Conference/Workshop/ Symposia/STC/FDP

- Participation and Paper Presentation by **Nupur Mittal, Firdaus Majeed, Hasin Alam,** International Conference on VLSI, MEMS & NEMS (VMN-2012) at Amity School of Engg& Technology, Amity University Lucknow U.P
- Participation and Paper Presentation by **Qazi Saeed Ahmad, Mohd. Suhaib Kidwai, Maroof Siddiqui in** National conference, "ETEIC2012"Anand Engineering College, Agra.
- Participation and Paper Presentation by **Qazi Saeed Ahmad, Mohd. Suhaib Kidwai, Maroof Siddiqui, in** National Conference NCRAE12,Sanjeevan Engineering & Technology Institute, Panhala, 2012.
- Participation and Paper Presentation by **Mohd. Suhaib Kidwai, Maroof Siddiqui and Ayan Mustafa Khan in** National Conference, DBIT, Dehradoon, 2012

Special Lecture/ Seminar/ Workshop Organized (2011-12)

Date	Topic	Resource Person/ Company
01Sep'11	Spread Spectrum Techniques	Mr G K Tripathi, Dy. Director, RCMA, DRDO, LUcknow
09Sep'11	Error Control Coding and Cryptographic Techniques	Prof M. U. Siddiqui Ex. Professor, IIT Kanpur
25 Feb '12	PLC, SCADA, VFD, panel design	Logicon Automation, Lucknow
01Mar '12	IEEE based life projects	Mr Ram Bhatia, Edgeflex Technologies Pvt. Ltd. Hyderabad
14Mar'12	Embedded system	Mr Rohit Mehrotra, Territory Manager of CETPA, Lucknow

Annual Sports Meet

Participation in various games in Annual Sports meet organizes at I.U, Lucknow

Gate scorers in the year 2011-'12 .

1. Mohit Srivastava
2. Priya Gupta
3. Faisal Ahmad
4. Mohd. Shabbir Alam
5. S.Mohd Farhan
6. Nadeem
7. Sonu Kumar
8. Saurabh Tripathi
9. Purushottam
10. Shivakant Srivastava
11. S. Danish Kamal

Educational Tour/ Camp, 2011-2012

on 28-29th Sep.'11 Education tour (Final Year) in facilities of L& T Switchgear Lucknow.

Other Achievements

- Firdaus Majeed received, III rd prize in students Master's Thesis contest by IEEE-IAS, in annual meet 2011, Orlando USA
- Mr Syed Mohd Farhan ranked First in university Exams at UG Level

ELECTROFISHAAN, the departmental Society
Electrofishaan is a departmental society of ECE/EI and is taken care by a faculty member i.e. the society in charge and together with his/her effort and nourishment and cumulatively of the department has lead it into a tree with ripen fruits . The main aim of this society is to highlight the hidden talent and knowledge of the students which they posses but are shy to express. Through this they get a platform to show their capabilities to everybody and along with this to develop a personality in them.The various events which is held are as follows:-

- Debate: - In this few topics on current affairs are selected and the participants has to talk either for the motion of the affair or against the motion. Each participant is given a fixed time and on the basis of time, content of the

matter, speaking skill he/she is judged. Jury is so selected that various faculty members from different departments are invited to act as judge on the day of the event.

- Technical Poster Presentation:-This is the most interesting and creative event. In this few technical themes are selected and students are suppose to make posters on these themes. The best poster is selected by the judges.

- General Quiz:-This event is open for all branches. Students from various branches participate and win prizes. In this quiz questions related to general affairs are taken i.e. they can be from political sciences, history, geography etc. So in this way, along with his/her engineering studies, the student also gains knowledge of the current n past affairs of the world.

- Electronics Quiz:- In this , questions are only related to electronics .So only those who belong to electronics and communication branch can participate.

- Extempore:-This event basically deals with the speaking skill. In this at instant a random topic is picked up by the participant in front of the jury and the participant have to think regarding what he/she will be speaking and have to immediately speak out his/her thoughts. Judging is done on the basic of ideas and on the speaking skill.

- Best Project Award:-The most interesting event of the year is best project award. This event is open only for engineering final year student of ECE/EI. All the students of final year toil round the year, running here and there in collecting every piece of knowledge and ideas to give shape to their projects ,finally the day has come when their projects are being judged by our well qualified and knowledgeable jury. After the decision of the jury best three projects are selected among all of them.

- Paper presentation:-An event named paper presentation is the most technical event and also gives a tough competition among the participants. Paper has to be in IEEE standard format which is given to the students. After that the participants are suppose to present their paper in power point presentation form. In this way the students learn various softwares that may help them in future.

Electrofishaan has worked and is still working for the welfare of the students. Welfare in the form of upgradation of knowledge through various technical events, personality development and development of speaking skills and last but not the least courage of facing the crowd.

Finally after the end of each year there comes the grand prize distribution ceremony.Our honourable Vice Chancellor mark his presence and make this prize distribution ceremony a memory to cherish since the students gets an opportunity to get prizes from him.First position holder receives a gold medal and a certificate , second gets silver medal and a certificate and the third one gets bronze medal and a certificate .The fourth and fifth position holders get certificate of appreciation.

Finally this marks end of the annual program of electrofishaan.