SARANATHAN COLLEGE OF ENGINEERING PANJAPPUR, TRICHY



DEPARTMENT OF

ELECTRONICS AND COMMUNICATION ENGINEERING

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Vision of the Department

To become a leading department of Higher Learning and a Research Center of Excellence in Electronics and Communication Engineering.

Mission of the Department

M1: To enable budding engineers to obtain technical exposure in various areas of Electronics and Communication Engineering.

M2: To nurture career improvement.

M3: To initiate and sustain research activities in the department in cutting edge areas of Electronics and Communication Engineering.

M4: To develop professional and ethical attitude in the students.

Program Educational Objectives (PEOs)

The Graduates of Electronics and Communication Engineering will

PEO1: have a *strong foundation* in the required *sciences* in order to pursue studies in Electronics and Communication Engineering.

PEO2: have a *broad exposure* in various topics related to Electronics and Communication Engineering fields, to enable them to excel in their professional career / higher studies.

PEO3: possess *innovative skills* in order to solve the technical problems which will arise in their professional life. **PEO4:** have *professional and ethical* attitude and an ability to visualize the engineering issues in a broader social context.

Program Specific Outcomes (PSOs) Graduates of Electronics and Communication Engineering will be able to:

PSO1: Comprehend and demonstrate the principles and concepts of Semiconductor theory, Signal Processing & Embedded systems in the fields of Consumer Electronics, Medical Electronics and Defense Electronics.

PSO2: Apply emerging Information and Communication Engineering Techniques to solve real time problems.



FROM THE HOD'S DESK...

I am very enchanted that our ECE department is releasing our department e-magazine version. 13 named "WIZARDZZ V.13" for the odd semester of

2018-2019. Department of ECE has been releasing e-magazine once per semester since October, 2012. This e-magazine is surely a channel to prove the hidden talents of both our faculty members and our students not only in technical but also in literature. Our ECE Department aims at keeping students abreast of the current technological trends and due consideration is also paid to enhance their skills in communication, fine arts, etc. I hope this e-magazine provides an opportunity to the students and staff members to lend free expression to their pioneering and imaginative thoughts. This e-magazine plays an active role in gaining latest developments in the field of Engineering and also presents the achievements of the department. This e-magazine would surely help in building our promising Engineers to become expertise in the field of Electronics and Communication Engineering. This e-magazine is the window to our departmental activities. This e-magazine includes a wide range of facts, riddles, quotes, paintings and some informative and inspirational articles apart from technical articles. A flower makes no garland. This magazine is not the outcome of the effort put in by an individual. I extend my sincere thanks to the persons who have contributed to this issue and enhance its perfection and beautification through their articles. I congratulate the entire editorial team for their hard work and dedication that has resulted in the publication of this issue of our department e-magazine WIZARDZZ v13.0.1 wish them All the Best for all their future accomplishments.





" End is not the end, if fact E.N.D. means "Effort Never Dies" - Dr.A.P.J.ABDUL KALAM

FROM THE EDITORIAL BOARD The phenomenal growth of our department in the recent days in terms of academic as well as extra and co- curricular activities is a saga of unstinted efforts of all of us. The editorial team takes great pride in putting light on all these achievements through WIZARDZZ V.13.This issue contains original, commissioned feature articles on a variety of subjects of Interest to curious pupil with a technical as well as non-technical bent . It also showcases the photo graphy & Picasso skills of our students. If you don't find yours this time, don't give up. Keep us fledged with your articles as usual. So, feel proud to surf through the pages of WIZARDZZ. We indeed take pleasure in thanking our HOD DR M.SANTHI and our beloved DR S.A.ARUNMOZHI mam for giving us this wonderful opportunity. Most important of all don't forget to post us your valuable feedback!!!

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GUEST LECTURES

- "Automotive Electronics- Technologies and Trend" on 51st Engineers Day 15.09.2018 by Shri . Madhanraj Chelladurai, Senior staff, Qualcomm India Pvt. Ltd., Bangalore.
- "DSP Concepts in Industries" on 29.08.2018 by Shri. B.Madhan Mohan, Jasmin Infotech, Chennai.
- "DEVOPS " on 18.08.2018 by Shri . Ganesh Kumar B, Senior DEVOPS Lead , INTUIT, Mountain VIEW, California- U.S.
- "Time Management" on 30.08.2018 by Dr.K.Karthikeyan, HOD, Department of Management Studies, SCE.





▷N.Poornima, Dr. M. Santhi, G. Seetharaman and TughrulArslan, "R3TOS BASED PARTIALLY RECONFIGUREABLE DATA FLOW PIPELINED NETWORK ON CHIP", in NASA / ESA Conference on Adaptive Hardware and Systems, The University of Edinburgh, UK., from 6.8.2018 to 9.8.2018

>N.Poornima, Dr. M. Santhi , G. Seetharaman and TughrulArslan, "APPLICATION DEFINITE FAULT RESISTANT TOPOLOGY FOR IOT NETWORKS', International Conference on Advanced Computing & Communication Technologies, ECE Paris , France.

≻G. Prathiba and Dr. M. Santhi, "DESIGN AND IMPLEMENTATION OF RELIABLE FLASH ADC FOR MICROWAVE APPLICATIONS", Elsevier Journal on Microelectronics Reliability, Vol.88-90, pp.91-97, September-2018.

➤G. Prathiba, Dr. M. Santhi and Ahilam Appathurai , "AN EFFICIENT THRESHOLD TRANSPOSED APPROXIMATION ARCHITECTURE OF FLASH ADC IN VLSI", IEEE Conference, in GRT Engineering College on 7.9.2018 and 8.9.2018. Dr.C. Vennila, "ENCHANTED MIMO NETWORK SIMULATOR COMMUNICATION IN WIRELESS SENSOR NETWORK", in IETE TECHNICAL REVIEW, Vol.35, no.6, August -2018.

Ms. V. Ramya, "DESIGN OF A MONOPOLE ANTENNA IN TWO OPERATING STATES", International Journal of Multidisciplinary Research and Modern Education, Vol.5, no.1, June-2018.

Ms. V.Ramya, Ms. R Devi, "IOT BASED RICEPLANT DISEASE MONITORING AND CONTROLLING USING ESP MODULE", International Journal of Advanced Research Trends in Engineering and Technology, Vol.5, no.5, May-2018.







Mr. K Malaisamy has attended six days workshop on Optimization Techniques in Antenna Design at E&ICT Academy, NIT-Warangal-T.S from 25.6.18 to 30.6.18

Mr. K Malaisamy has attended Workshop on Phased Array Design Simulation organised by Institute of Technology and applied Research, Coimbatore with Keysight Solution on 02.07.2018

Mr. V Dinesh has attended six days FDP on EC6504-Microprocessor & Microcontroller in CEG, Chennai from 31.05.2018 to 05.06.2018

Mr. G Sivakannu has attended workshop on convex optimization in 5G wireless Communication, Conducted by Thiyagarajar College of Engineering, Madurai from 21.06.2018 to 23.06.2018

Mr. V. Koushick has attended workshop on Optimization in Techniques in Antenna Design at E&ICT Academy, NIT-Warangal-T.S from 25.6.18 to 30.6.18

EVENTS CONDUCTED IN ECE DEPARTMENT

S.No	Title of course	Participants	Duration
1	Introduction to machine learning teachniques using MATLAB	Third year	14.06.2018 - 18.06.2018
2	Hands on training on Domestic and Industrial Systems Automation using Proteus Software.	students	04.06.2018 - 07.06.2018
3	Design of Digital system using Verilog HDL	Second year	14.06.2018 - 18.06.2018
4	Hands on Training on Python Programming	students	04.06.2018 - 07.06.2018
5	Guest lecture on Time Management	Final year students	30.08.2018
6	LED driver topologies		27.07.2018

S.No	Title of course	Participants	Duration
7	DSP concepts in Industries	Third year students	29.08.2018
8	Guest lecture on "DEVOPS"	Students	18.08.2018
9	Guest Lecture on Automotive Electronics- Technologies and Trends	Final year students	15.09.2018
10	MINI project contest	Second year students	15.09.2018
11	Recent Trends in Electronics and communication Engineering –Paper presentation	Third year students	15.09.2018



Irene Naveena and N.Archana of third ECE A won 1st prize in the PAPER PRESENTATION event on Engineer's day, held at Saranathan College of Engineering.

P.Catherine Joyce and M.Dhanvarshini of third year ECE A won 2nd prize in the PAPER PRESENTATION event on Engineer's day, held at Saranathan College of Engineering.

B.P.Saren Kumar, B. Saravana kumaran and
 K.Manishankar of third ECE B won 1st prize in the PAPER
 PRESENTATION event on Engineer's day , held at Saranathan
 College of Engineering.

A.Kesavan, A.Mohamed Javith and T.Mahesh of third year ECE B won 2nd prize in the PAPER PRESENTATION event on Engineer's day , held at Saranathan College of Engineering. Ashif Ameer of third ECE A secured 1st PLACE.
 In Circuit Debugging in MAM COLLEGE OF ENGINEERING.

- S.Kavitha and A.Keerthana of third year ECE won
 1st prize in the GOOGLER event of PREZTO 2K18 in
 K.Ramakrishna College of Technology.
- Ganesh, Dinakaran, Joshua, Anantha Krishnan of third ECE A secured 1st PLACE in MINI PROJECT EXPO held at Saranathan College of Engineering.
- P.Anushiya,A.Abarna,K.Deepika of third ECE A secured 2nd PLACE in MINI PROJECT EXPO held at Saranathan College of Engineering.

 A.Kesavan, T.Mahesh , P.Hariprasad and P.Mohan of third ECE B secured 1st PLACE in MINI PROJECT EXPO held at Saranathan College of Engineering.

 V.Pavithra, K.Srinithi and P.Shruthi of ECE B won
 2nd PRICE in MINI PROJECT EXPO in Saranathan College of Engineering .

Varun Baskar, Joe Antanie, Rahul and SivaSankar of second ECE B secured 1ST PLACE in MINI PROJECT EXPO held at Saranathan College of Engineering.

Rehana Begam, Roshini, Vedhika Lakshmi & Priya
 Dharshini of Second ECE B secured 1ST PLACE in MINI PROJECT
 EXPO held at Saranathan College of Engineering.

- Joe Antanie of Second ECE won the BRONZE medal in discus throw at Anna University Zonal Atheletics meet held at J.J. College of Engineering, Trichy on 10.10.2018.
- Illakkia, Maheshwari, Dhivya prahba, Pavithra, Teena Tiffany Edith, Ezhil Mani, Janithaa Secured RUNNER-UP positions in the "Volley ball Meet (AU Zone)", Saranathan College of Engineering.



INPLANT TRAININGS

 MOHAMMED JAVITH, R.SELVA KUMAR, B.P.SAREN KUMAR, K.MANISHANKAR and B.SARAVANA KUMARAN, P.B. SRINIDHI, P.SRUTHI and S.V. SUBIKSHA of Third ECE B attended INPLANT Training in BSNL.

2. GANESH, DINAKARAN, JERALD JOEL, JOSEPH BRIGHTON of Third ECE A attended INPLANT in CODEBIND.

3. DHINAKARAN, DEEPIKA.S, CATHERINEJOYCE, DHANVARSHINIU.M, K.DEEPIKA, P.ANUSHIYA, A.ABARNA, L.ARTHI, V.DHURGA SREE SWETHA, CLAUDIUS GRACE of Third ECE A attended INPLANT Training in BSNL.

4. SWARNAA.R of ECE B attended INPLANT Training in HAPP FACTORY.



NAME OF THE STUDENT

NAME OF THE WORKSHOP

INSTITUTION

D.ABINAYA, K.SHWATHI, T.SHAKTHI, G.SRISWARNA, K.RAJALAKSMI, D.AISHWARYA, N.SIVASANKAR, B.RAHUL, A. M.JOE ANTONIE, PREMKUMAR, 2 nd year.	IOT WORKSHOP	IIT MADRAS TARAMANI
SHAIK AYESHA KAREEMA 2 nd year	IOT WORKSHOP	MIT CHENNAI
JAYAPREETHA 2 nd year	IOT WORKSHOP	AMRITHA COLLEGE OF ENGINEERING , CHENNAI



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Technical Course

Non echnical Course

Laser Communication

M . Leo Tamizhazhagan II ECE B

Laser Communication System works on the principle of "Amplitude Modulation" process. In this the amplitude of the carrier is varied according to the instantaneous amplitude of the modulating signal (Input Signal).Laser communication is a wireless connections through the atmosphere, they work similar to the fiber optic links, but the beam is transmitted through free space. The sender and receiver have the benefit of eliminating the broadcast rights. These are less expensive, require less power and are more efficiency. The carrier used for transmission is typically generated by a laser diode. These kind of communication system highly satisfies the increasing band width demand. Since laser is not easily affected by other energies, they are highly adorable for Safe, quick and it transmit signals with very less distortion. Laser communication is also being planned to use in Deep sea exploration and Deep Space exploration . Since normal way of communication is not much adorable for Space and deep sea missions, laser communication makes it much more possible and Easier. At earlier Lunar Laser Communication Demonstration(LLCD) is used to transmit data between lunar orbit and Earth, after the success of this trail NASA and other Space agencies where trying and using this type of communication.

INTERPLANETARY COMMUNICATION:

Laser Communication also enlarged its circle for Interplanetary signal transmission and data transfer. We all on the race towards MARS to be successful in this race laser communication can be very helpful. Since it takes much time for Data transmission between Satellites in Outer space and Other Planets, Laser communication is a better way to solve this problem with less Damage in transmitted signals. NASA with LCD developed a narrow –beam laser version for Deep sea Transmission . Laser communication can also be used in signal transfer in Air Planes and Ships, we always come across Plane what happened, several investigations concluded that, it may lost during the time gap between switching signals from stations, this switching time gap and chance of missing signals accident and Missing of ships at the time of interchanging the connection between stations, this is being a Great problem during several Travels, and even a signal of a plane can be cut off and hijacked by terrorists, this also can be solved by using Laser Communication system. We know the Malaysian Plane which have been lost in mid Air and none of us known be avoided using Laser Communication

COMMERCIAL USAGE:

China is trying to use Laser communication System commercially offering people 1GB per second speed Internet connection. They have planned to place antennas at certain places to receive and send signals at very high speed . It can also serve as a common network to send and receive all kind of signals. So, laser communication one of the new developing way of communication in this modern world.







P. SARANYA III ECE B

INTRODUCTION:

Skinput is a technology which uses the surface of the skin as an input device. It was developed by Chris Harrison, Densely Tan, and Dan Morris of the Microsoft Research's Computational User Experiences Group (MRCUEG). Skinput allows the user to simply tap their skin in order to control audio devices, play games, make phone call. It uses the sensors to determine where the user taps on their skin.

PRINCIPLE:-

Skinput responds to the various hand gestures and It listens to vibrations of the body through arm . What is arm? The arm is an instrument . Arm band detects the acoustic signals and convert them to electronic signals which easily enable the users to perform simple tasks as browsing through a mobile phone menu, making calls, controlling portable music players, etc..

IMPLEMENTATION

Projector display image on arm

Finger tap on arm

Electronic signals produced in the form of music

then detected by detector in armband vibrations produced and passed through bones onto skin
Applications Mobiles Gaming I-pods ADVANTAGES

No need to interact with the gadget directly.
Don't have to worry about keypad.
People with larger fingers get trouble in navigating tiny buttons and keypads on mobiles. With skinput this problem disappears.



DRAWBACKS

Though the band seems easy enough to slip on, many people would not wear a very big band around their arm for the day.
Not enough research has been conducted on this product to test the possible skin diseases or types of cancer, one can get from using this product.

•This technology might start up at very high cost which will not be affordable for the common man.

WARNING



ORGANIC ELECTRONICS

REMARKE

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R.SWARNA III ECE B

Organic electronics What is organic electronics ? organic – carbon based small molecules or polymers Possess conductive property Developed by organic and polymer chemistry FEATURES

Mechanical flexibility
High thermal stability
Electrical conductivity
Possibility of new application

TYPESMolecular solids and saltsConductive polymers



MOLECULAR SOLIDS:-

A molecular solid is a solid consisting of discrete molecules. The cohesive for ces that bind the molecules together are van der Waals forces, dipole-dipole interactions, quadrupole interactions, π - π interactions, hydrogen bonding, halogen bonding, London dispersion forces, and in some molecular solids, columbic interactions . In these Vander Waals, dipole interactions, quadrupole interactions, π - π interactions, hydrogen bonding, and halogen bonding (2-127 kJmol-1) are typically much weaker than the forces holding together other solids .

CONDUCTIVE POLYMERS:-

Conductive polymers or intrinsically conducting polymers (ICPs) are organic polymers that conduct electricity. This Polymer have metallic conductivity. The biggest advantage of conductive polymers is their processability. Conductive polymers are generally not thermoplastics, i.e., they are not thermoformable. They can offer high electrical conductivity but do not show similar mechanical properties of other commercially available polymers.

APPLICATIONS









THE BIONIC EYE

K. Esther Nisha III ECE A



BIONIC EYE :-

It's an artificial eye which provide visual sensations to the brain. This eye consist of electronic systems having image sensors, microprocessors, receivers, radio transmitters and retinal chips . This technology help the blind people to get vision again .

WORKING:

This eye consist of a computer chip which is kept in the back of effected person eye and linked with a mini video camera built into glasses. Then an image captured by the camera are focused to the chip which converts it into electronic signal that brain can interpret. The images produced by Bionic eye were not be too much perfect but they could be clear enough to recognize. The implant bypasses the diseased cells in the retina and go through the remaining possible cells



The retina at the back of the eye contains light detecting cells called photoreceptors. These cells convert light energy into electrical energy, which is transmitted to the brain via several layers of retinal nerve cells. In several forms of blindness, such as age related macular degeneration and retinitis pimentos, the photoreceptors die but leave the other nerve cells in tact. While those nerve cells cannot detect light themselves, they can respond to electrical stimulation. The NVRI is involved in research to develop prosthetic vision devices, often referred to as 'bionic eyes'. A bionic eye is constructed from an array of stimulating electrodes.



APPLICATIONS :-

 Future of Inspection & Surveying By combining the best cameras, bespoke rigs and image technology with unmanned vehicles (aerial, cable and ground-based) and our own pinpoint modeling technology we offer a wide range of industry-specific solutions crafted to our clients specific individual needs. Constantly pushing not only the bounds of technology but also pioneering the use of unmanned vehicles for access to difficult, dangerous or otherwise expensive as sets. From our creative background in the film industry we genuinely feel we can produce the most stunning visual imagery and are sure we have the UK's only survey grade, aerial LiDAR solution. We are also working with world leading equipment manufacturers to build bespoke aerial systems for their equipment, either in a consultancy role or as a manufacturer.



Wireless Technology

Ms. V Ramya Assistant Professor Department of ECE

<u>Wireless Technology for Medical</u> <u>Applications</u>

Use of smart phones for patient care and disease management has led to so me very exciting and useful medical innovations In May 2016 India tabled an ambitious mHealth (Mobile Health) resolution at World Health Organization (WHO), which was supported by over 30 nations. This put India at the forefront of transition towards digital health. Setting up of National Digital Health Authority was another milestone that would help to achieve the stated goal. The mHealth movement has come as a boon for patients confined to their hospital beds, where their heartbeat is continuously monitored via devices attached to them and displayed with beep sounds. Image this entire burdensome setup converted into a tiny, lightweight temporary body tattoo.

The supposed tattoo has an embedded radio transmitter that would monitor and send the patient's vital information to the doctor faster. This developing field, called mHealth, uses mobile technologies for medical purposes. Use of smart phones for patient care and disease management is a simpler form of the same. Such applications of wireless technologies have led to some very exciting and useful medical innovations.

Almost all medical devices are becoming connected to the Internet. This is giving users the freedom to utilize data from anywhere. We, as designers, try to ensure every device at least has the option to connect to the Internet.

Devices Connected to Hospital Wi-Fi Networks



Technology on the skin and beyond

- Electronics technology is moving towards use inside the body and on the skin. Such technology is known as epidermal electronics. Medical applications for wireless technologies range from diagnostics and monitoring to therapeutics and imaging, and wellness and fitness.
- These devices are designed with special wireless sensors. Usually, the technology is patented by makers. The device is embedded in the patient's body during the normal catheterization procedure. Once embedded, it starts monitoring the patient's vital signs and sending the relevant data to doctors as per the set frequency. In case of any problem, it sends alert messages on phones and emails. This helps to become well prepared to handle the exigency. Not just for patient care, wireless technologies are also contributing a great deal in research. Recently, Apple funded a research study run by a group of resident medical students and doctors at Stanford University that enabled real-time dialogue between the doctors and patients using Apple Watch.

Portable pacemakers have brought about a revolution in both the doctors' and patients' lives. These help us to save so many lives. Older patients often complain about being confined to the hospitals. Devices like these are a great rescue in such cases. Although the initial equipment costs are currently high in the market, I strongly believe that in a country like India, where not enough doctors are available to treat everywhere and all the time, adaptation of such technologies will lead to lower costs in a couple of years.



IMAGE PROCESSING - A RENNAISANCE TOOL IN LARVAE DETECTION

1100 11/-

M.DHANVARSHINI III ECE A

Current Methods in Iarvae detection:

The samples of water bodies are collected and taken for lab test in order to find out the type of larvae present in that water. The most commonly followed methods to avoid spreading of diseases in water bodies are spraying chemical

Detection of larvae by image processing:-Image acquisition:

Images of various water bodies containing larvae are captured using camera. Once the camera captures the images it will be transferred to video software for processing purpose. The captured image is converted into grayscale image by color transformation method

Image Enhancement:-

The basic enhancement approach is applied to the larvae image to improve the contrast. Then the image quality is improved . The unwanted objects in the background of the image is removed by further enhancement processing to make it ready for segmentation.



technology for the state of the

Future Works:-

Drones that can take images of water
Analysis of images can be automated
Soft wares that can suggest chemicals based on the types of larvae.

Counting of larvae:-

Each object is categorized as a single larva or a multiple larvae that are connected with each other in the image Pixel counting was used to calculate each object's area. Then histogram is calculated which gives a valid interpretation of the area of one larvae. Second stage is to apply sobel operator to enhance the contrast from background to detect the larvae.ROI is calculated and boundary detection algorithm is applied to segment and count the number of larvae through connected regions



<u>Segmentation:-</u>

Detecting the entire larva by creating a binary mask .After that fill the gaps in the lines surrounding the object in the gradient mask. Then the dialation of the image has been done to fill the interior gaps. Later remove the connected objects on border and then smooth the object.

Classification of larvae:-

The process of classification is based on neutral network approach .Firstly we use neutral network . Secondly the scanning method that examines each location in the image looking for locations that might contain a larvae When the larvae is detected usually the object would be detected for several times. This makes the detection result are overlapped each other therefore the detected objects are merged.





INTERNET OF THINGS

- IOT: Network or mesh of physical objects connected together through protocols embedded with electronics, software, sensors.
- Combination of hardware and protocols for data exchange.
- > Inter-network connectivity establishment.

LAYERS OF IOT

- PRODUCT LAYER : Hardware and embedded Software of device.
- CONNECTIVITY LAYER : Protocols for Connection.
- APPLICATION LAYER : Monitor data, Command mode, Automation.

THE CYCLE OF DATA TRANSFER



AGRICULTURAL APPLICATIONS

- There are numerous IoT applications in farming collecting data on temperature, rainfall, humidity, wind speed, pest infestation, and soil content.
- This data can be used to automate farming techniques.
- Improves *quality and quantity, minimize risk and waste,* and reduce effort required to manage crops.
- Farmers can now monitor soil temperature and moisture from afar, and even apply IoT-acquired data to precision fertilization programs.

DISADVANTAGES

- Low security and privacy
- Reduced employment
- Any small error in the loop will lead to a huge problem

TRANSPARENT ELECTRONICS

G.MOHSINA III ECE B



In transparent electronics the usual opaque semiconductor materials forming the basis for electronic device fabrication is replaced with transparent materials. There are two technologies :Transparent Conducting Oxides(TCOs)Thin Film Transistors(TFTs)

FET made with thin film technology often called thon film transistor(TFT) also called TTFT Junction type devices(p-n junction)

TRANSPARENT ELECTRONIC DEVICES:

The TTFT are fabricated by all TSO wide band gap materials wh ether binary or ternary oxides. The key performance of TTFT are its high device mobility and low temperature fabrication. The high device mobility enables fast device operation and low Power consumption. On other hand the lower temperature fabrication enables applications such as wear able display, E-paper etc.



TCO are used for the formation of TE devices as they are both electrically conductive and optically transparent too. To become TCO the TCO hosts must be degenerately doped to display the fermi level up into the conduction band. Degenerate doping provides : High mobility of extra carriers due to the ir small effective mass.Low optical absorption due to low density of status in conduction band.

Materials used

In 1997, a transparent p-type conducting materials were found by Tokyo institute . Presently, indium tin oxide(ITO) is used for making of transparent electrodes but indium is low in earth's crust so Researchers searched for alternative and found graphene. A single atom thick sheet of carbon is called graphene. It is highly electrically conductive material and it makes Flexible touch screens and super strong structural materials.





Advantages:-

- •Relatively Easy to produce
- Drastically reduce power consumptions
- •Flexible, Foldable and Transparent
- •Brighter than conventional LEDs and LCDs Low voltage and fast switching

Disadvantages:-

•Lifetime

- Red and Green OLED films have longer life times (46000 to 230000 hours)
- •Blue organics currently have much shorter life times (14000 hours)
- Manufacturing Processes are expensive right now Water can easily damage OLEDs

CONCLUSION:-

Impact on human machine interaction lead to new applications Transparent electronics holds the key for many future advancements in security, entertainment, efficient utilization of energy, invisible RFIDs, UV detectors, solar panel, sensors, etc.,





TOP 6 APPLICATIONS OF YOUR OLD MOBILE PHONES

B.P.SAREN KUMAR III ECE B

INTRODUCTION

- Tech world rapids as the days count the order. The feathered fingers makes furious calls by the end of the day. As life goes on, the internal database grows. Newer and nerdier era makes a metro call. Updates became a part of people's magazine. Attractive new designs are achieved and packed for its fullest consumption.
- As the bolt replaces the old ones, they actually becomes merely a showcase. So, this article covers the top uses of an unused old smart phones that takes up the shower.

Some of these applications needs root access or jail breaking while some of them are touchdown to go.

1). DIGITAL PHOTO FRAME:

To turn your smart phone into a digital photo frame, just install an app like Day frame, load a selection of your favourite photos, sit it in an upright dock and let it roll. This is a sure-shot way to impress the guests and keep the memories alive at all times.

2)GYM DEVICE:

Your old Android device can be an ideal gym tool. You can format it, remove unnecessary apps and data. This avoids unnecessary distractions in the gym. You can use your device as an MP3 player while you sweat it out. You can pair it with a cheap fitness tracker or smart watch for extra functionality.

3).GAMING CONSOLE:

It is very easy to pair an old Android device with the television via Google Chromecast and an HDMI cable. You can download a selection of emulators for your classic gaming consoles. There are apps from Super Nintendo to Sega Genesis available for Android. You can pair a Bluetooth gaming console with your Android device and you are good to go. PlayStation remote controller works really well with Android devices.

4).CAR GPS AND MUSIC PLAYER:

There is no doubt that you can use old Android device as a GPS navigation unit with your car. There are a number of great navigation apps available for Android (Google Maps, City Mapper, Waze and others). This gives you the option of using the old Android device as a dedicated GPS unit in your car. You can plug it in using an auxiliary cable and double up the usage as a dedicated stereo/MP3 player.

5).DESKTOP COMPUTER:

Yes, you can install your old Android device as a desktop computer. Even the oldest smart phone is more powerful than old desktop computers. You can install Debian or any version of Linux operating system on your device and connect it to a monitor. Then, sync it with a Bluetooth keyboard and mouse, and you are good to go.

6).WI-FI EXTENDER:

If you have weak Wi-Fi signals in your house or office, you can extend the signal range using your old Android device. You would need to install apps like fqrouter2. The app will pick up signals and repeat it. However, the app requires a rooted Android device. There are still plenty of room for your old Smart phones to work down a gamble. So, make use of the moist when the kernel supports you.



- "Place your hand on your heart. Feel that ? That's called purpose . You are alive for a reason. Don't forget that."
- Then why to choose such an horrible end? Of course, one day or the other, we will have to leave this world. But we don't owe the right to end it up ourselves. There may be many reasons to give up or give in. But hold on to that you need to survive for your parents, blood relations, and friends who really care for you. Your parents gave you this life, pampered when you cried, laughed with you at your silly jokes, took pride when you achieved something even little, gave up their happiness only to see you happy. Do you want to give back such a thing in return to them? No one in this world is so much important than your parents. Never give someone that place. All the suicide's reason converge to one point, that is depression. Question being, "Why do you trust someone so much than your parents?". A very few look at your personality and traits but the majority look up you for the work to be done by you for them. We all actually, "Love things, use people instead use things and love people".



- The only people who love you unconditionally and truly feel happy for your success is your parents. Why should we leave them for someone else? In the current social media world, it is never a matter of concern to have thousands of friends or followers, all that matters is a caring soul by your side all the time. Spend time with your friends but never miss your parents. Privacy shall be maintained and not everyone shall be trusted. Trust your parents and when it comes to others, be careful to trust only the trustworthy.
- Life is what for? The purpose of life is to live it to the fullest. Why cut it short because of a stupidity caused by a temporary upset? I wish the one who reads, spends time with his/her parents. If it is "not yet", then "here after."





A Heavenly Disk to Map the Universe

J.EINDUMATHY Assistant Professor Department of ECE No, it's not an alien artifact. Since 1998, the Sloan Digital Sky Survey (SDSS) has used thousands of metal disks like this — called plug plates — to map the universe. Workers called plate pluggers clamp these disks atop a 2.5-meter telescope in New Mexico, after threading optical cables into the hundreds of holes. Each one lines up with the light from a known galaxy or star. This creates, in effect, an armada of tiny telescopes, each hyperfocused on a single celestial sight. Now in its fourth phase, SDSS has mapped the Milky Way in **3D, surveyed millions of nearby galaxies, and more. It's like Google** Earth for the cosmos. Along the way, the plates themselves have become iconic, recycled into coffee tables, museum pieces, even fine art sculptures. But soon they'll all be relics. Starting in 2020, SDSS-V will use mini robots to aim optical cables at the sky, charting our cosmic metropolis faster than ever before
ROSHINI III YR ECE B

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- "When our culture was in its peak your forefathers were swinging in branches".
- Let me go ahead India is the cradle of human race, the birth place of human speech; the mother of history; the grandmother of legend and tradition . This exclaims our fantasy of Indian culture carved marvelously and our civilization etched stunningly, even before the commencement of western civilization of men from chimps. Our Indian culture is so vast that it has the greatest of all languages, which gives birth to the living tongues all over the world. It isn't easy for a culture to survive for millennium , neither for a language to sproot out impeccably. Mother India possess heavens as a miniature of forests, evergreen plains and plateaus under its wings.





- All over India thousands of languages are spoken by the ethnic people elaborating the poetry of feet so called dance in the form of BHARATHANAATIYAM, KATHAKALI, ODISSI,KUCHIPUDI.
- Lets preserve it by moving a ahead with good technology, but it is the need of the hour to safeguard our fantabulous culture.









M.SUNIL KUMAR III ECE B

S.DEEPIKA III ECE A

M. Smithert

163

M.DHANVARSHINI III ECE A

R.HEMACHANTHRIKA II ECE A

GLOBAL WARMING





P.SARANYA III ECE B



M.DHANVARSHINI

P.SARANYA III ECE B

P. INIYAAN II ECE A





T.MAHESH III ECE B

RENITA BLESSY II ECE B



III ECE B

Δ = 21 + + =



96 : suA

RIDDLES

1. LAKES BUT NO WATER

I have forests but no trees. I have lakes but no water. I have roads but no cars. What Am I?

2. I have keys without key locks. I have space without rooms. You can enter but you cannot go outside. What am I? AAM :A3W2NA

3. I have six faces and twenty- one eyes, yet I can not see. What am I?

ANSWER: DICE

4. Which seven-letter word contains dozens of letters



			2	6		7		1
6	8			7			9	
1	9				4	5		
8	2		1				4	
		4	6		2	9		
	5				3		2	8
		9	3				7	4
	4			5			3	6
7		3		1	8			



6	5	2	8	Ι	4	8	9	Z
9	8	τ	Z	S	6	8	4	2
4	Z	8	9	2	3	6	τ	S
8	2	9	3	4	Z	Ţ	2	6
5	τ	6	2	8	9	4	Z	3
L	4	8	ς	6	τ	9	2	8
7	9	2	4	3	8	L	6	Ι
8	6	4	τ	Z	5	2	8	9
τ	8	Z	6	9	2	S	3	4



PIPES



Can You Figure Out Which Cup Will Be Filled With Coffee First?







VISION TEST

Only 1% of the population is able to find the animal in the image in less than 2 minutes. SHARE if you're one of the few who can!







கைலைக்கு மீ ககிலைகள் :-சிகீதித்துப் பாரீ தொல்லி இதுக்கிறத கால்லிறது டுளம் டேட்டை தொல்லிறது டுளம் டேட்டை தோல்லிறது புதையிஷ் ஆயிஷ! - ஆ. தெய்ன்னன் சிறைகள் ஆலித்தாலும் சிற்றைன ஆலித்தாலும் சிந்தனை அலித்தாலும் - ஆ. தெய்யாள்

6 உணை படித்த அனைவுக்கிட் கட்டாலம் கவலை! ஆம், 6 உன் 6 தர்க் 6 உள்ளை ட படிக்கத்ல் படிக்தது திரக்க அல்ல சித்தக்கலை. தேங்கனை அப்பாதீர் தேப்பல்னது இனம்பருமீ _ உப். ரெய்ஸ்றார்

V.PERIYANNAN III ECE B

ல்ாபல் மீரைலை பல்லிலாப் புக்குர்கு பல்லிலாப் புக்குர் மல்லும் பல்லான் அரைப் அன்றைல் பல்லான் ஆர்தாப் புக்குக் பிய்யிர் வதையில் மீரிறுக்கு வால் பிய்யிர் வதையில் மீரியில் பிய்று பிரித்து வால்லாது பிய்றிர் வரைப் திரிலில் பிய்றிர் வரைப் கிரித்து பிய்லிலாப் பிரியில் பிய்றிர் வரைப் கிரிலில் பிய்லிலா கிரியில் பிய்றிர் வரைப் கிரிலிலீ மிலி பிய்யிரி வரிரி வரையிரிலீமை

அ⊥ குன்னும் புரியவில்லையா? ஒரு முறையாவது, மனித8நயத்8தாடு இருந்து பாருங்கள் மனிதல் நிறப்பின் மகத்துவம் புரியும் மனிதன் வாழ்வது லு8ற ஒரு முறை அந்த வாழ்க்கை மில் மணிதம் வளர்க்கப் பாடு படு வோம்! மணிதன் கிறப்8பாம்!! மனிதன் வளர்ப்8பாம்!!

K. SWETHA



did you know?

Prince Rupert's Drop occurs when molten glass is dropped into cold water and forms a bulb and tail. The bulb becomes strong enough to withstand a blow from a hammer, but if the tail is even slightly damaged, the whole thing explodes.



did you know?

When properly arranged and set ablaze, these chemical compounds create fire rainbows.



KCI Pb(NO3)2 BaCl2 CuSO4 H3BO3 NaCI SrCl2 LiCI



did you know?

World's smallest poisonous frog is less than a centimeter long and its skin is 200 times more toxic than morphine.



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Don't stop when you're tired. STOP when you are DONE.

Unknown

work

Focus on making yourself better not on thinking that you are better

THE ONLY WAY TO GUARANTEE FAILURE IS TO NEVER TRY

EDITORIAL TEAM



