



KARPAGAM
INSTITUTE OF TECHNOLOGY
Inspiring Innovation
Approved by AICTE and Affiliated to Anna University

ELECTROX

Technical Magazine



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2021-22 (Yearly Issue)
Vol.7, Issue 1, 2022

About the Department

The Department of Electronics and Communication Engineering was started in the year 2008 offers a UG programme (B.E.) in Electronics and Communication Engineering. The Department has a team of highly talented, experienced and qualified faculty members. There has been a consistent development in all spheres including infrastructure, staff and the strength of the students. The Department believes in serious academic pursuit and encourages radical and creative thinking which paves the way for creativity and innovative ideas. The qualities inculcated into the engineering students make them not only good engineers but also good human beings. The excellent placement record of the ECE department has been consistently a good percentage for the past several years. It is an ample testimony to emphasize that the ECE department and the college strives hard in providing practical engineering skills to meet the industrial needs through excellence in engineering education.

From HoD's Desk

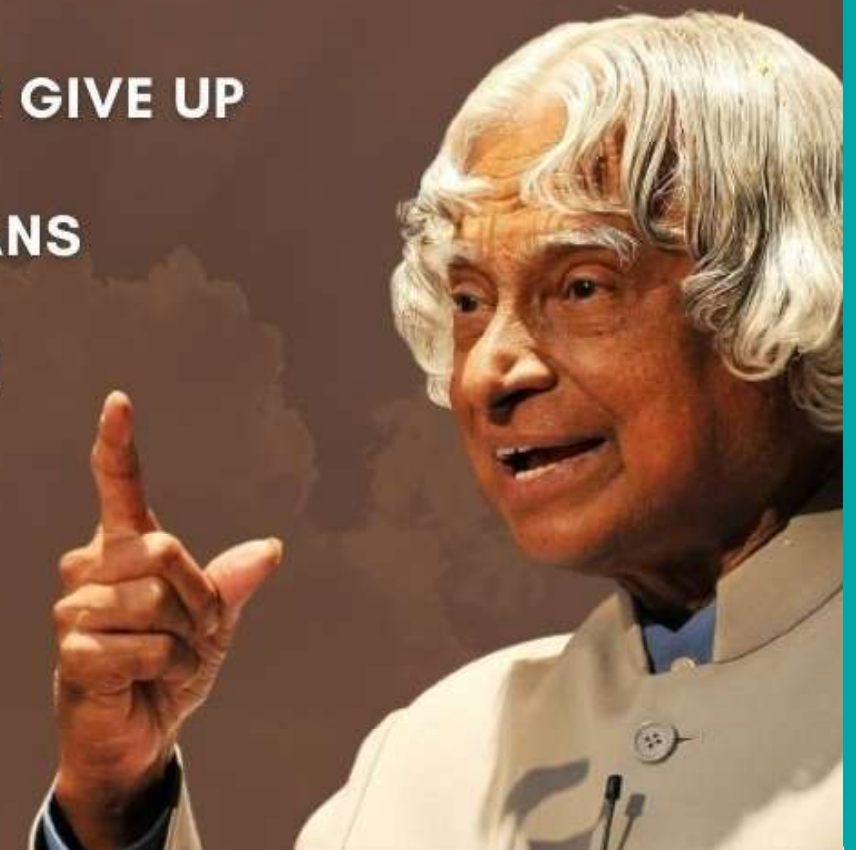
It gives me an immense pleasure that our ECE department is releasing an "e-magazine" named ELECTROX as a pioneer of the department activities for the even semester of the academic year 2021-22. Our ECE department intends at keeping students abreast of the recent technological trends and due consideration is paid to improve 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 ingenious thoughts. This electronic magazine plays an active role in gaining hottest developments in the field of engineering and also presents the attainments of the department. I congratulate the team of Faculty co-ordinators and students of ELECTROX for their luminous and novel efforts. I wish them all the very best for all their future accomplishments.

IF YOU FAIL, NEVER GIVE UP

BECAUSE FAIL MEANS

"FIRST ATTEMPT IN
LEARNING".

QUOTES BY
ABDUL KALAM
feedingtrends.com



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TEST YOUR APTITUDE

From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?

- a) 564
- b) 645
- c) 735
- d) 756
- e) None of these

Ans: Option D

A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is:

- a) 6 hours
- b) 10 hours
- c) 15 hours
- d) 30 hours

Ans: Option C

In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?

- a) 30%
- b) 70%
- c) 100%
- d) 250%

Ans: Option B

Vision

Institution

To impart quality technical education emphasizing innovations and research with social and ethical values

Department

To produce technically competent and socially responsible Electronics and Communication Engineers to meet industry needs.

Mission

Institution

- Establishing state-of-the-art infrastructure, effective procedures for recruitment of competent faculty and innovative teaching practices.
- Creating a conducive environment for nurturing innovative ideas and encouraging research skills.
- Inculcating social and ethical values through co-curricular and extra-curricular activities.



Department

- Establishing state-of-the-art facilities in the field of Electronics and Communication Engineering and enriching the knowledge of faculty through continuous improvement process.
- Adopting innovative teaching learning practices and facilitating industry institute partnership for professional development.
- Inculcating ethical and social values through extension activities.





Program Educational Objectives (PEOs)

PEO1: Graduates will excel in their chosen technical profession in Electronics and Communication Engineering or interdisciplinary areas.

PEO2: Graduates will demonstrate conceptual, practical and analytical knowledge in the field of Electronics and Communication Engineering.

PEO3: Graduates will engage in life-long learning and team work with ethical values in their Professional career.

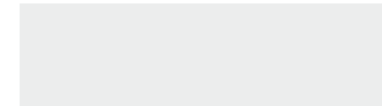
Program Specific Outcomes (PSOs)

PSO1: Analyze, Design, Simulate and Integrate Electronic Circuits and Systems for given specifications.

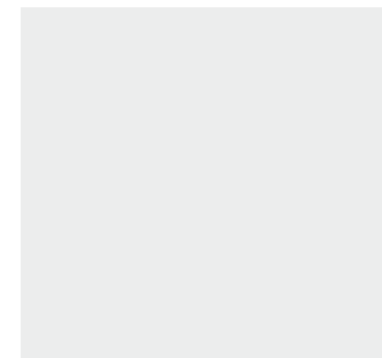
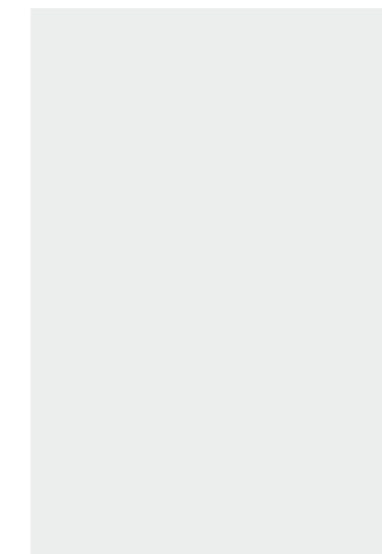
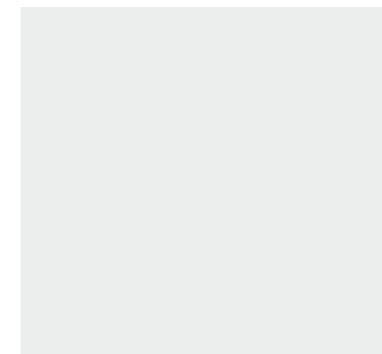
PSO2: Apply the technical knowledge to solve issues in the areas like signal processing, Communication, VLSI design and Embedded Systems.



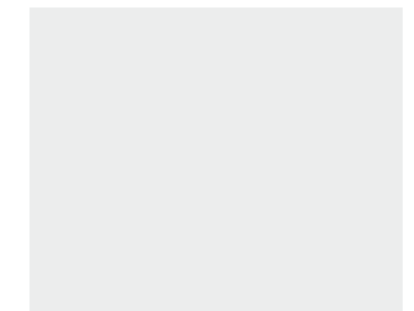
Devibala V / II Year ECE



Siva P / II Year ECE



Mahiba R / II Year ECE

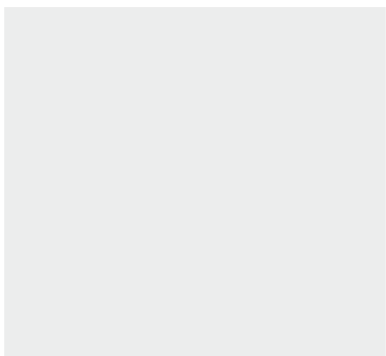


Mahiba R / II Year ECE

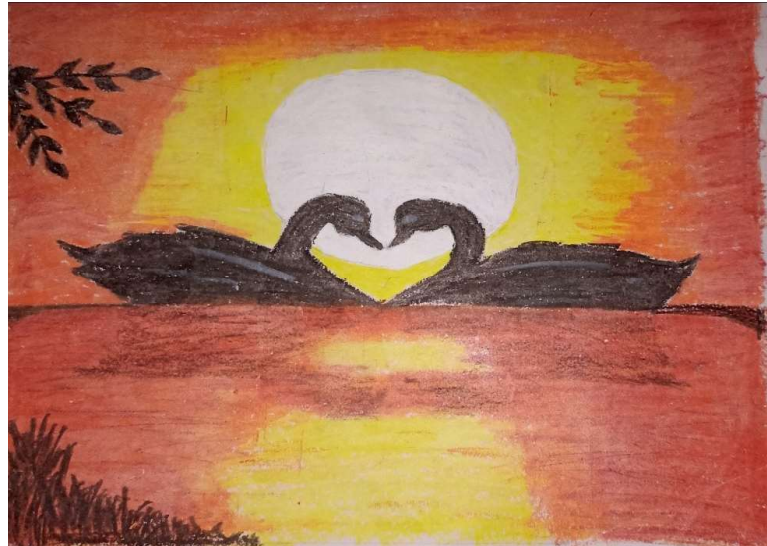
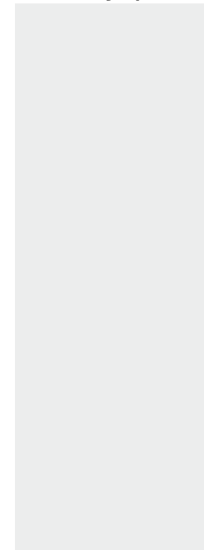
ART WORKS



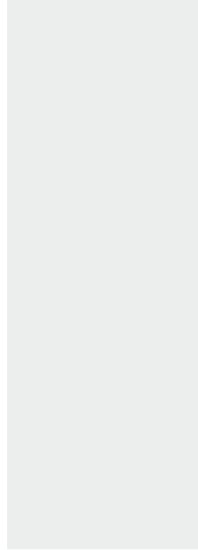
Sanjay P / II Year ECE



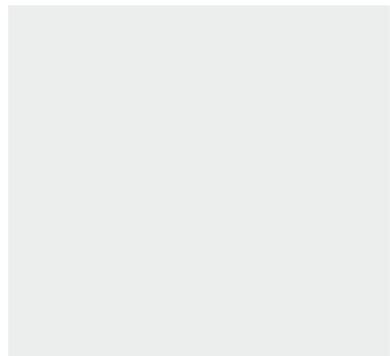
Dhanush S / II Year ECE



Mariselvam M / II Year ECE



Madhumitha K / I Year ECE



Dhaarani M / II Year ECE



MAKING TEXT AUDIBLE

Author : Muralitharan S / III Year ECE

Text-to-speech (TTS) is a type of assistive technology that reads digital text aloud. It's sometimes called "read aloud" technology.

With a click of a button or the touch of a finger, TTS can take words on a computer or other digital device and convert them into audio. TTS is very helpful for kids who struggle with reading. But it can also help kids with writing and editing, and even focus. Since TTS lets kids both see and hear text when reading, it creates a multisensory reading experience.

Researchers have found that the combination of seeing and hearing text when reading:

Improves word recognition

Increases the ability to pay attention and remember information while reading

Allows kids to focus on comprehension instead of sounding out words

Increases kids' staying power for reading assignments

Helps kids recognize and fix errors in their own writing

DIGITAL PEN

Author : Tamilselvan S / III Year ECE

A digital pen is one of the new electronic inventions that can help us record information. Despite the digital age, we still use pens. But it would be great to have our handwritten notes and drawings digitally recorded without having to use a scanner. The Zpen from Dane-Elec is a wireless pen that uses a clip-on receiver to digitally record what you write. It uploads the information to your computer where it can be viewed, edited and filed as a word processing document. The digital pen utilizes character recognition software and works by recording movement. Features include profile creation, a dictionary and fifteen language options.

PHOTOGRAPHY



Athulya A S / III Year ECE



Dineshkuamar S / IV Year ECE



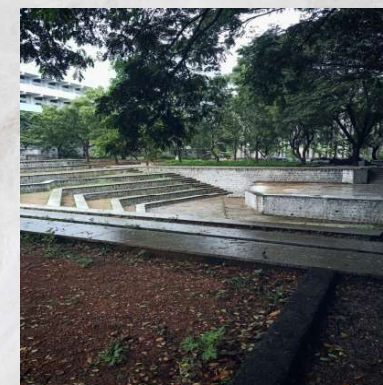
Muralitharan S / III Year ECE



Kishore B / III Year ECE



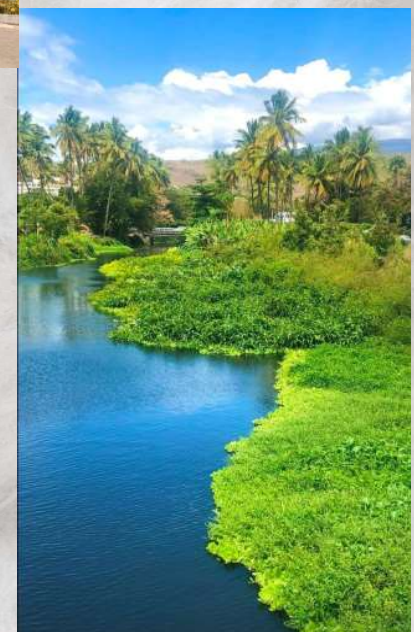
Mithun Kumar / III Year ECE



Haripriya P / III Year ECE

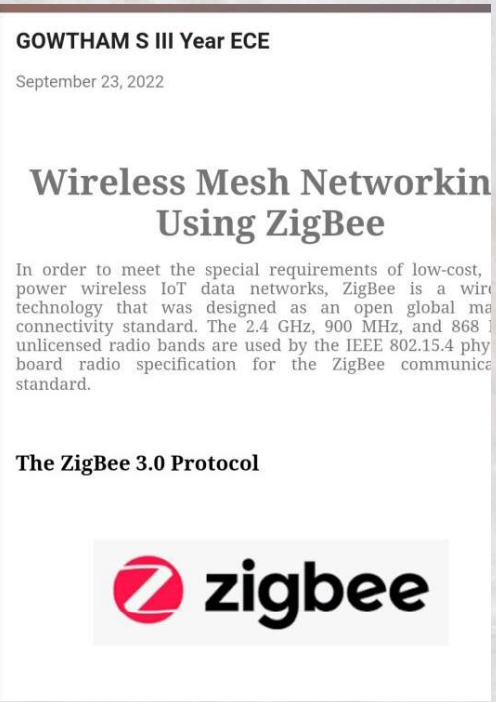
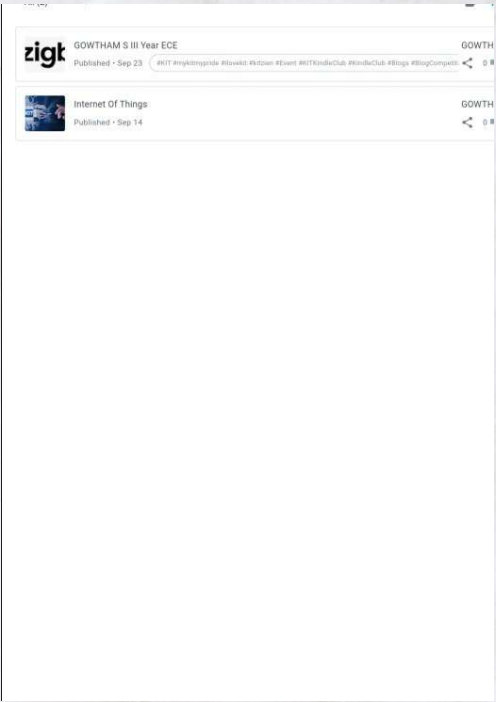


Rithish K / II Year ECE B

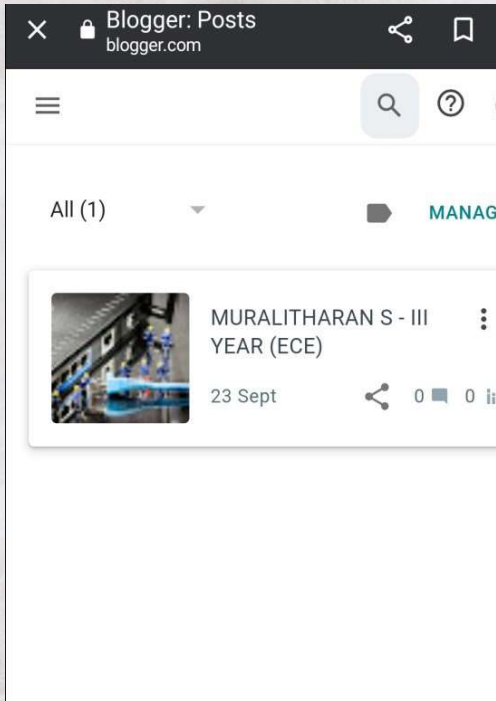


Tamilselvan S / III Year ECE

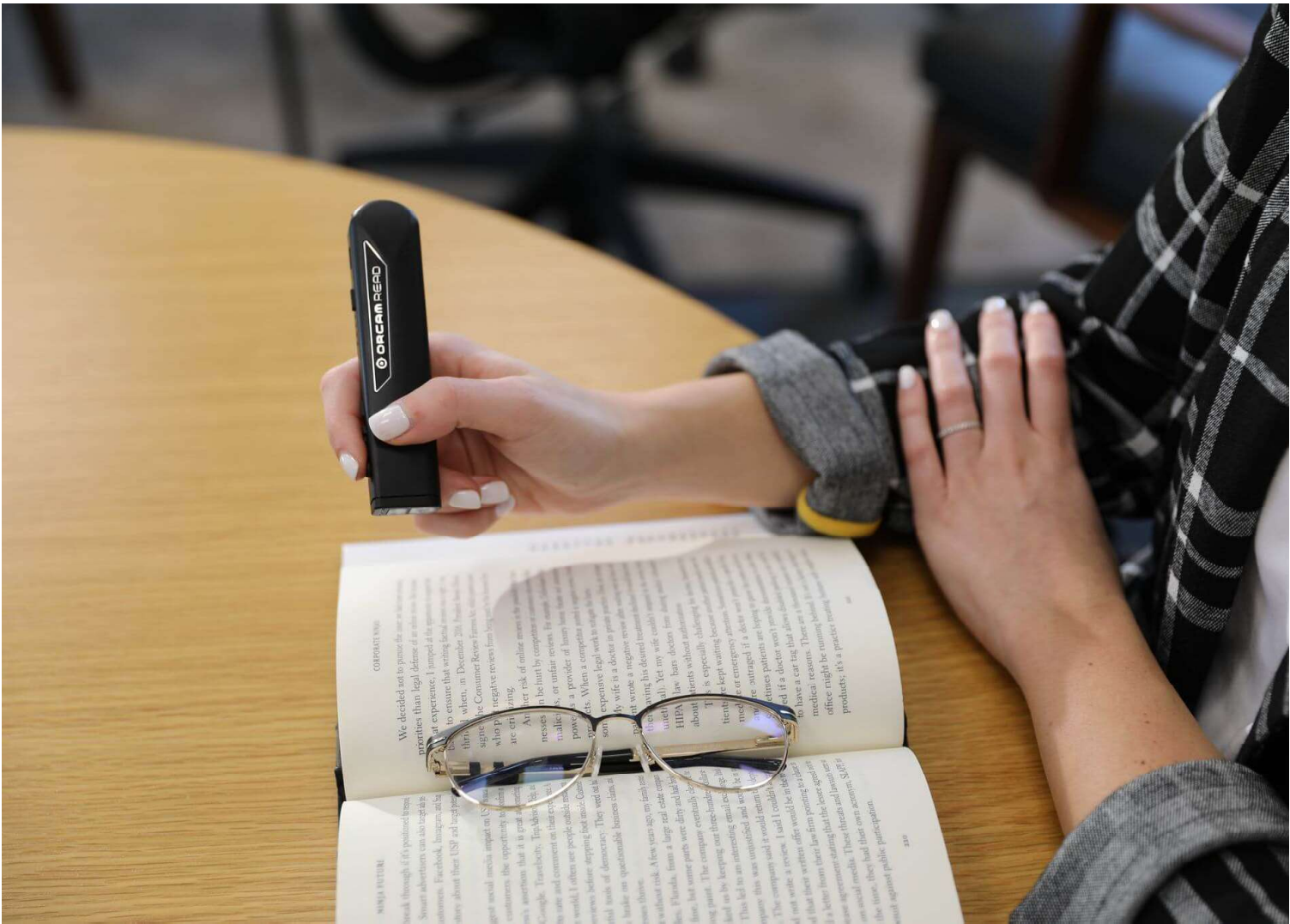
BLOGS

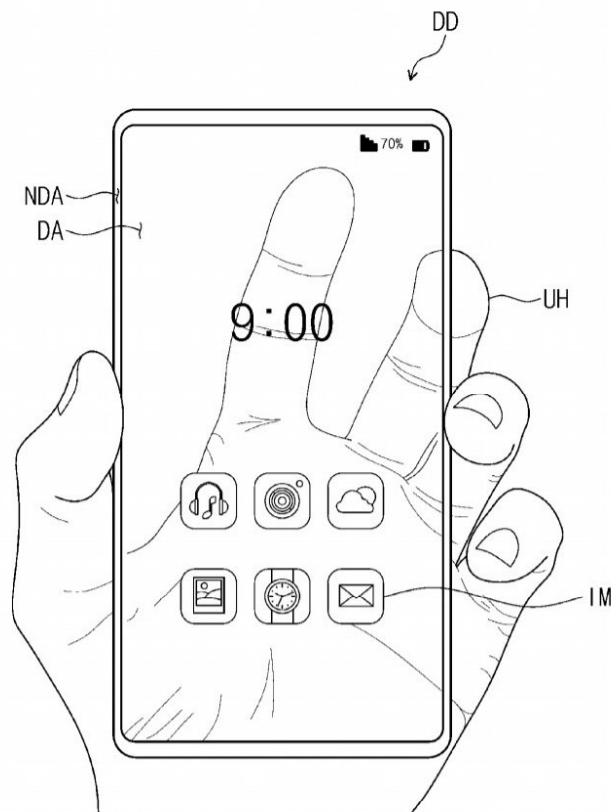


Author : Gowtham S / III Year ECE



Author : Muralitharan S / III Year ECE





TRANSPARENT SMARTPHONE

Author : Priya B / III Year ECE

Inventors, Jung Won Seo, Jae-Woo Park, Keong Su Lim, Ji-Hwan Yang and Sang Jung Kang, who are scientists at the Korean Advanced Institute of Science and Technology, have created the world's first transparent computer chip. The chip, known as (TRRAM) or transparent resistive random access memory, is similar to existing chips known as (CMOS) or metal-oxide semiconductor memory, which we use in new electronics.

The difference is that TRRAM is completely clear and transparent. What is the benefit of having transparency?

"It is a new milestone of transparent electronic systems," says Jung Won Seo. "By integrating TRRAM with other transparent electronic components, we can create a total see-through embedded electronic system." The technology could enable the windows or mirrors in your home to be used as computer monitors and television screens. This technology is expected to be available within 3 to 4 years.

SMART LOCK

Author : Trishath T / II Year ECE

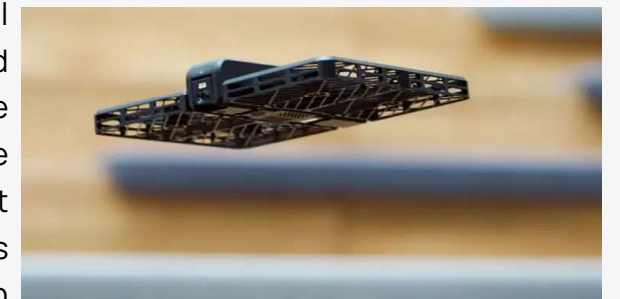


With the evolution of our homes, one key element that has also evolved is the door lock. Smart locks have been among the most awesome inventions that have revolutionized how we visualize door locking and the next big addition in this category is US:E, a smart lock which offers six different methods of unlocking a door. Besides basic key and passcode access, US:E can be unlocked using fingerprint, a key fob, remotely using a smartphone, or even by scanning the owner's face with the built-in infrared facial recognition technology which is powered by an AI.

HOVER 2

Author : Tharani K R / II Year ECE

Drones have helped us capture important moments of our lives with greater flexibility than a hand-held digital camera or camcorder. Hover 2 is designed to do that and a lot more, without much human intervention. The drone comes with an AI onboard which not only guides it while flying but also helps capture 4K videos from the best possible angles. The AI is capable of detecting obstacles and dodging them in real time, allowing you to focus on enjoying nature while Hover 2 takes care of the rest.



ATOMIC Pi

Author : Vijayasarithi I / III Year ECE

If you're enthusiastic about tiny computers but want to avoid Raspberry Pi for its low power, ATOMIC Pi can be a great aide. It comes with an Intel Atom CPU clocked at 1.92GHz, features full-sized HDMI, audio, Ethernet, USB 3.0 ports, and a heat sink – all laid out on a 10cm x 13cm logic board. ATOMIC Pi is inbuilt with dual-band Wi-Fi and Bluetooth 5.0. While it comes pre-loaded with Linux, you can boot it up with Windows for a genuine desktop experience.



LEVITATING MARBLE LIGHT

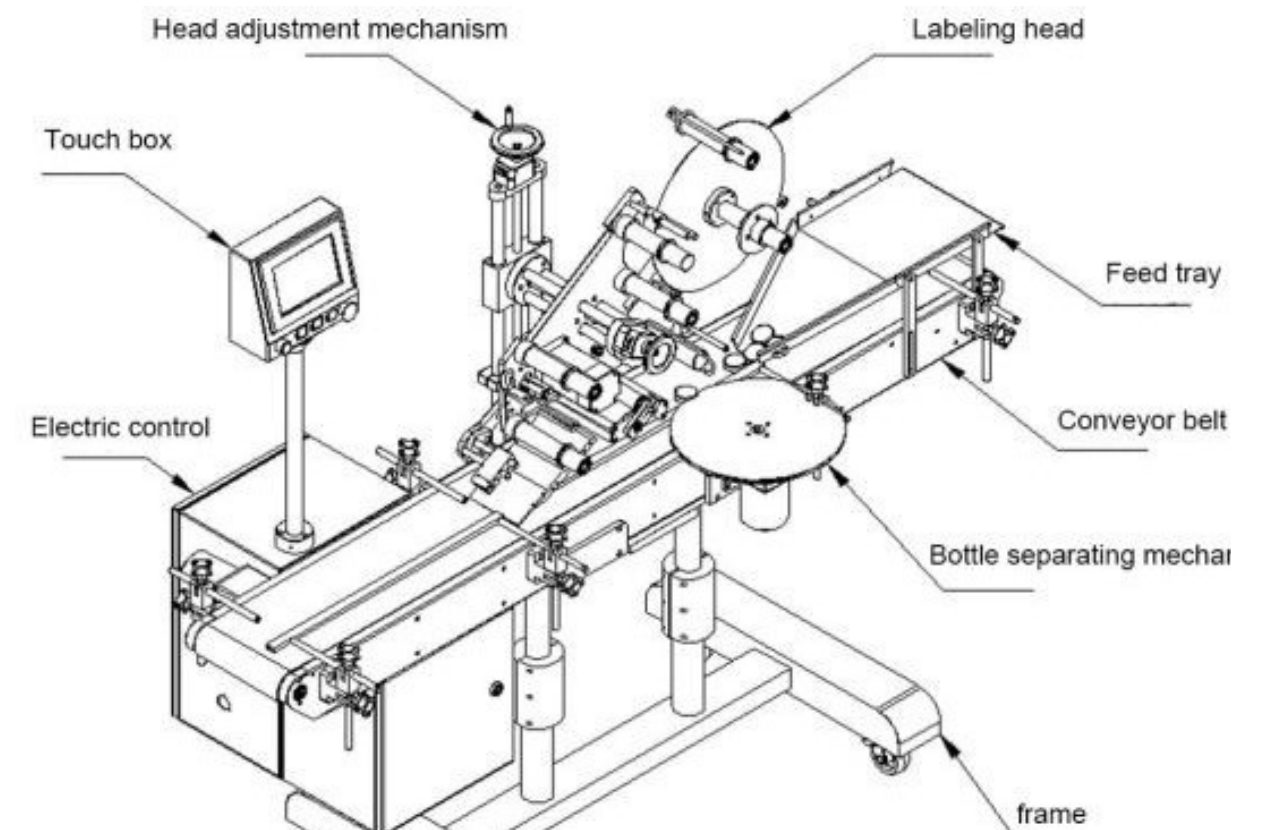
Author : Sundar Raj A / III Year ECE

Anything contactless and levitating is instantly pleasing and delightful so our last entry in the list of superb and awesome inventions is Levia, a levitating lightbulb that works through electromagnetic induction. Levia's aesthetics aren't its only charming factor as the developers have carefully designed the levitating mechanism ensuring that you don't accidentally knock the bulb off. The lamp looks beautiful because its base is made up of genuine Italian Marquina or Carrara marbles, which is hand-polished after hydraulic cutting for an appealing appearance. Levia's beguiling looks and its ease of use is what lets it into our list of awesome inventions.

SIB

Author : Vishnu S / III Year ECE

Short for Simple Internet-Connected Button, SiB is a tiny cube with a programmable button that can be connected with a host of other smart devices and sensors to perform an unimaginable large number of functions. Whether it is to control your smart doorbell, check temperature, detect leakage, monitor the health of plants. You can assign many tasks to the cube based on the number of times you press the button. The cube also comes with multi-colored lights to inform you about the strength of the Wi-Fi signal.



INSTANT PRINTS

Author : Vishnu Surya S / III Year ECE

Creating instant prints from a digital camera is one of the new electronic inventions in printing. The Polaroid PoGo™ is a small portable printer that weighs only a few ounces.

The printer produces full color 2" x 3" prints using an "inkless" technology. The images are created from heat activated crystals in the photo paper. The photos are water proof, tear proof and smear proof

This new electronic invention connects to a digital camera using a USB cable or to a mobile phone through wireless Bluetooth. It uses rechargeable batteries or an AC adapter.

Science can amuse and fascinate us all, but it is engineering that changes the world

CLOUD COMPUTING

Author : Naveen R / II Year ECE - A

Analysts predict that the latest technology inventions in cloud computing will significantly influence computers and mobile devices. Cloud computing is where tasks and file storage on your computer are stored elsewhere. By using an internet connection you can connect to a service that has the architecture and software to manage any task or storage requirement at less cost.

The advantages of cloud computing is that it eliminates the difficulty and expense of maintaining, upgrading your own computer hardware and software while increasing efficiency, speed and resources.

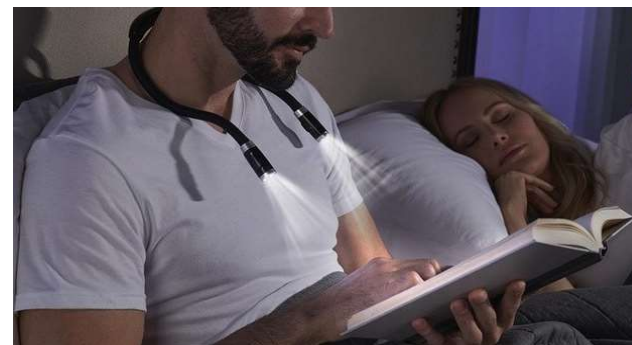
Your computer's processing speed, memory capacity, software applications and maintenance requirements are optimized. You could store and access any size or type of file, play games, use or develop applications, process, make scientific calculations, or anything you want, by simply using a smart phone.

As a comparison, let's say you had to generate your own electricity. You would need to maintain these resources as required to meet your demands. This would be expensive and time consuming compared to how a utility provides electricity.

It has the architecture, infrastructure, applications, expertise and resources to generate this service and connect to their grid.

WEARABLE READING LIGHT

Author : Yasshikaa / III Year ECE



There might be times when you want to read a book before hitting the bed without disturbing anyone. While a lot of people use a night lamp for this purpose, there's a dedicated reading light which might just be what you're looking for. Worn around the neck, the gadget offers 2,700 Kelvin of warm white light and 7,000 Kelvin of cold white light. You get up to 16 hours of usage from a single charge and it takes around 2.5 hours for a complete charge with the bundled USB cable.

GEOPRESS PURIFIER

Author : Tarunika Reddy / III Year ECE



Obtaining potable water is a major challenge when you're off-grid and this is where hand-held filters come into play. You must have heard of LifeStraw which lets you drink water directly from any running stream without worrying about any impurities and Geopress takes it a step further. Geopress Purifier uses zeolites for ion exchange along with an activated carbon filter to remove disease-causing viruses, bacteria, protozoan, heavy metals, and other chemical impurities from almost any dirty stream of water, making it suitable for drinking. With Geofilter, you can not only instantly filter dirty water and prevent diseases like Rotavirus and Hepatitis A but also store 24oz (710ml) for thirst on the go.

HOVERSURF

Author : Vibitha / III Year ECE



Sure, we're close to seeing flying cars and other levitating transport models, but Hoversurf is transforming personal transport while keeping it super cool. Hoversurf's S3 is quadcopter superbike which can not only take off and land at any concrete surface but also hovers above the ground at 60 miles per hour. The body of the flying bike is made of carbon fiber which makes it super light and agile, giving it a weight of only 250 pounds. The vehicle has already been adopted as part of Dubai Police's fleet of supercars and superbikes which criminals cannot evade very easily. Riders are recommended to fly the hoverbike at a height of 5 feet, which can also be adjusted as per requirements.

ORCAM MYME - AI FOR HUMANS

Author : Vishnu Kurup / III Year ECE

OrCam MyMe aims to help you strike a balance between physical and digital social lives. The tiny gadget sits on your collar or pocket with an inbuilt smart camera with facial recognition so you don't forget a coworker's or acquaintance's name again. MyMe lets you keep an account of the time you spend socializing and using the compliant app, you can classify people in groups like work, friends, or family and set timers for each group. MyMe also captures the time you spend in front of a screen and can help you cut out distracting and unneeded screen time, not only helping you focus better but also have greater control over your life.

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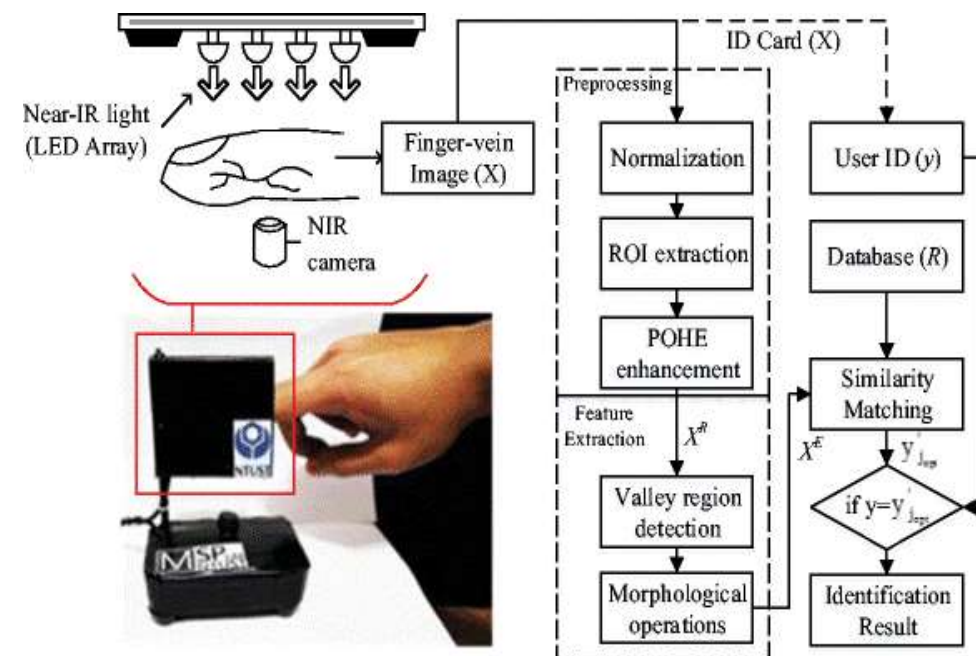
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VEIN IDENTIFICATION

Author : Mahiba R / II Year ECE - A

This latest technology invention is a biometric identification and security device known as PalmSecure. It works by identifying the vein pattern in the palms of our hands. Similar to our fingerprints, vein patterns are unique to each individual. The purported advantages of this technology is that it is less expensive, easier to manage, and is more reliable than traditional methods of identification.

FLYTE LEVITATING LIGHT BULB

Author : Eleazar A / III Year ECE

Designed in Sweden, FLYTE is a unique levitating light bulb. What makes it one of a kind product is the ability to hover by magnetic levitation and is powered through the air. Another notable thing about this levitating light bulb is the build quality. Made of oak, ash, and walnut, it's quite durable. In terms of energy efficiency, FLYTE uses highly efficient LEDs that are rated at around 50, 000 hours, which translates into 12 hours of usage a day for a long 11 years.



SOLAR ROADWAYS

Author : Vinush S / II Year ECE

Solar Roadways is exactly what you're thinking after reading the name. These are solar panels that can be used to pave roads, driveways, sidewalks, or any surface meant for walking.

Solar wafers protected under thick layers of shatter-proof Gorilla Glass can be used to generate electricity from any surface. These modules come in hexagonal panels which makes replacement super easy. Additionally, Solar Roadways panels can be programmed electronically to show specific markings on the road. The panels can generate enough heat to melt the snow and thus ensure easy walking or driving over them during winters. All of this while saving the Earth and Earth-dwellers from succumbing to the damage caused by greenhouse gases.





COPY & PASTE

Author : Dhanasekaran J / III Year ECE

Ever wished to have a smart scanning and printing tool to help you go about your business with the desired convenience? If yes, “Copy & Paste” can be the right answer to your needs. What I like the most in this scanning and printing tool is the ability to transfer the images and text from one source to the other pretty fast. Not to mention, you can also use it to print directly into your notebook, thereby eliminating the requirement for an additional paper. So, no more expensive printer or heavy photocopier machines!



PADRONE RING - COOLEST MOUSE

Author : Vasanth Kumar M / II Year ECE

No matter how sophisticated the trackpads on our laptops get, mice are still irreplaceable because of the high freedom of movement and speed they offer. Padrone Ring is a small and nimble finger ring which can be used as a computer mouse. This ring mouse connects to any device over low-energy Bluetooth and supports a variety of clicking and scrolling gestures. More importantly, it comes in 12 different sizes and is waterproof, which means you can continue wearing it anywhere you go without worrying about breaking it or frying the internals.



PHREE ELECTRONIC SENSOR PEN

Author : Divyadharshini K / III Year ECE



Claiming to be the world's first unrestricted write-virtually-anywhere electronic sensor pen, Phree is what you need to jot down your thoughts anytime, anywhere and on almost anything. Whether it's sketching, annotating or simply writing, it excels in most aspects. So, how does it work? Well, it comes with a 3D optical tracking engine that measures its motion accurately and then sends the digital link to the connected Bluetooth device.

MIITO

Author : Youkhan Hari S S / III Year ECE



Though MIITO may not seem to be huge innovative stuff, it's got the quality to find a safe spot in this long lineup of awesome things. So, what makes it worth giving attention?

Well, it's readied to heat any liquid directly in a vessel, which can play a good part in reducing water and energy usage. With these notable qualities, it deserves to be considered as a smart alternative to electric kettle. Right now, it's getting a lot of traction on Kickstarter.

AMBASSADOR HEADPHONE TRANSLATOR

Author : Thanish S / II Year ECE

This one is specifically designed for globetrotter or someone who has to often interact with people coming from different parts of the world. Ambassador is designed to be a top notch translation tool that excels in translating languages. With a fully customizable setting, the translator allows you to fine-tune everything in line with your needs. Sporting a pretty comfy over-the-ear design, you can comfortably wear it for long.

