PCE
PILLAI COLLEGE OF ENGINEERING

ELECTRONICS AND TELECOMMUNICATION STUDENTS ASSOCIATION

CIRKYTE

2020-2021

ETSA

DEPARTMENT VISION

Strive towards producing world class engineers who will continuously innovate, upgrade telecommunication technology and provide advanced, hazard-free solutions to the mankind. Inspire, educate and empower students to ensure a green and sustainable society.

DEPARTMENT MISSION

Benchmarking against technologically sound global telecommunication institutions with a view towards continuous improvement. Continually exposing students to scenarios that demand structuring of complex problems and proposing solutions. Educate students and promote values that can prevent further degradation of our planet. Becoming responsible citizens genuinely concerned with and capable of contributing to a just and peaceful world.

PROGRAM EDUCATIONAL OBJECTIVES

1. Provide graduates with a strong foundation in mathematics, science and engineering fundamentals to enable them to analyze and solve challenging problems in Electronics and Telecommunication Engineering.
2. Impart analytic and thinking skills to develop innovative ideas in the field of Telecommunication Engineering.
3. To keep students up to date with the latest advancement in the field of Electronics and Telecommunication
4. Inculcate qualities of leadership skills, multi-disciplinary team work and an ability to adapt to an evolving professional environment in the field of Engineering and Technology.
5. To create awareness among the students towards ethical, social and environmental issues in the professional career.

PROGRAM SPECIFIC OUTCOMES

1. Able to understand the concept of Basic Electronics, Network and Circuit Analysis, Analog and Digital circuits, Signals and System, Electro magnetics and apply them in various areas like Microwave Engineering, Wireless Communication, Digital image processing, Advance Communication systems etc.
2. Able to use techniques, skills, software, equipment and modern engineering tools necessary for Electronics and Telecommunication Engineers to identify, formulate and solve problems in industries and research work.
3. Able to work in a multi-disciplinary environment to provide socially acceptable technical solutions for complex communication engineering problems.

PROGRAM OUTCOMES

Engineering Graduates will be able to:

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. **Design / Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal and environmental considerations.
4. **Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Lifelong Learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

ETSA

"Electronics and Telecommunications Student Association" (ETSA) is a student body of Pillai college of Engineering consisting of ETRX and EXTC students. The foundation of ETSA was laid back in 2013 with the sole purpose of providing a platform for students to explore and express their inner talent. After a gap of three years, it has gained back its momentum and is moving forward with the goal to give the students opportunities to gain technical knowledge as well as soft skills through various activities organised by the committee.

The workshops conducted so far have encouraged students to explore their curriculum from a different perspective and have a hands-on experience under the guidance of experts. Apart from focusing on the extension of curriculum practically, the other sectors like communication skills and general knowledge were highlighted well by the events like Saamvad(debate) and Think Bot(quiz). These really helped students to showcase and enhance their public speaking skills and general knowledge.

The association's most unique event is their annual event called "ETSA Talks"which gives the attendees the opportunity to interact with some of the finest public speakers of the country.The ideology behind this initiative is connect students with the vision of successful personalities from a variety of fields, with the hope of empowering them with essential life skills.

ETSA has also tried to expand their reach and inspire many more learning minds with their magazine "CIRKYTE", launched every year that consists of well-documented articles relating to latest technologies and bringing in stories of inspiring people. Beside guiding students, the committee has also organised external events for women's day, community service, and tree plantation.

Although being a young committee ,ETSA's lack of experience hasn't stopped them from standing toe to toe with the rest of the student body's of the college and create a very profound name for themselves.Establishing an all-round development environment for students and guide them on the right path by providing them with ample of technical knowledge as well as social skills is the ultimate goal of ETSA.

Dr. Sandeep Joshi

Principal, PCE

The ETSA committee has an enormous contribution in providing students with the opportunity to gain the knowledge they need, to be better engineers and a person. Their professionalism and the consistency in their work ethic through the years have been admirable. Seeing the committee grow and make a bigger impact as each year passes by, really brings me pleasure. In a short period of time, ETSA has made a name for itself throughout the college and I am really glad to have such an active committee in our college.

Even though throughout the year education has been hampered by the pandemic, ETSA has put immense efforts into conducting workshops and events virtually for the students. Each member of the committee has worked hard to bring forward various technical and non-technical events and has grown exponentially throughout the year. With their commitment to providing knowledge to the students, I believe their annual magazine '**CIRKYTE**' will prove to be a great resource for the students, providing a great insight into the various topics. I would like to congratulate the whole team for the success of ETSA and wish them luck to continue their consistent efforts in improving our college.

Dr. Avinash Vaidya

HOD, EXTC

Electronics and Telecommunication Engineering is a constantly varying and ever evolving branch. I feel very proud to say that the Electronics and Telecommunication Students Association(ETSA) has now become one of the most motivational and influential student's committees of our college. The way this committee has transformed over the years in both technical and non-technical fields is quite amazing . The hard work of the members has been admirable and their innate desire to grow has taken ETSA to new heights in our institute. I am extremely happy to have supported a student body which has had some highly motivated and aspirational individuals as its members since 2017.

I am pleased to announce that ETSA is launching their annual magazine **Cirkyte**, for which the students have worked perseveringly. Working like a team while the whole world experiences a pandemic takes a lot of heart and courage, not to forget the educational commitments that come with being a student. The magazine gives us the opportunity to learn about the technical advancements in the world of communication and also brings with it the knowledge of non-technical areas that form the foundation of our day-to-day lives.

Good Luck!

Dr. Rajendra Khade

HOD, ETRX

Greetings
From an unnoted student body of the department, ETSA has now become one of the most successful student committees of our college. I'm pleased to be the witness for the flourishing of this committee. The hard work done by all the students in both technical and non-technical fields is worth admiring. The efforts taken by the committee to conduct every event smoothly is appreciated. The students did not ever complain about insufficient resources and always made out the best with the resources they had. I am proud to see what this committee has accomplished in such a short span of time.

The annual magazine of this committee is the perfect example of these students' efforts, capability, teamwork and dedication. **CIRKYTE** is the magazine which shares the concepts, innovations around the world and expresses them to the readers. I congratulate the entire team on the launch of its this year edition and am looking forward to many more.

Prof. Apeksha Chavan

Co-ordinator, ETSA

Education helps individuals in assessing various situations in life practically. ETSA believes that knowledge is the root of a tree and extra-curricular activities are the leaves of that tree. Just as without a leaf, a tree can't survive, similarly without these extra-curricular activities and skill training programmes students cannot maximise opportunities in professional work environments. ETSA believes in empowering students with skills by organising various events and competitions. These activities in turn help in the over-all growth of a student's personality.

I would like to thank our principal, Dr Sandeep Joshi for giving me the opportunity to be the coordinator of such an active team of students over the years.

I would like to congratulate the whole team on the launch of their annual magazine "**CIRKYTE**".

I am extremely proud of the whole team. The process of developing a magazine in an academic year is exhausting but that's how this magazine becomes a concrete source of knowledge and innovation. I wish the whole committee good luck for their future endeavours and hope that they surpass the milestones they've set for this year's issue of CIRKYTE.

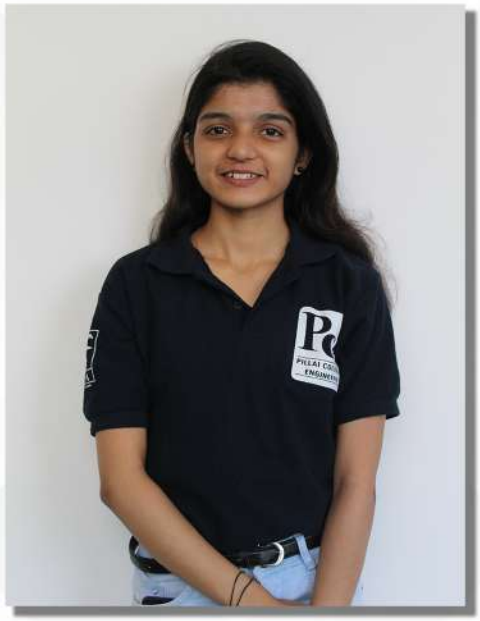
Nevedita kale

President, ETSA

The ETSA committee has been a source, to provide more knowledge for the students, in the field of Electronics and Telecommunication. It has generated a lot of opportunities for the students in various ways. It's my pleasure to introduce this year's edition of our annual magazine named CIRKYTE. I am grateful and honored for being the president of this innovative and hardworking committee.

It's not easy to run the committee without support from faculties. So I would like to thank our principal Dr. Sandeep Joshi for supporting our committee throughout. I would also like to thank Dr. Avinash Vaidya, HOD of the Electronics and Telecommunication department for supporting our thoughts and backing us always. A special thanks to co-ordinator Prof. Apeksha Chavan for guiding us during whole events and supporting our views to do more effective works.

The constant encouragement and involvement from the committee members have been the strong catalyst on which we as an ETSA committee have come till here. I would like to congratulate our magazine head, Divya Wairkar on the launch of this year's edition of the magazine. It included efforts and hard work done by the magazine team and also the graphics team. It took a whole year to make this magazine, and I hope it will be a nice experience for all the readers.



Divya Wairkar

Magazine Head, ETSA

Throughout the year, ETSA has been one of those active committees that has imparted knowledge on various topics by conducting different events. The post of magazine head has been an excellent experience with lots of responsibilities. It's the combined effort of the whole magazine committee to make this magazine from nothing to the most memorable one. This magazine includes different domains like technical, non-technical, art and poetry, etc. We gave our best to get our work despite the pandemic situation. We focused and tried to make a book which can give the knowledge of modern technology as well as provide the stories of humbleness to help the society. It was one of the ways to showcase the talents of our students.

The main hurdle during this was to have a deep research about the topic so that no wrong information could be delivered to our readers. After the deep research, the collective information was framed into sentences and then processed under correction. It was the responsibility of the graphics team to make the articles and work look catchy on the papers. I would like to express my gratitude to the graphics team for their support. I would also like to say thanks to our ETSA coordinator Prof.Apeksha Chavan for her immense support. I hope that every year our team does something extraordinary to keep the tradition alive.

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TECH CORNER

“Hypersonic Technology Demonstrator Vehicle”

- by Aaskrit Tiwari, SE ETRX

From ancient times to till now, India has always proved its landmark in technology which makes India always a step closer to betterness. India has always proved that it is not a country of 1.4 billion people but also a country of 1.4 billion brains and their invention makes our life easy.

Because of the current pandemic, the concept called "***ATAMNIRBHAR BHARAT***" had raised Indian creativity and inventions on another level. Various fields have been improved. For pursuing the greatness of Atamnirbhar Bharat our DRDO(Defense Research and Development Organization) successfully tested Hypersonic Technology Demonstrator Vehicle (HSTDV) which will lead to the development of hypersonic cruise missiles and vehicles in the future. This puts India in a selective club of nations that have demonstrated this technology.

What is HSTDV?

HSTDV is an unmanned scramjet demonstration aircraft for hypersonic speed flight, developed by India's DRDO. HSTDV is not a weapon on itself but is being developed as a car-

“The Summer Olympics used to give medals for artworks inspired by sports from 1912 to 1948”

rier vehicle for hypersonic and long-range cruise missiles. The HSTDV cruise vehicle is mounted on a solid rocket motor, which takes it to a required altitude. Once it attains certain mach numbers of speed, the cruise vehicle is ejected out of the launch vehicle. After that, the scramjet engine is ignited automatically.

On 7th September 2020,

India tested Scramjet technology using hypersonic technology demonstration vehicle, off the coast of Odisha which is developed by DRDO. DRDO had also launched a missile that achieved speeds up to mark 6 in the environment. DRDO said that it is a major achievement in defense technology. But what is this technology and how it is useful for our defense system?? It is being said that this is such a crucial technique in which a missile can be dropped not at speed of supersonic speed but at hypersonic speed. In the language of science hypersonic is called the supersonic on steroids which means fastest than faster. Faster than the speed at which sound travel is called supersonic that is marked 1 and as compared to the supersonic hypersonic travels approx 5times faster than the supersonic that is marked as 5. This means the speed of hypersonic is approximately 5 times faster than the speed of light.

According to DRDO

the vehicle tested first went up to 30 km in the sky and then caught the speed of mark 6. Now let's know what scramjet technology from which DRDO caught the speed of mark 6. According to Newton's third law of motion: "Every action has an equal and opposite reaction ". The same law is applied in the scramjet technique that says when the fuel is burnt in the rocket, its gas comes out from it and its reaction gives a heavy jerk to saproop rocket, which is a vehicle jerk that increases the speed of rocket called jet propulsion.

In the very beginning stage

when the jet is made the mixture of hydrogen & oxygen is burnt in it and it is necessary to fuel inside the rocket. But in the 1960s, they envisaged a technique in which oxygen could be taken from the atmosphere by not placing oxygen in a rocket to burn fuel and this is called scramjet technology. With this new technology, the rocket takes oxygen from the atmosphere and increases its speed. It has the advantage that the rocket does not need twice as much fuel, but this technology can only be used inside the atmosphere if the rocket exits in it.

" Napoleon was actually around 5'5", just an inch bellow the periods's average male height "

This technique was first used by the Soviet Union in 1991 and claimed to reach up to the mark. After many years of the Soviet Union's trial, the US adopted this technology, then China followed this technology. Now India has become the fourth country to do so.

There are two big benefits to India from this technology.
1) Defense sector will contribute a lot because the time to reach the target of the missile will be minimized.

2) Now it will also be possible to save fuel while sending the rocket, especially when the rocket is in the atmosphere.

The US Army is already on course of delivering its first hypersonic weapon capability to one of its units, which could be done before the end of this current year. India too has stepped on the gas. After the successful launch of the indigenously-developed Hypersonic Technology Demonstrator Vehicle (HSTDV), the DRDO is now looking to develop a complete hypersonic cruise missile system in the next four to five years. Such a capability will boost the ability of the military in targeting speeds two times that of the
BrahMos supersonic cruise missile, enabling India to have a significant advantage in future strike capabilities.

"Cows don't actually have four stomachs, they have one stomach with four compartments"

Flying V

By Kanojiya Abhijeet, TE EXTC

"The futuristic or next-generation aircraft"

In this modern world of technology, everything seems to be very fast and more efficient. Aircraft have played an important role in fast transportation and traveling. This mode of transportation includes less expenditure because, unlike railways and road transport, there is no need to spend money on tracks and road development. Normal aircraft have less capacity as compared to Airbus A350, but this drawback is covered by Flying V. The ability to carry cargo and passengers in wings and able to work in a more efficient way.

What is a Flying V?

The Flying-V is a long-haul aircraft where the passenger cabin, the cargo hold, and the fuel are all located in the wing. It is a proposed flying wing airliner under development, by researchers at the Delft University of Technology in the Netherlands. The passenger carrier aircraft is designed to be highly efficient for a long journey. With lightweight materials, it is capable to reach safety measures including less pollution. Flying V is a futuristic and fuel-efficient long-distance aircraft. Its name has been derived from its noticeable 'V' shape.

How is the Flying V designed?

"The engines of the Flying-V are positioned above and behind the wing such that the engine intake is still above the trailing edge of the wing. The aircraft resembles the futuristic design, with seats in its wings. It can accommodate passengers in its wings, making it more spacious as compared to normal aircraft. It is a V-shaped flying object which can hold the cargo and fuel in its wings. This aircraft uses the same runway as other aircraft follow, it can take off and land using the same infrastructures of airports. The capacity to carry the cargo and passengers matches the standard configurations with 314 seats. Since Flying V is developed by improved aerodynamics because of its overall smaller frame, it is light in weight. Due to less mass, it has less air resistance while flying and more stability is gained. In order to conserve the fuel resource, Flying V consumes 20% less amount of fuel as compared to other aircraft.

The first real test of a model of Flying V was successful by the control system in the Netherlands before it shipped off to Germany for its maiden flight. It collected results such as rotation on take-off was performed easily and occurred at a speed of 80 km/h. The plane's thrust was good and flight speeds and angles were as predicted. The predicted results were:

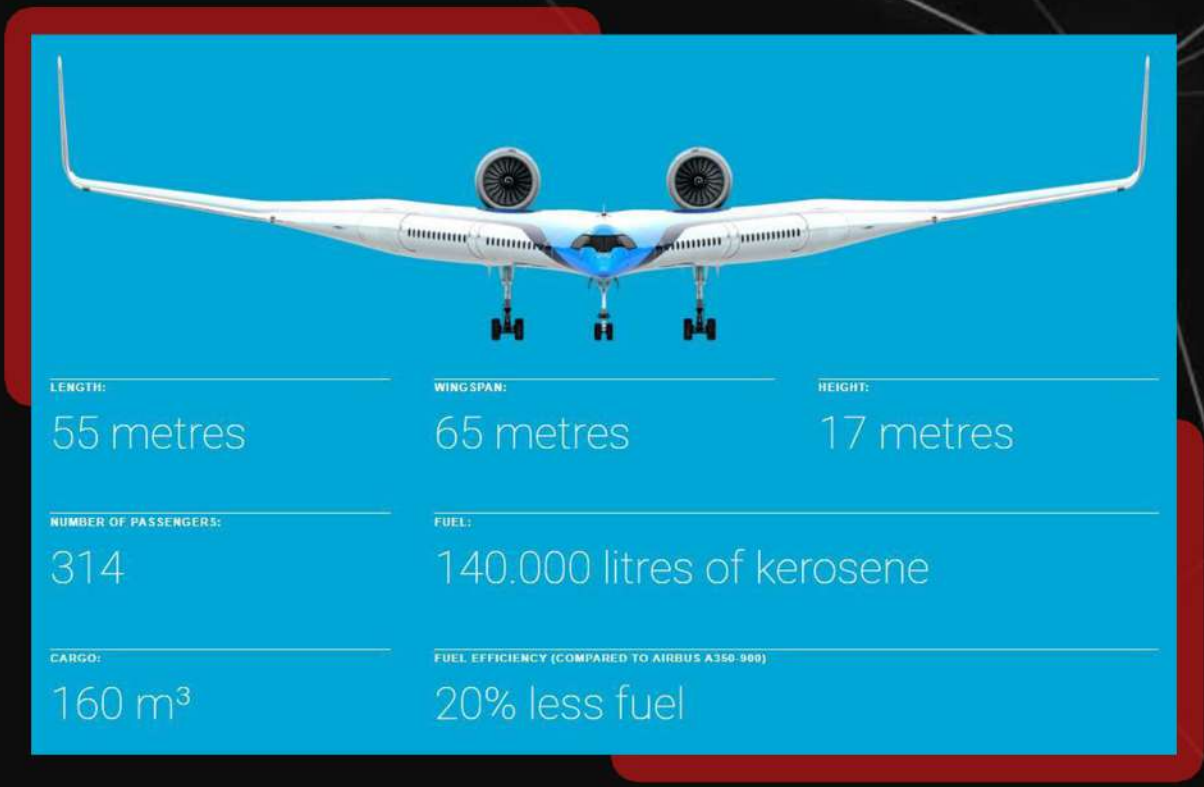
1.The center of gravity of the aircraft was located slightly more towards the rear than had been calculated in advance.

2.For the test flight, the team put extra weight into the nose and placed the landing gear a little bit further to the front of the aircraft. If the center of gravity isn't in the right location, the aircraft can become unstable.

2.During the test week, the team has had to repair the antenna to improve the telemetry.

"Diet Coke has about 30% more caffefine than regular Coke"

Different data were collected during the test and the team will analyze and work on it so that it can be implemented in real life. It offers the same seating and other features at a low cost to both users and the environment.



One of the best things that make the Flying V so promising is that it's a high energy-efficient aircraft design for long-distance flights. The design is expected to use 20% less fuel than today's most energy-efficient aircraft (Airbus A350) due to its aerodynamic shape and reduced weight. With all these qualities this aircraft meets the needs of the modern world toward less pollution. Thus, its goal was to motivate the next generation of engineers to think 'outside the box,' with the application of various advanced technologies and make the world a comfortable place to live in.

"The Ancient Greeks used olive oil as a sunscreen"

Sweat Powered Wearable

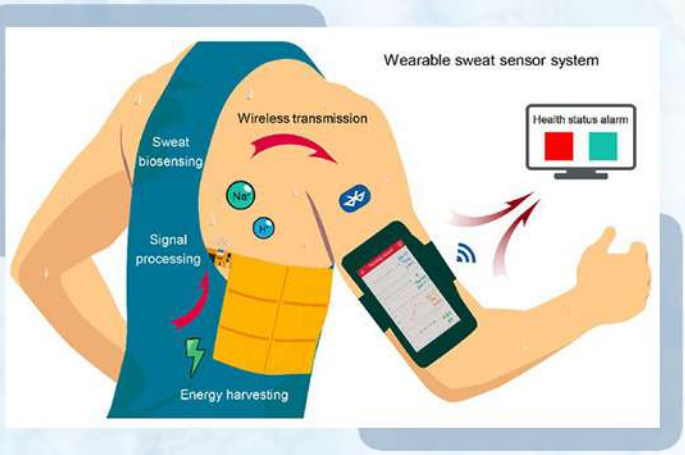
-Preeti Thite,
TE EXTC

What are Sweat Powered Wearables?

It is a fact that you all love your smartwatch and the amazing things you can do with it. But to keep it charged for a longer duration can be annoying. A longer battery life would be great but now-a-days batteries are too bulky and stiff and can't be used in wearables. There's a better way to power the next generation of wearables by using energy from the one wearing it though! Devices powered this way could be so small and handy.

Not everybody sweats the same so these wearables are made in such a way that they can adapt to varying conditions. A battery cell is created that has a new type of flexible supercapacitor that can be used to replace electrolytes that are found in batteries. The technology works by collecting the sweat which is naturally produced. In our sweat cells, we create a layer of enzymes that reacts with the lactate in sweat to split the electrons and protons and create an electrical current.

" A chicken has more bones in its neck than a giraffe "



How does it work?

There is a sufficient amount of biofuels inside a human body. Using them for operating devices was a logical choice. The main drawback was that the enzymes used to catalyze the fuel cell reaction would degrade. Because of it the electrode would stop functioning within a few days. To avoid the enzyme depletion issue, biofuel cells were demonstrated. To turn sweat into power a biofuel cell uses a layer of enzymes that react with the lactate in sweat to split the electrons and protons. The protons pass through a membrane to the cathode while the electrons flow through a circuit which gives power to the device.

The lactate biofuel cells were screen-printed onto a fabric headband and a wrist-worn sweat guard. The biofuel cells generated up to 100 microwatts per square centimeter which is enough to power both the LED and the wearable.

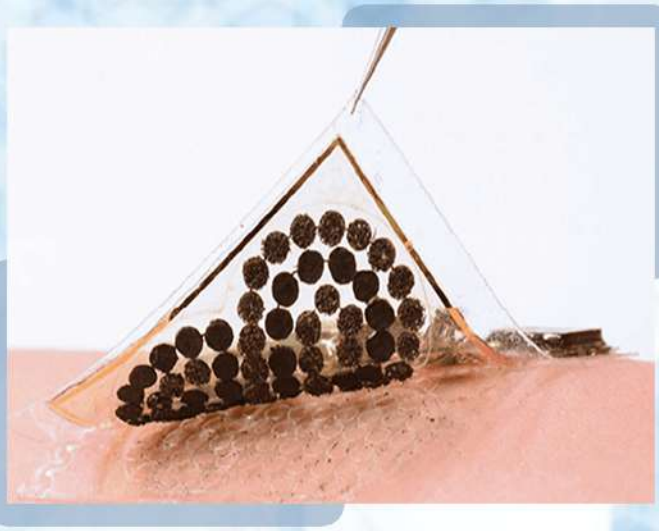
These wearables have more components than a digital watch does. Even the simplest activity tracker includes an accelerometer, memory, Bluetooth radio. Together, these items consume about one or two milliwatts. Indeed, boosting the power of wearable biofuel cells is one of the biggest challenges. If the cells can't generate much more power than the alternative technologies can, it will change the real product.

In reviewing the biofuel cell's design, researchers realized that the surface of the anode was relatively flat. This means that the anode was exposed only to those molecules which were resting directly below it. This greatly limited the amount of biofuel the cell could catalyze. In order to create flexibility, carbon nanotubes were used.

What are the limitations and how to overcome them?

Generally people don't sweat or at least not heavily enough to generate much power. If there is no sweating the fuel cell will run dry and stop producing power.

There are three ways we can overcome these limitations. The very first approach is we could use these wearables only where the availability of sweat is guaranteed. The second approach is we can add an energy storage element. For wearables that need a constant supply of energy like smartwatches an obvious solution is adding a battery or an ultracapacitor to act as an external energy buffer.The last and final approach is we could add a complementary non biofuel energy scavenger to the wearable.



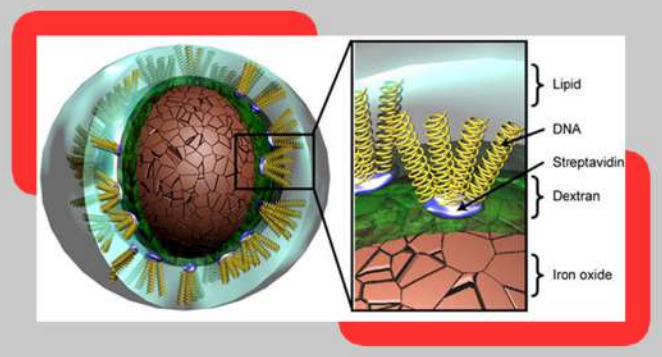
" Consisting of minimum 60% fat, your brain is the fattiest organ in your body "

NANO PROPELLERS For gene therapy

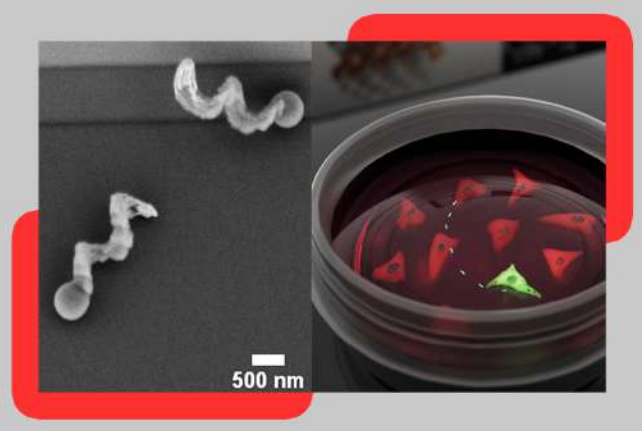
— By Ashith Hegde, SE EXTC.

As we move towards the future, technological advancements are changing our definition of normal. Things that people would have considered impossible a decade ago are now ingrained in the workings of our daily lives. This revolution in technologies is showing great changes in all fields of life, and one such example is Medicine.

Gene therapy is a medical field that concentrates on the utilization of the therapeutic delivery of nucleic acids into a patient's cells for the treatment or prevention of a disease, rather than using traditional drugs or surgery. The first successful nuclear gene transfer in humans was performed in May 1989, and till date, more than 3000 gene therapy clinical trials have been completed, ongoing, or have been approved worldwide.



A lab at the Max Plank Institute of Intelligent Systems(MPI-IS) has succeeded in developing a creative way to employ nano propellers for gene therapy. The researchers from the Micro Nano and Molecular Systems Lab and the Modern Magnetic System Department at MPI-IS have developed nano propeller devices that use a magnetic field to be steered into the interior of the cells and each of these devices is about the size of a bacteria. The magnets that these nano propellers are made of, were created for the first time for this very task.

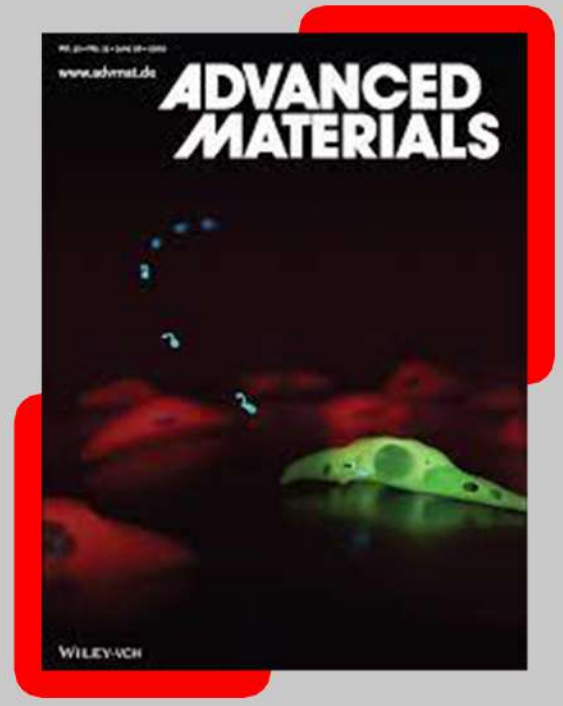


Most powerful magnets are either not biocompatible, cannot be manufactured, have fine details, or lose their properties as they are sized down to miniature scale, thus cannot be used to manipulate tiny objects from a distance and inside the human body. To counteract this, the team created a magnet using an iron platinum "L10" alloy that has magnetic properties that surpass the most powerful micromagnets known till now. On top of that, this alloy is non-toxic and can easily be manufactured into tiny devices such as propellers and the propellers manufactured from these alloy due to strong magnetic properties are the fastest ever created in the Micro Nano and Molecular Systems Lab, reaching the speeds of 13 propeller lengths per second.

Most powerful magnets are either not biocompatible, cannot be manufactured, have fine details, or lose their properties as they are sized down to miniature scale, thus cannot be used to manipulate tiny objects from a distance and inside the human body. To counteract this, the team created a

"You only move your lower jaw when you are chewing"

The team from MPI-IS collaborated with scientists from the Francis Crick Institute, a biomedical research centre in London, and the Max Planck Institute for Medical Research to coat these nano propellers which were made using the new magnets, with DNA that codes for the production of green fluorescent protein inside cells. The researchers then used a magnetic field to guide the propellers into lung carcinoma cells. After some time under observation, the carcinoma cells began to glow green, indicating that the technique has great potential for highly accurate delivery of DNA and even drugs into specific parts of the body. The researchers also believe that these new magnetic nano propelling devices can be used to deliver antibiotics precisely at much lower doses, thereby reducing the chances of antibiotics resistance.



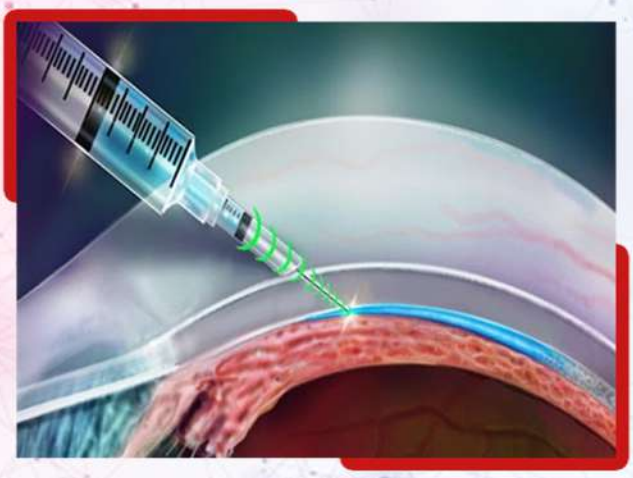
Vincent Kadiri, the first author of the highly interdisciplinary research project "Biocompatible magnetic micro and nanodevices: Fabrication of FePt Nano propellers and cell transfection",

"In an average lifetime, human skin completely replaces itself 900 times"

SMART NEEDLES

By Kanojiya Abhijeet, TE EXTC

Today modern medical science is demanding the use of information technology in a wide range of applications. By 2018, there were approx 18 million cancer cases around the globe. Out of which 9.5 million cases were in men while 8.5 million cases were in women. They were the causes of death. Late treatment and lack of medical facilities can lead to rising in the graph of deaths. The world has come a long way. A lot of discoveries done previously seem to be a hindrance for fast treatments. The smart needle is an advanced device that can be used for the detection of cancer.



Cancer is a disease, in which the growth of abnormal cells can be observed which spreads throughout the body. The most important phase of this disease is the phase in which it is detected. Late treatment can lead to more expenses and loss of life. To detect cancer more quickly, scientists have developed a new technique that can detect and diagnose one of the most types of cancer within seconds using lights. The group of multidisciplinary researchers has developed the "smart needle" probe, which uses light to point the tissues of cancer or cell instantly.

"Smart needle" probe is made up of fiber optics including a fine needle in it. This needle can look for cancer under the surface of the skin and till now it is capable of doing the treatment of lymphoma cancer. This needle uses the technique called "Raman spectroscopy" which measures the light scattered by tissues when the low-power laser is shone onto it. It detects the fingerprint of disease which in return helps to spot the tissue with cancer in a few seconds. This process will help the doctors as well as patients to identify the presence of cancer easily and to avoid the need for surgery which can cost more to some pa-tients. The probe has been tested on 68 patients till now in the laboratory and the results are satisfactory showing it can differentiate between healthy and cancerous tissue.

"Smart needle" is an exciting project that can revolutionize the approach of diagnosis for the treatment of cancer in the head and neck region. It can help to reduce the need for surgery and can speed up the diagnosis process. It is observed that this technique can be more efficient in the future with the boon in the field of technology.

"Shakespeare invented the work "swagger""

"Supersonic Aircraft"

— By Preeti Thite, TE EXTC

Boom Supersonic Aircraft plans to begin test flights to bring back the once popular supersonic aircrafts. It was said that the plane is the first supersonic jet to be independently developed. A handful of US companies are exploring ways to restart supersonic passenger travel for the first time since they were discontinued in the early part of this century.

Supersonic aircrafts were discontinued because they couldn't travel on all routes. Moreover, companies complained of high maintenance costs and low passenger numbers. An Air France Concorde crashing just minutes after take-off in July 2000 resulted in the death of all passengers aboard. This probably was the final nail in the coffin for supersonic aircraft which extended for nearly two decades until now.

The supersonic planes being developed now make less noise and are more fuel efficient than the Concorde. The aircraft will have 65-88 seats with prices expected to be around what you pay for a business class. Boom aircraft says it has already received pre-orders for planes from Japan Airlines and Virgin Group. The company wants to cut off the flying time across the Atlantic Ocean to about three and half hours which in essence is almost half of what it takes now.

The body of the XB-1 is 21 meters long. The jet is powered by three J85-15 engines made by General Electric Company. The XB-1 undergoes a carbon-neutral flight test program during those tests. Boom plans to use the XB-1 demonstrator to check the plane's equipment and engineering design. If the flight tests are successful, the corporate plans to continue development of its planned aircraft model, called Overture. The XB-1 may be a version of the Overture, but about one-third of its size.

" The Danish Realm has a larger landmass than South America "

VIRTUAL REALITY

CHANGING OUR PERCEPTION OF SELF AND OTHERS

By Ashith Hegde, SE EXTC.

The word 'Reality' plays an important role in our lives. Everyone shares the same reality but perceives it differently and everyone has their own version of reality which they want to be true. But what if reality can be bent according to someone's imagination? This is where virtual reality comes into play. Virtual reality is a computer simulation of a world similar to reality or totally based on the creator's version of reality. Through virtual reality, you can enter a world fully based on someone's imagination opening infinite possibilities.The concept of Virtual Reality has been around since the 1950s. However, the term virtual reality was coined much later by researcher Jaron Lanier in 1987. Virtual reality has various applications and new applications are being found and developed every day as it's effects are not like any existing technology opening scope for finding solutions for problems which couldn't be solved earlier.One such problem is an innate social bias and this problem has been tackled experimentally by Mel Slater and his team in the research paper "Changing Bodies Changes Minds: Owning Another Body affects Social Cognition". Social bias, also known as an attributional error, occurs when we unwittingly or deliberately give preference to certain individuals, groups, races, sexes etc. This problem can be tackled by the use of the embodiment illusion. The embodiment illusion is triggered by the use of virtual avatars in the virtual world and it changes one's perspective of self, by the embodiment of self in the virtual avatars. As the virtual avatar takes the place of one's body, it makes our self-cognition believe that the avatar is the real body expanding our horizons of how we perceive ourselves and how it affects or perception of others. People can be placed in a virtual avatar of size, gender and race creating a sense of association with that group.The use of the embodiment found a number of changes in how the person who underwent the experiment felt about the group before and after the experiment. It was found that despite being relatively impervious to social factors, the

"Strawberries have more Vitamin C than any citrus fruit"

the experimental modulation of body ownership had a number of interesting effects on one's social cognition. After the experiment, the participants rated the other's face as more attractive, more physically similar to their own, and they were also more likely to harmonise to the other's opinions. In a similar experiment, using an immersive virtual reality set-up, the embodiment of light-skinned people in a dark-skinned virtual body reduced their implicit racial bias as measured by a racial implicit association task. Similar results were also observed when adults were placed in child-sized bodies in the virtual environment. After the experiment, they could associate with their children more.A future where everybody will cast aside their social differences may seem like a dream but that dream could come true with the help of virtual reality.

"A nap of 60 minutes improves alertness for up to 10 hours"

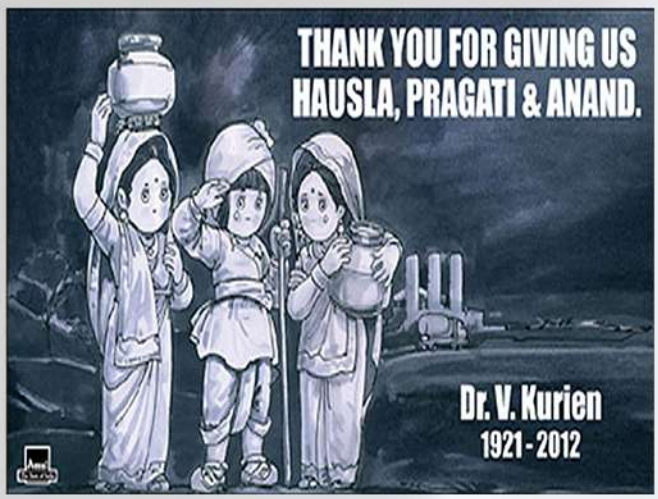
The White Revolution

- by Aaskrit Tiwari, SE ETRX

Kanuben Choudhary. The name was first heard by the world when the name was taken by the speakers in a rewarding conference organized by the Government of Gujarat. The woman in question was then awarded with the title of "***The pride of Gujarat***". This honour is usually awarded to people whose contributions are extraordinary in the welfare of Gujarat. Kanuben was one such person. So who is Kanuben and what did she do? To understand this, we have to go back in time to the year 1942. This was a period when farmers did not get the right price for their milk production.

At that time there used to be a milk company named "Polson" owned by Pestonjee Eduljee The company supplied milk from Anand village in Gujarat to Bombay. Buying it at reduced prices and selling it for profits is just how the company operated. The farmers were very upset with this arbitrary milk price of Pestonjee. There was another reason for their problem, Polson used to stop the money of supplying milk without any reason.The farmers felt very exploited by this behavior of Polson and they went to seek help from their then leader, Sardar Ballabhbhai Patel.

"A cow produces an average of 6.3 gallons of milk daily and 350,000 glasses of milk in a lifetime"



He said "If you want to avoid clever Pestonjee, then you farmers will have to do all the work from milk production to milk supply and selling milk itself which you can do by creating a co-operative society." His first suggestion was to meet Morarji Desai. When the farmers approached Morarji Desai, a co-operative society was formed and Tribhuvan Das became its first president. Tribhuvandas Kishibhai Patel went to a village and asked farmers to join the co-operative movement. The society created was called "Kiara District Co-operative Milk Producers Union Ltd."

Farmer then decided to give up their partnership with Polson.They also decided to control all aspects of delivering milk to Mumbai themselves. These decisions were going to set a benchmark of India's milk trade in the coming times.But it was very difficult to stick to these two decisions as Pestonjee himself met the British to put a dent on these plans.The farmers retaliated by refusing to supply milk and also protested this vicious move by going out to the roads to protest. However, gaining autonomous control wasn't going to be enough as more problems awaited them.

By now, India had become independent and Sardar Patel had become the new deputy Prime Minister of India, due to which farmers got a government milk processing unit for rent where all the farmers would process milk and send it to Bombay for sale.But right now, the Kaira society had to become Amul, and the rest was going to come out of Anand Gram and come to the whole country. The country was going to become the largest producer of milk in the world, in which a big role was going to be played by Verghese Kurien. The man who's also known by monikers like 'Milk Man of India' and 'Father of White Revolution'.

Born on the 21st of Nov 1921 in Calicut, Kerala, he was a scholar in dairy engineering when he met Tribhuvandas and joined the Kiara Society. He then renamed Kaira district co-operative milk producer union ltd to Amul (Anand Milk Union Ltd.) Kurien's contribution gave Amul a new status. The business grew from 250 litres/day in 1952 to 20000 liters / day. Today, a co-operative movement founded in 1942 has turned into a ₹38,550 crore business. Amul has become the largest dairy and food brand in India and ninth 9th largest milk processor globally, handling 9.34 MMT milk per annum. Amul's cooperative model pioneered India's White Revolution that helped India become the largest producer of milk in the world.

Amul has 3.6 million milk producers affiliated with 80 dairy plants across India with a total milk handling capacity of 35 million litres per day. It also is the largest exporter of dairy products from India and the most important thing is that each and every product of Amul is directly dependent on farmers like Kanuben Chaudhary who currently earns around 95 lakhs per annum by selling milk.
We wish all the luck to Kanuben and the thousands of women in Gujarat who've worked in tandem over the years to make Amul the brand that it is today!

Amul

"To get the amount of calcium in an 8-ounce glass of milk, you'd have to eat one-fourth cup of broccoli, seven oranges or six slices of wheat bread"

Tech YouTubers

-by Khagesh Chavan,
TE EXTC

iJustine is a well-known tech YouTube channel. It has close to 7 million subscribers to date. Justin Ezarik is an American YouTuber who hosts this channel. A video uploaded on this channel called "300-page iPhone bill" received a lot of attention. This channel boasts of a large collection of unboxing videos. You can find some of the most highly rated gadgets and accessories with an extremely wonderful video quality.

DetroitBORG is a YouTube channel created by tech guru Michael Kukielka. He posts detailed tech reviews of brand-new gadgets, software, and upcoming accessories on the market. Two of his videos featuring Samsung and Apple products got a whooping 5 million views each. Technology can be complicated but he tries to make it easy. This channel is rapidly marching towards 2 million subscribers. One of the best tech YouTubers, Marques Brownlee (MKBHD) had wished him a happy birthday on Twitter in 2014!

Arun Maini is a British tech reviewer who is well known by his channel's name Mrwhosetheboss. He serves the audience with his knowledge of the technical aspect of gadgets especially smartphones. He had also claimed in one of his videos that he has the biggest collection of smartphones. Every latest gadget and smartphone is reviewed thoroughly on this channel. He belongs to Indian ancestry.

Austin Evans is a Tech YouTuber from New Jersey who uploads videos featuring gaming PC builds. He has launched this channel way back in 2007. A wide range of PC-building videos can be found on this channel. The guy has around 5 million subscribers which is pretty impressive. If you are interested in gaming pcs and the process of building them then channel should be your ultimate destination.

"We watch over 1 billion hours of YouTube videos a day, more than Netflix and Facebook video combined"

STORIES WHICH INSPIRE

A Helping Monster

by Ashith Hegde, SE EXTC

"*Monster helping people*", doesn't sound quite right in your head, does it? You'll understand these words when we look into the story of an interesting man named Ravi Katpadi.

Ravi Katpadi from Udupi, Karnataka on the daily basis works as a construction worker and earns around ₹450-550 a day but during the grand celebration of Sri Krishna Janmashtami, he paints his body and wears different 'Vesha' for raising money for underprivileged children in need of corrective surgery in Udupi.

In the temple town Udupi, during Janmashtami, you'll witnesses lakhs of devotees flocking to the town every year with religious fervour and radiance, and find a lot of people dressed in a vivid collection of costumes, especially those of Sri Krishna and Huli Vesha. But Ravi's outfits are quite unique compared to others. Inspired by Hollywood and the foreign culture he wears outfits of characters or rather monsters from various movies and folklores. Some of his previous vesha or outfits were faun from Guillermo del Toro's wildly popular movie Pan's Labyrinth, The Lizard from The Amazing Spider-Man, and Krampus, the half goat-half demon of Central European folklore. So dressed up as a monster Ravi goes around Udupi during the festival to raise money for the needy.

In 2013, Ravi came across a Television advertisement where a woman was in dire need of money for treatment of her daughter's right arm. This is where the inspiring story of this man began. Ravi in an interview said, Seeing a young child unable to use her own arm tore him apart and the parents told him that her hand could be fixed through surgery costing about 1.15 lakh rupees, which was much beyond the limits of their financial ability and that's when he thought he could do something to help her. Since then he has raised 50 lakh rupees to help various children in need.

Several NGOs have come forward to help him achieve his goal of helping others by raising funds for his cause. Fundraising website, Ketto has raised lakhs of rupees and MILAAP made a documentary on Ravi named, "Ravi Katpadi, A Kind-hearted Monster" which collected over ₹16.8 Lakhs.

On 15th January 2021, he was also featured in the Karamveer special episode of the famous show "Kaun Banega Crorepati". However, in the process of raising funds for those in need, the repeated application of oil paint on his skin has taken a toll on Ravi. His skin has several ruptures and is quite severely damaged.

Also, it takes 24 hours to get ready so during the three days of the festival he just sips on tender coconut and other juices as he can't eat anything. However, in the process of raising funds for those in need, the repeated application of oil paint on his skin has taken a toll on Ravi. His skin has several ruptures and is quite severely damaged. Also, it takes 24 hours to get ready so during the three days of the festival he just sips on tender coconut and other juices as he can't eat anything.

Seeing stories like Ravi inspire us to do something unique for society, We would never imagine a monster helping people but Ravi turns into monsters to help those in need, and even if he suffers he continues moving forward because for him the satisfaction of improving someone's life is enough.

"An ant will survive a fall from any height because its terminal velocity" can never be high enough to kill it.

AN ACT OF KINDNESS

- Preeti Thite, TE EXTC

N Uday Reddy, Deputy Superintendent of Police

It is said that Kindness is an act of a human being that comes from within. It all started like any other morning of a day when N Uday Reddy was conducting a routine field visit within the tribal hamlet of Jamda village in the Integrated Tribal Development Agency (ITDA) area, as a part of the community relations development.

During his visit, an elderly person walked up to him with a written application. The application carried a request seeking medical care for 20 people in the area who had lost their vision due to cataracts and other eye ailments.The request took priority, as the remote villages are cut off from urban areas making it difficult for them to access proper healthcare.

Uday wrote to concerned departments forwarding the request from villagers but didn't receive any response. After a few weeks, he wrote to the L V Prasad Eye Institute and Amma Diagnostics requesting medical assistance and the doctors agreed to screen the patients and suggested treatment accordingly. He also reached out to other villages to identify elderly persons suffering from eye ailments. About 600 patients were screened and also registered for the treatment. However, they might not afford to pay for surgeries, eyewear,

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He also reached out to other villages to identify elderly persons suffering from eye ailments. About 600 patients were screened and also registered for the treatment. However, they might not afford to pay for surgeries, eyewear, pre-operative screening, and other treatments. Finally, Uday Reddy decided to pay for their treatment with his own salary Uday said that there was a need to intervene and address health issues of the elderly persons, he believed in good work and could manage the expenses of the villagers.

Now over 70 eye surgeries are complete so far, and over 550 medical camps have been held to screen and identify patients. The identified patients were taken to the police station and were taken to the hospital in buses. They are sent back after treatment is complete. Out of the 600 patients scheduled to be treated by doctors, about 300 patients have been treated so far. Durgu Patel, head of the Adivasi community of Adilabad said that the police officer has helped the locals gain better control of their lives. The eye ailments limited the villager's ability to move around especially at night. The medical camps and operations have helped the elderly to become more independent.

Also other than addressing health concerns he and his team are also working to involve the youth in the community. The main aim is to understand individual requirements for education, organize jobs, sports, and make them aware of cybercrime and fake news as well as job opportunities in the police department.

The officer who is yet to complete a year of duty says that this is possible only with help from his family. He also says, "**I have fewer personal expenses and can manage to help the needy over the next couple of years as well.**" Thus, N Durga Patil has taught us that being good towards people for no reason does not cost anything. Instead, if a person behaves kindly towards everyone and thinks about others, and remains selfless, then it helps a person to grow morally.

"The only one letter dosen't appear in the periodic table is the letter J"

THE INDIAN AGRICULTURAL ACTS OF 2020

- Ashith Hegde, SE EXTC

We all know about The Farm Bill of 2020 which was making the headlines of all the newspapers, and trending pages of all social media websites when it was implemented. But do we even know what did the bill consist of, or why did the farmers decide to revolt against it? To answer this question we'd need to take a look at all the aspects of this bill to understand the perspective of both the government and farmers before we decide to take a stance.

Farmers are the backbone of society in developing countries like India. The agriculture sector is one of the most important industries in the Indian economy and approximately 60 percent of the Indian population works in this industry. With such statistics, all the rules and regulations affecting the farmers play an important role in our society.

What is The Farm Bill of 2020?

The Indian agriculture acts of 2020, often referred to as the Farm Bills, were three bills passed by the government namely The Farmers' Produce Trade and Commerce Bill, 2020;

The Farmers Agreement of Price Assurance and Farm Services Bill, 2020 and The Essential Commodities (Amendment) Bill, 2020. These Farm bills were designed to give farmers the freedom to trade across states and were intended to help the farmers who don't have the means to bargain for their produce, in turn empowering them to turn into traders of their own produce.

The Act on Agri market allows farmers to sell their produce outside the pre-existing APMC Mandis to whoever they want and anyone can buy their produce even at their farm gates. The intent behind this law was to create a new ecosystem where the farmers and traders will enjoy the freedom of choice of sale and purchase of agricultural produce, promoting inter and intra-state barrier-free trade and commerce outside the physical borders of APMC Mandis

Problems with the old system

The issues with the pre-existing system were that the farmers had been facing various problems like overproduction, low crop prices, high transportation costs, high interest rates, and growing debt. Farmers worked to alleviate these problems. The other major issue with the existing MSP-based procurement system was that it was working in dependence with the middlemen, commission agents, and red-tapism of the APMC officials. An average farmer found it difficult to get access to these mandis and More than 90% of farmers have been out of the ambit of the MSP-based procurement system.

Why did the farmers from some states decide to revolt against it?

Farmer unions in Punjab and Haryana fear that these laws enacted at the center will dismantle the MSP system, over time allowing big corporates to dictate terms reducing the income of the farmers. They also fear that because of the virtual disbanding of the mandi system, they will not get the assured price for their crops, and also the commission agents who pitch in with loans for them will be out of business

Their demands

The key demand of farmers is the withdrawal of the three laws which deregulate the sale of their crops.

They want the mandi system to remain in place and will also settle for a legal assurance that the MSP system will continue, ideally through the amendments of the laws.

Pros of the bills

- The main advantage of the new system creates an ecosystem allowing the farmer to move towards a more freer and flexible system.
- It will allow them to sell their produce outside the physical territory of mandis and create an additional channel of marketing for the farmers.
- These bills only create a parallel system working with the existing system giving the farmers an option to be able to bargain and creating a competitive market
- The amendment to the Essential Commodities Act removes the scare of the farmers that the traders who buy from farmers would be punished for holding stocks that are deemed excessive in turn inflicting losses for the farmers.

Cons of the bills

- The bills hamper the monopoly of APMC mandis, allowing the sale and purchase of crops outside these government-regulated market yards
- The Farmers' Produce Trade and Commerce Bill does not give any statutory backing to the MSP system.
- The government declares MSP's for various crops, but there has been no law mandating their implementation
- These bills are placing farmers and traders at the mercy of the civil servants, and not the courts

Thus, the simplest solution to the farmers' protest with respect to bills would be including a statutory backing to the minimum selling prices, eradicating the fear of the farmers. Giving farmers the opportunity to be able to become traders of their own produce is great but in most cases, the farmers don't have the means to make this possible. These create an environment where those who are not able to reap the benefits from the new laws will still be able to sell their crops at a decent price.

You may not work in the farming industry and think that these laws have nothing to do with you, but living in a society where the majority of the population works in this industry still makes an impact on your daily life as a whole. So, it is important to realize this and be aware of all the major changes taking place around us.

**"A million seconds is 11 days but
A billion seconds is 31 years"**

Covid Warriors

Kanojiya Abhijeet, TE EXTC.

One mishap can shatter the lives of many. On the 31st of December, 2019just before reports of cases related to an unusual disease from the city of Wuhan in China started doing the rounds. WHO was one of the first bodies to be informed of the matter and before it could take any action, the situation was already out of their hands. Crashing economies, rising cases and many unfortunate deaths around the world followed suit. It's in fact a no-brainer to state that India, the second most-populous country in the world wasn't an exception either. What followed was a complete lockdown effective from the 24th of March, 2020.

Asking over a billion people to stay home for their own safety seems amazing on paper but not if it's been asked of a developing country like India. With a questionable economy and millions of workers below the poverty line this plan was bound to have its own set of repercussions. Daily wage workers from different parts of the country had nowhere to go as all transportation came to a standstill. With no money to fend for their own, a majority of them embarked on a journey back home which carried a huge risk of them losing their lives in the process.

In these tough times we found some heroes and through this piece we'd like to appreciate the efforts of a few of them

Volunteers from 'The Art of Living' from across the country came forward to help those the most. Carrying ration kits on their shoulders, the volunteers walked around 1.5 kilometres at times to help migrants who were deprived of help from the government itself. One such village which needed help was situated in the Kalchini block of West Bengal's Alipurduar district. A hilly terrain which made transport even harder for them. Ram Kumar Lama's team of volunteers reached out to 32 villages in Kalchini block. It took them one day to visit a single village to provide help. Their motto was that no one should go hungry in the community.

Lockdown impacted a majority of daily wagers. So in order to help them, Sheetal from Delhi undertook the initiative to feed the needy ones.

It started from ten meals per day but by getting more helping hands the number increased and reached almost 200 meals per day. 'Project Annapoorna' was born out of this situation. As of now, Project Annapoorna has around 50 volunteers who serve more than 60,000 meals to daily wagers. If the motive and intentions are pure, then no one can stop you from doing good deeds is exactly what their efforts teach us!

We salute all the warriors who contributed to the cause. More power to you we say!

One of the most impacted states due to the Novel Coronavirus was Maharashtra. Boasting the world's biggest slum didn't help its case either. Dharavi housed most of the migrant labourers. To provide these migrants with proper masks and gloves, people like Reshma came forward. Not only safety kits but also cooked food was provided. Due to strict protocols Reshma and other volunteers were stopped by the police but were allowed after listening to their cause. Reshma's team of volunteers distributed around 800 packets of ration and 2000 parcels of cooked food.

"The best place in the world to see rainbows is in Hawaii."

POETRY CORNER

गुजरता ये वक्त

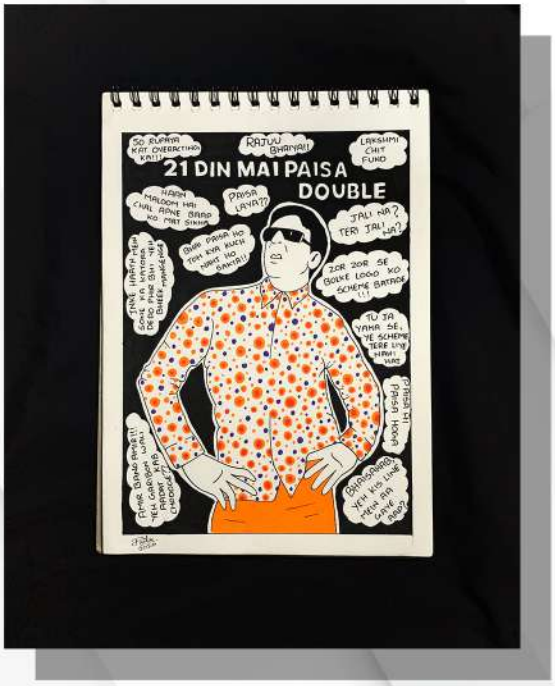
बदलते इन पलों में, हां, मेने आज मे झांककर देखा।
डोर एक बचपन की अब जवानी में कमजोर होते देखा।
जहां सिक्का चवन्नी का चार खुशियों का जरिया था,
वहां नोट हजार का भी अब कम पड़ते देखा।

मासूमियत और भोलेपन की तस्वीर थी उस आंगन में,
शरारतों में छुपी वह हंसी की गूंज थी उस आंगन में,
अब जब आंखे मूंदी उस बचपन से
तो उन हसीन यादों को अब मेने धुंधला होते देखा।
बचपन की बेफिक्री में लबों की मुस्कान भी सच्ची थी,
अब मुस्कुराते इन चेहरों को छुपाते हजार गमों को मैंने देखा।

किस्से तो अनेक थे इस सफर में,
पर बदलते इन पलों में, हां, मेने बस आज मे झांककर देखा।
जिम्मेदारियों की दौड़ में वक्त से लड़ते,
मेने अपने बचपन को अलविदा कहते देखा।

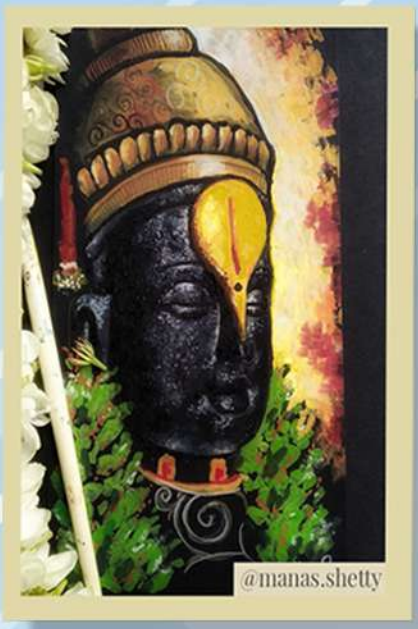
— Tanish S. K.

ARTIST CORNER


21 DIN MAI PAISA DOUBLE


@SANKARSHAN.27


CHETAN JOSHI
9623047015
राधाकृष्ण


@manas.shetty

ETSA
2020-2021

EVENTS CONDUCTED IN ODD SEMESTER

CYBER SECURITY

ETSA, PCE organised a webinar on Cyber Security and Ethical Hacking on 08th August, 2020. The speaker for this event was Mr. Devang Karelia, an ethical hacker, cyber security researcher and the founder of proton security. During the workshop, students were informed and explained about various types of hackers, different ways and various processes of hacking in detail. Live demonstration of ethical hacking was set forth followed by a doubt solving session.

LATEX

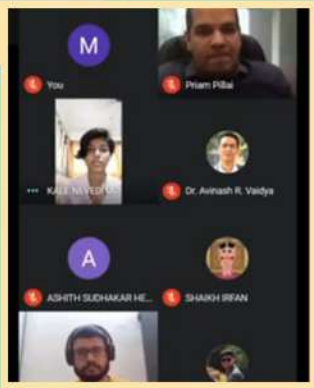
LATEX workshop was conducted on 6th September 2021. This workshop helped students get familiarised with the LaTeX software system, which will help them to create their own reports and Blackbook for their final year projects. Our speaker for the event was Ms Ruchira Patole who presented a really informative and interactive session for our students.

BLOCKCHAIN

ETSA conducted a Blockchain webinar on 12th September, 2020 on the online platform Google meet. The speaker for this event was Mr. Arjun Sasikumar. Through this webinar students were made aware of blockchain and its application in cryptocurrency. The speaker started with the history of money, which explains the change in the field of currency from barter system to cryptocurrency. Students were also explained about bitcoin and various types of cryptocurrencies. The webinar was a great success.

STARTUP TALK SERIES 1

ETSA-PCE in association with IIC PCE organized a webinar called the "Startup Talk Series" on 19th September, 2020. The event consisted of a total of 4 speakers followed by Mr. Priam Pillai, Prof. Arun Pillai, Prathamesh Damle and Ketan Jain who gave the attendees of the event insights into their start-ups. Proper steps to start any company were discussed. The speakers shared their own experiences of facing failure and setbacks and the way to overcome them. Students were encouraged to follow their ideas to convert them into startups. The experience turned out to be a whole lot overwhelming.



EVENTS CONDUCTED IN ODD SEMESTER

CREATIVE CARNIVAL

ETSA organised an event Creative Carnival on 29th September, 2020 on the online platform. All the students from different departments and colleges participated in the event. Creative Carnival consisted of various non-technical competitions wherein participants registered online. The event was a platform for all the participants to showcase their talent and creativity. Efforts and ideas of the participants were greatly admired. The competition took place in different parts and at the end all the winners were given prizes and certificates. The event was a clear winner.

STARTUP TALK SERIES 2

"Startup Talk Series" in association with IIC PCE was organized on 12th December, 2020. The speaker for the event was Mr.Swapnil Gaul, Founder of Numeregion PVT LTD. He shared his experience till date about how he tried to set small goals to become an entrepreneur.His life story was a motivation for all the students. He explained the basic difference between business and entrepreneurship. Further the doubts of students were cleared in the Q & A session.

PYTHON

ETSA organized a webinar on Python on 6th February 2021. Mr Vivek Vaishya, our speaker for the day introduced students to Object-Oriented Programming and then talked about topics like Advanced Python and GUI development Pyside 2(Qt). He also coached the students on the development of a two-player Tic Tac Toe game using GUI helping students grip the basic concepts of python and get started on their own learning journey.

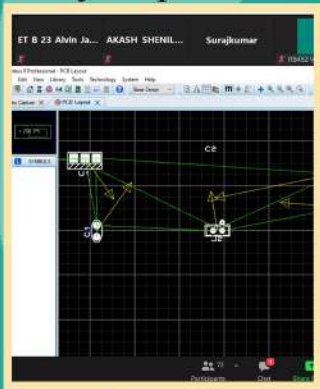
EVENTS CONDUCTED IN EVEN SEMESTER

WOMEN'S DAY

International women's day is celebrated on 8th March every year and ETSA organised a fun celebration for the same. The event was conducted on 7th March 2021 for the teachers of EXTC and ETRX Department of Engineering. The event started with a special video message and consisted of a variety of games to create a celebratory atmosphere. All the teachers really enjoyed the event and the event concluded with a fun little game of Antakshari sung by everyone.

STARTUP TALK SERIES 3

ETSA PCE in association with IIC PCE organized a webinar "Startups Talk Series" on 27th March, 2021. Our first speaker for the day was, Prof. Munawira Pillai. She explained the actual meaning of startup with the help of slides and also shared her journey which led her to a successful business venture. Our second speaker was Prof. Salim Jafri. He explained about his startup and explained why proper collaboration with people is very important in a startup. Both speakers' journeys about starting from scratch to successful startup was really inspirational.



PROTEUS

The Proteus is a proprietary software tool suite used primarily for electronic design automation. A workshop for Proteus was conducted by Prof. Aboli Khedkar on 17th April 2021. This workshop gave students an in-depth tour about how to use the software and our speaker shared with them all the details they needed to get started with their own designing. This enabled students to develop and create their own circuit and PCB designs.

ETSA TALKS

ETSA organised a webinar for their annual ETSA TALKS on 24th April 2021. The speaker for the event Mr. Maruti Pawar shared his inspiring stories, lighting a spark in the students and inspiring them to move past all the hurdles in their life with confidence. The event also gave a brief highlight about ETSA's journey through the pandemic and featured the launch of our annual magazine "CIRKYTE" which shares immense knowledge about various disciplines.

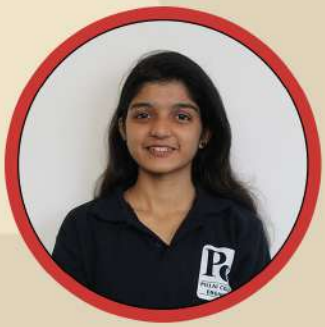
ETSA COMMITTEE

Janhavi Kharmale

Nevedita Kale

Anmol Sharma

Ajay Magar



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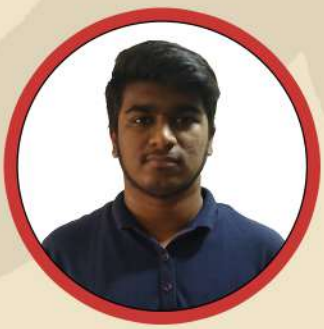

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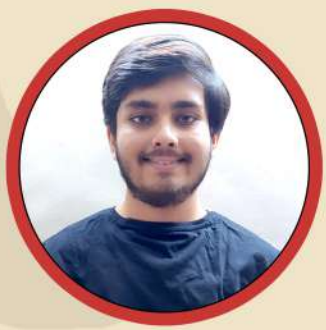

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B.M.M.
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B. Sc. (Computer Science)
B.Sc. (Biotechnology)
M.Sc. (I.T.)
M.Sc. (Biotechnology)
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M.Com. (Accounting & Finance)

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B.M.S.
B.Sc. (I.T.)
B.Sc. (Computer Science)
B. Com. (Accounting & Finance)
B.M.M.
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M. E. in Computer Engineering
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M. E. in Mechanical Engineering (Thermal)

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Mechanical Engineering

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B.E. in Electronics & Telecommunication Engineering
B.E. in Automobile Engineering
B.E. in Information Technology
B.E. in Computer Engineering
B.E. in Civil Engineering
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