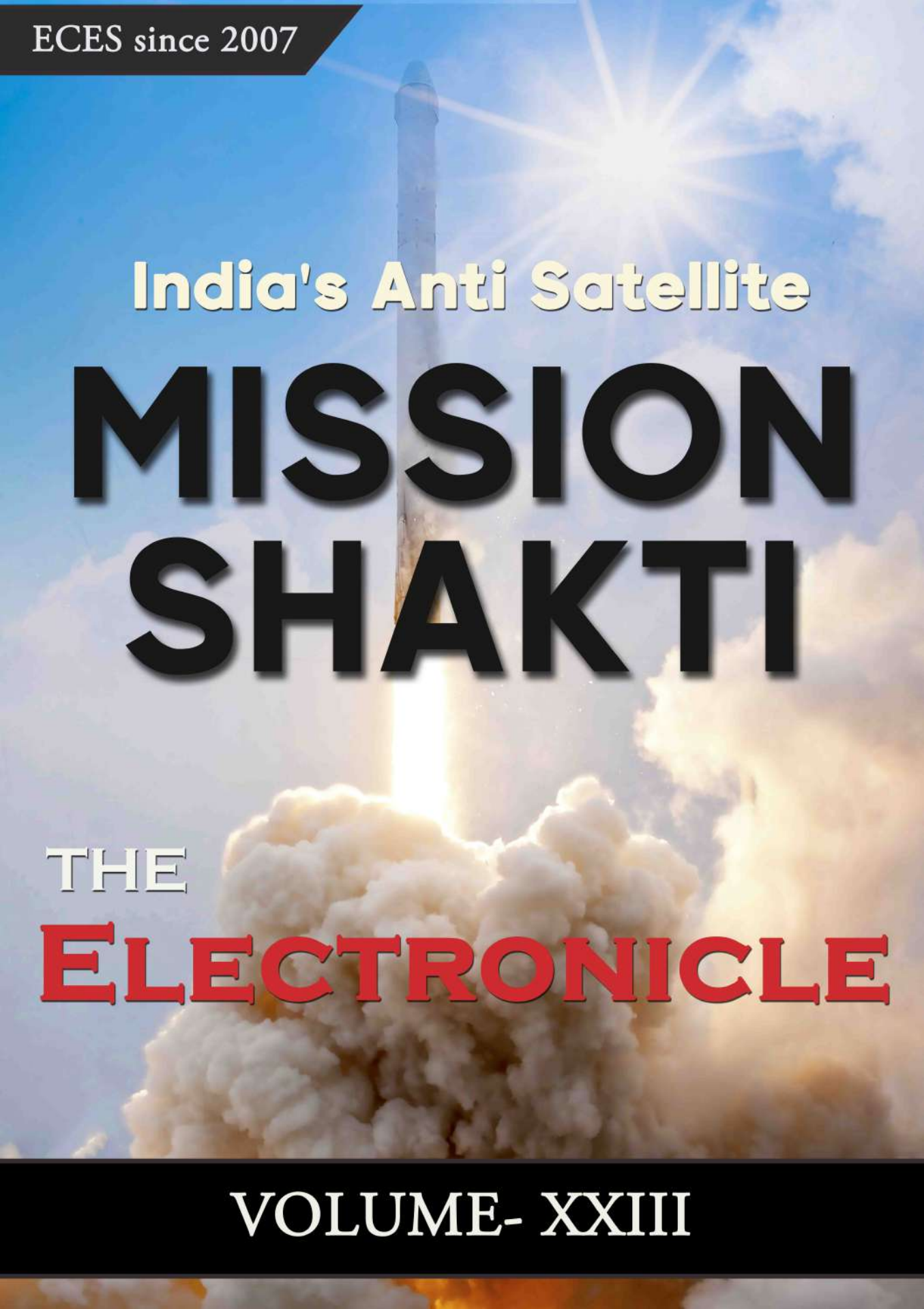
ECES since 2007



India's Anti Satellite

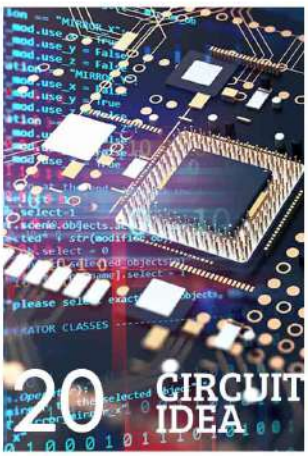
MISSION SHAKTI

THE

ELECTRONICLE

VOLUME- XXIII

CONTENT



INVENTION + TECH + GADGETS

INTERVIEW

DEPARTMENT & SOCIETY

COVER STORY

MISSION SHAKTI Accomplished

India's A-SAT

DRDO successfully conducted an Anti-Satellite (A-SAT) missile test 'Mission Shakti' from Dr. A.P.J. Abdul Kalam Island in Odisha on March 27, 2019. A DRDO developed Ballistic Missile Defence (BMD) Interceptor Missile successfully engaged a live Indian satellite orbiting in Low Earth Orbit (LEO) in a 'Hit to Kill' mode. The interceptor missile was a three-stage missile with two solid rocket boosters. Tracking data from range sensors confirmed that the mission met all its objectives.

Prithvi Defence Vehicle Mark II (PDV Mk-II)

A detailed presentation was made in 2016 and it took two years to develop the system. The major challenges in the mission were to achieve 'hit to kill' a live satellite with an accuracy less than 10 cm. All critical technologies for the test were developed indigenously. Around 150 scientists worked hard in the past six months and about 2,000 components were sourced from 50 countries.

"With the successful 'Hit to Kill' test, India becomes the fourth country to do so."

About the test

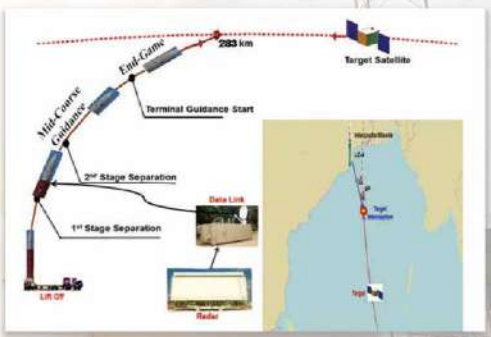
- The test demonstrated India's capability to defend its assets in outer space.
- The DRDO's Ballistic Missile Defence interceptor was used.
- LEO was used to ensure that there is no space debris.

The Missile

Prithvi Defence Vehicle Mark II (PDV Mk-II), a Ballistic Missile Defence interceptor, a 13 m tall, three stage missile with solid rocket motors constituted the first two stages, with the Kill Vehicle being the third stage. The missile has the capability to shoot down targets moving at 10 km per second in orbits as high as 1200 km.

Target Satellite

The target of the test was widely reported to have been Microsat-R, launched by ISRO for the test purpose. The relative velocity between the missile and Microsat-R was around 10 km per second.



ASAT Mission on March 27, 2019

DEPARTMENT

Vision of the Department

To prepare the students with state-of-art for emerging technologies, trends and applications in the field of **Electronics and Communication Engineering** to cater the global needs.

Mission of the Department

1. Educate a new generation of engineers to meet the challenges of the future by providing them with a firm foundation of both theory and practical of Electronics and Communication Engineering at undergraduate levels.

2. Create, develop and disseminate new knowledge by top quality applied research in Electronics and Communication Engineering by interacting with government agencies and private industry.

3. Promote a sense of leadership and service to the society.

Department News

The Department is facilitated with several laboratories like DSP lab, CAD lab/ VLSI lab, Antenna lab etc. Having the software like MATLAB, IE3D, VISUAL TCAD, MSIM(H-SPICE) etc. and hardware like Microprocessor(8085,8086,6800), Microcontroller(8057), A-D Converter, TEXAS Instrument etc.

- IOT lab, Embedded lab, AI lab and Drone lab are newly setup lab of Electronics and Communication Engineering Department sponsored by Ministry of Electronics and Information Technology (MeiTY), Government of India.
- ECE Department of MMMUT, Gorakhpur is working on project development of IOT and Drone based Agricultural Monitoring System with objective of skill development of socially deprived community with an estimated budget of ₹ 2.97 Crore.
- A one week short term course on "Recent Advances in Devices, Circuit and Communication (RADCC -2020)" is jointly organized by the Department of Electronics and Communication Engineering, MMMUT, Gorakhpur, UP and Department of Electronics Engineering, SVNIT, Surat, Gujrat.

Prof. Sri Niwas Singh

Hon'ble Vice Chancellor
Madan Mohan Malaviya University of Technology

INTERVISTA

1. Tell us about your journey being the VC of MMMUT.

I have already completed my 3 year tenure and now I am in my extension period. It was really a very wonderful experience being the Vice-Chancellor of the University. During this experience, I have known all my students, faculty and staff. It is really a great opportunity to work with the faculty and management for the betterment of the students.

2. At what position do you wish to see the University by the time you discharge from your duties?

I see our University under 100th position in the NIRF ranking in the upcoming years. As our lacking points were basically in the research area. But now since the last two years, we have got a tremendous rise in the research projects as well.

3. Industrial trips organized by an educational institution for students is a very good step in enhancing knowledge and exposure. What are your views regarding such trips for your University students?

Practical knowledge and fundamentals are really essential and hence industrial visits are very important. Students should not take industrial visits just as a fun tour but should enrich their practical knowledge through them. There should be atleast 2-3 industrial visits in every semester.

4. Since Covid-19 is going to persist for long, what will be the new norms for safety in the University?

I am very concerned about my students. Since we do not have enough faculty team to handle this much huge number of students all at a time, so we cannot allow the students to enter the University in this situation. Once the students are here, we will take care of proper sanitization, thermal screening, social distancing and will follow all the guidelines regarding Covid-19. For the same, we are going to make a proposal for funding of the required equipments. We have also planned the mess hours, as it is the place where it is most difficult to maintain social distancing.

5. Will the pattern of our curriculum be affected after the Covid-19 world?

We will not be highly affected as we are trying to provide the students with complete study material. Our faculty team has also started recording of the lectures. For mental health of the students, we have also discussed with the cultural management to organize some online events to make our students stress free. We are taking all the required measures.

6. What is your vision about the placements in the University for upcoming years?

It is really a very critical situation right now. Many companies which were supposed to arrive during the months of March and April couldn't visit due to the ongoing situation. But still, the placement scale has observed a rise this year.

PROF. SRI NIWAS SINGH

Hon'ble Vice Chancellor
Madan Mohan Malaviya University of Technology

7. Any insights on the MET examination for new admissions in the University?

We prepared for two more centres in Deoria and Kushinagar to avoid extra travelling of the candidates. Also, proper guidelines have been provided to all the centres for not allowing more than 400 students at a time, taking care of proper sanitization, thermal screening, social distancing and mask being mandatory for all the candidates.

8. What are the changes we will be able to see in upcoming days in the infrastructure of our University?

Lots of changes have been done in the infrastructure of our University. Extension of ITRC and library has almost been completed. We have improved all the academic areas. The departmental extensions are under progress. We have also put a huge amount for road development.

9. What is your vision about bringing companies for internships like other universities?

Once the students will be in the campus, we will invite the companies. Until then, we are going for the online process. Our TNP management is working rapidly over this.

10. Where does MMMUT stand as compared to other premier institutions of our country and what more can be done?

We are already at 183rd position in the NIRF ranking. We are no less than any NITs. We are provided with a limited amount of funding as compared to the NITs. We only run over students' fees and some funding provided by the UP Government to meet the laboratory requirements and testing facilities but still, our rate of growth in all terms are really very fast.

11. Any suggestions for the students regarding training and internships in the present situation of lockdown?

I want my students to be clear with their knowledge conceptually. Many placement officers seek for fundamentals and concepts in their candidates and nowadays students are lacking the same. They should be multi-dimensional with their personality. Try to do justice with your education and fulfill whatever is missing.

12. How would you encourage the students to fight this pandemic?

Stay at home, come out only if necessary while following all the guidlines. During this lockdown, students are having a problem in studying continuously. Students should not study all day continuously. They can go for music, plays or even spiritual shows to make their mind stress free.

13. How can our University graduates help or contribute to fight the Covid-19 situation?

Although we are having our NCC and NSS team, still I want my students to come forward and help the needy people in their locality. They should make people aware of the guidelines to fight against Corona.

Prof. Rajeev Kumar Chauhan

Head, ECE Department
Madan Mohan Malaviya University of Technology

INTERVISTA

1. How is your experience being the HoD of ECE Department and what challenges lay ahead in the current situation?

I always consider any position given to any faculty is just the responsibility given to that person to execute it in an efficient manner. The aim and objective of any teacher as well as the HoD remains the same, i.e. to work for the development of the students. Since I have experience of being the Dean (U.G.) earlier, so my perception for this position (HoD) might be totally different from others. As far as recent challenges are concerned, my immediate job is to conduct examinations of all passing out students (B. Tech/M. Tech/PhD) and provide all students with confidence that the department is working for their benefit. After that, the department will be going for accreditation of their UG program from the NBA.

2. What is the strength of our department?

In a number of ways, our department is best amongst all the departments of the University. If you compare with the ECE department of any other state engineering institutions, you will find it best. Some of the strength that I can mention here are : (a) Most of the faculty of ECE department focuses on quality research (b) Almost all faculty members of our department are dedicated workers (c) Well equipped sitting room facility for all faculty members (d) Number of government-sponsored projects allocated to ECE department (e) Average age of faculty shows that the department has good combination of young and senior faculty members.

3. Since you have many years of experience in the field of education, how do you see changes which have taken place in these years?

It is very difficult to summarize my 27 years' experience in a few sentences. The teaching-learning process has changed altogether in the last three decades in India. Role of technology has increased tremendously in the teaching-learning process. Every system of education has some positives and some negatives. In early 1990, students were more attached to the institute as well as faculty members, who taught them. Teachers were focused more on their classroom teaching and imparting knowledge to them in such a manner that they are capable enough to qualify any competitive exam. From 2000-2010, my observation was that the focus of faculty members shifted away from classroom teaching. Every faculty member tried to finish their course in a hurry. Students intake was increased and a jump in campus placement was also observed in this decade. It was observed that students' focus shifted from knowledge seeker to job seeker. The importance of teaching-learning atmosphere has gone down therefore. In the last decade, 2010-2020, because of the introduction of API system by the government, the focus of faculty shifted away from classroom teaching, and now the focus was more on developing their CV through research paper publication, organizing the workshop & conferences, obtaining government-sponsored projects etc. If one compares young faculty of this decade with young faculty of the 1990s, it will be seen that the CVs of current faculty members are far-far better. Now, the student's capacity has also increased to three times of what it was in the 1990s. It is therefore expected that the approach of the teaching-learning process will change as per new challenges and opportunities.

4. What are your expectations from the ECE Society?

Every society helps their associated members in a number of ways, similar is expected from ECE society also. The only requirement for developing any society is that its organizing members should work selflessly. I expect ECE society to work in such a manner that every student of ECE feels that they are part of a family. Active participation of students in

Prof. Rajeev Kumar Chauhan

Head, ECE Department
Madan Mohan Malaviya University of Technology

society activities will altogether change their persona, and it will certainly help them in their future buildup.

5. What benefits will ECE students get with the modification of labs?

For quality engineering education, it is necessary to upgrade the lab from time to time, and we have done it to some extent like updated our course syllabus accordingly in the last one year. Because of the purchase of new equipments in the last few years, a lot of new practicals have been introduced in every lab. Latest software for simulation of VLSI circuits and for the study of nano-devices has been purchased last year for students to take advantage.

6. Would you like to give any message to the students through our magazine?

There must be a zeal in every student for enhancing their knowledge. Students must utilize the facility they already have, to develop their persona. More focus should be given to holistic, empathetic and adaptive learning.

7. How is the department-alumnus relation of our department?

Maintaining any relationship is an ongoing process. Similar is the case of department-alumnus relationship. I can only say that, in this particular area, a lot of effort is needed.

8. What are the current research and development programs going on in our department?

At present, the department has lots of government-sponsored projects (of around 383 Lakhs). All these projects are in the latest area of research. Broadly we can say that it deals with IoT applications, VLSI design and nano-electronic devices, wireless communication, RF and microwave applications.

9. Any subject you would like to add/replace in the department's current syllabus?

I would like to introduce some subjects that deal with IoT applications and Artificial Intelligence in our curriculum in the near future.

10. Any suggestions for the students regarding training and internships in the present situation of lockdown?

It is always important for everyone to look for what we have. If students start looking on it, they will enhance their learning in an incomparable way. So, under lockdown conditions, the focus should be more on online teaching and learning processes. Try to read more and more research papers as per your field of interest, and then prepare an article briefly describing the advantage and disadvantage of what you have read. This article may serve the purpose of internship or training which is expected from students during summers. In future, it will help them a lot in doing their project work. Students can also take some certificates from NPTEL or SWAYAM, during this period.

11. How would you like to encourage your students to fight this pandemic?

Every pandemic teaches us the importance of life. No big effort is required from human being during a pandemic to uplift their society. If everyone gives their best, society will automatically be uplifted. I am sure that, new challenges and opportunities will emerge from this pandemic, and students of this era will be benefited from it.

12. How can our ECE graduates help in fighting Covid-19?

ECE graduates should look for possible solutions for every problem through creative ways.

Dr. Sudhanshu Verma

Faculty Advisor, ECE Department
Madan Mohan Malaviya University of Technology

1. What advice would you like to give to your students to stay focused and motivated during such an unprecedented time?

Dear Students, on the contrary, it's a very productive time for you to upgrade your skill-set to a new level, as engineering students always feels short of time during their regular semester studies due to a packed academic calendar. Wherever you lack, you can just start working on that, like report writing, interactive PPT development, learning new programming skills, enhancing engineering subject knowledge and many more.

2. Being a faculty of the ECE Department, what are your expectations from the students?

They should be noble, honest, diligent and intelligent global technocrats.

3. Would you like to share something about the projects or the research work going on in the department, with the students?

Research students of the Department are working on a varied range of fields such as photonic devices, nano-electronics, biomedical devices, IoT systems and got published their research works in the leading journals. Details will be shared soon.

4. How can an ECE graduate help in fighting Covid-19?

Or

What role can an ECE graduate play in these situations?

ECE graduates are a very specific community of the society, equipped with a unique set of engineering skills to combat any societal problem such as Covid-19. You can think of using all tips and techniques learnt during the course of electronics engineering to break the barriers of Covid-19.

5. Any suggestions for the students regarding training and internships in the present situation of lockdown?

Many online internship programs are being advertised over the internet such as Coursera, MIT OCW, Stanford E-learning, NPTEL in which you may participate.

6. Would you like to give any message to the students through our magazine?

Study hard to make it applicable for solving social problems and propose possible solutions in 'The Electronicle' magazine, so that other students may also be encouraged.

7. What changes would you like to implement for the betterment of the department?

Project Labs should be specifically developed for B. Tech ECE students so that they can develop the hobby of making utility of electronic projects.

8. Any suggestions for events which we should introduce keeping the current situation in mind?

Everything such as quizzes, trainings, lectures, events etc. should be shared through online and virtual platforms, so that this crucial time of a student is not wasted.

9. Please tell us about your experience and vision as the Faculty Advisor of ECES.

It has been a wonderful experience! It can never be better than interacting with students other than class and to observe their creative activities and team spirit to hold everyone together.

UNIVERSITY INNOCRATS 2020

Sarthak Srivastava
B. Tech Second Year
Computer Science and Engineering

#1 Artificial Intelligence

At a time when the pandemic has been so devastating for mankind, Codebugged Organization has a viable solution that is an Al (artificial intelligence) product to detect whether a person is wearing or not wearing a mask and whether the people are maintaining social distancing or not. Object detection is widely used for face detection, vehicle detection, pedestrian counting, web images, security systems and self-driving cars. In this project, we are using highly accurate object detection-algorithms and methods which are based on deep learning and require lots of mathematical frameworks. We can detect every little detail of object in image by the area object in a highlight rectangular boxes and identify every object and assign its tag to the object. In this project our object is mask and pedestrians. We are using object detection coupled with Euclidean distance to find the distance between two persons and then determine whether they are following social distancing or not.

#2 Web Development

Aditya Saha
B. Tech Second Year
Electronics and Communication Engineering

"Javascript is the duct tape of the Internet." It binds everything over the internet firmly together. The keen interest in javascript led to the development of this project known as DEVHUB; created to bring everyone interested in programming and development under one single roof where they can share their projects, seek help on their problems, share their development experiences and much more. The project is developed using the MERN stack. ReactJS serving the frontend architecture, NodeJS along with ExpressJS to serve the backend API requests of the users and the handling of large volume data at high speed by using the NoSQL database MongoDB. The project provides every user the ability to create their posts as well as interact with someone else's post as soon as they have set up an account for themselves. The project which took nearly a month to develop will certainly prove to beneficial to all the technical brains of the university to share their interests and receive the necessary guidance. It can give a boost to the future developers as well as the coders, where the experienced mind can guide the fresh minds, hereby which they can excel in the upcoming future.

Ekansh Saxena and Harsh Verma
B. Tech First Year
Information Technology

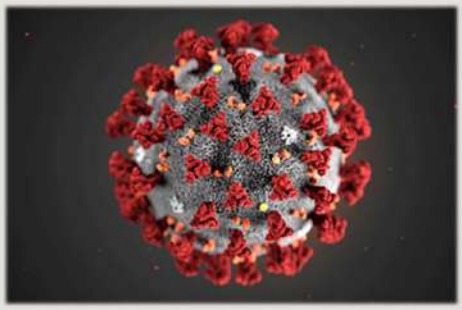
#3 App Development

Apart from many other achievements, the year 2019 added another feather in the cap of Malaviyans through the junior-most fellows of our college. With the joint effort of Harsh Verma (IT - B. Tech 1st year), Ekansh Saxena (IT - B. Tech 1st year) and the other teammates, the app 'i community' was forged, which is potentially a boon for innovators, investors, and nevertheless the ideas, hence explaining the significance of 'i' in the i community app. The app aims to convey a common platform for the seekers and the finders of new ideas, to let the users form a community within themselves. The app presents an 'Opportunities' section which opens the doors for the user in the world of innovation offered from the investors, by tracking user's activities and the interests. The app also featured basic means of conversation within the users by adding the chat functionality. Moreover, the app also has some strong security aspects which bars anyone to take screenshot within the app, making it a community not just for the innovators, but for everyone.

Covid & Technology

Introduction Deck

A cluster of pneumonia of unknown etiology was reported in Wuhan City, Hubei Province of China on 31 December 2019. On 7 January, Chinese authorities identified a new type of coronavirus as a cause of pneumonia outbreak, which was different from any other human coronaviruses discovered. The new strain was named as 2019-nCoV. Afterwards on 11 February 2020, this virus was named as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and disease was named as **COVID-19** by World Health Organisation (WHO). To date, other six human coronaviruses (HCoVs) have been identified. Coronaviruses such as SARS and MERS, are zoonotic, and can be transmitted from animals (civet cats and dromedary camels, respectively) to humans. Epidemiological evidence shows that 2019 nCoV can be transmitted from one individual to another. **COVID-19 outbreak was declared as pandemic by WHO on 11 March 2020.** According to WHO it was a controllable pandemic and urged all countries to take a comprehensive approach considering their circumstances and with containment measures as the central pillar. Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. Standard recommendations to prevent infection spread include regular hand washing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs. Avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing.



Coronavirus (Covid-19) Vaccine Status

1. Oxford University AstraZeneca coronavirus vaccine: AstraZeneca, which has already begun phase III human trials of its AZD1222 vaccine candidate, signed its 10th supply and manufacturing deal. Brazil announced on Saturday that it had signed a $127 million agreement to start producing locally the Oxford AstraZeneca vaccine.

2. Moderna coronavirus vaccine: US firm Moderna Inc, which has already started phase II trials for its vaccine candidate mRNA-1273, has partnered with drugmaker Catalent Inc. to produce 100 million doses starting in the third quarter of 2020.

3. Bharat Bio Tech's COVAXIN gets ready for clinical trials: Leading vaccine maker from the country, Hyderabad based Bharat Biotech won the approvals from Drug Controller General of India (DGCI) to start phase I and II clinical trials of its vaccine prototype, named 'COVAXIN' in the country. This is the first such company which has received a go-ahead to start the clinical trials.

4. Sanofi-GSK coronavirus vaccine: A French pharma giant Sanofi, has made a Covid-19 vaccine candidate in collaboration with GSK. They have multiple Covid-19 vaccine candidates in the works and hope to start a clinical trial with humans in the fourth quarter of this year.

Methods of Testing

1. Rapid Diagnostic Test (RDT): It uses a small, portable, positive or negative lateral flow assay that can be executed at point of care. RDTs may process blood samples, saliva samples, or nasal swab fluids. RDTs produce colored lines to indicate positive or negative results.

2. Anti-Body Tests: It is also known as serological test and is used to find out the presence of virus in a body. In this method of testing, blood samples are used to find antibodies. This process also detects the quantity of antibodies that are produced by the immune system.

3. Enzyme-linked immunosorbent assay (ELISA): These tests usually use blood, plasma, or serum samples. Samples are incubated with protein, allowing any antibodies to bind to it. The antibody-protein complex can then be detected with another wash of antibodies that produce a color readout.

4. Chemiluminescent immunoassay: They sample blood, plasma, or serum. Samples are mixed with a known viral protein, buffer reagents and specific, enzyme-labeled antibodies. The resulting chemical reaction produces light.

5. Isothermal amplification assays: These tests typically detect DNA using fluorescent tags, which are read out with specialized machines.

Developments Deck

IIT-Kanpur in the Race to Develop Two Covid-19 Vaccines

A team of researchers at the Indian Institute of Technology --Kanpur (IITK), led by biophysicist Dibyendu Kumar Das, is joining the race to develop a vaccine against SARS-CoV2 — the virus that causes Covid-19. For almost all Covid-19 vaccine projects, the target is the spike-protein (or S-protein), which helps the virus latch on to lung cells. If the body has antibodies against the S-protein, which it can acquire through vaccination, the virus can be neutralised when it enters the body. Through the sub-unit vaccine, the IITK scientists are trying to target this segment of the protein. He said the S protein has two parts — S1 and S2. The Kanpur scientists are focusing on S2 because it seldom undergoes mutation. Besides, this could be a broad-based vaccine as S2 is found in most members of the coronavirus family, including those that caused the SARS and MERS epidemics.

IIT-Roorkee, AIIMS-Rishikesh Develop Low Cost Portable Ventilators

The Indian Institute of Technology (IIT)- Roorkee, in collaboration with All India Institute of Medical Science (AIIMS), Rishikesh, has developed a low-cost ventilator . The ventilator, Prana Vayu, will cost 25,000 per unit, much less than the products available in the market. This low-cost ventilator will be highly useful for covid-19 patients. It is safe and reliable as it is equipped with real-time spirometry and alarms. It can automatically limit high pressure with an alarm system. In case of a failure, the circuit opens to the atmosphere which prevents choking. Some additional features are remote monitoring by health professionals, touch screen control of all operating parameters, moister, and temperature control for inhaled air.

COVID-19 Screening on Chest X-ray Images Using Deep Learning Based Anomaly Detection

Clinical studies have shown that most COVID -19 patients suffer from the lung infection. Although chest CT has been shown to be an effective imaging technique for lung-related disease diagnosis, chest X ray is more widely available due to its faster imaging time and considerably lower cost than CT. Deep learning, one of the most successful AI techniques, is an effective means to assist radiologists to analyze the vast amount of chest X-ray images, which can be critical for efficient and reliable COVID-19 screening. The aim is to develop a new deep anomaly detection model for fast, reliable screening. 100 chest X-ray images of 70 patients confirmed with COVID-19 from the Github repository. The experimental results show that the model developed can reliably detect 96.00% COVID-19 cases and 70.65% non-COVID-19 cases.

DRDO Innovates Automatic Sanitiser

The DRDO's Centre for Fire Explosive & Environment Safety (CFEES), Delhi, has developed an automatic mist based sanitiser dispensing unit, which sprays alcohol based hand sanitiser, for use at the entry of buildings and office complexes. The unit was manufactured with the help of Riot Labz Private Limited, Noida, and one unit has been installed at the DRDO Bhawan in Delhi. The sanitiser operates without contact and is activated through an ultrasonic sensor. A single fluid nozzle is used to generate aerated mist to dispense the hand rub sanitiser.

GIZMOS

Lumen Metabolism Tracing Device

Connecting to an app, this clever device takes all the guesswork out of your nutrition. Lum--en works by analyzing your breath. With a sin--gle breath, Lumen can tell if you're burning carbs or fat. In addition, the app promotes you to continue your progr--ess. It'll give you tips such as doing a bootca--mp workout, adding some extra sleep into your day and more.

Ember 14 oz Temperature Control

This mug is godsend to people who can't function without morning coffee. All it does is use internal heating technology to keep up your caffeinated beverage hot-for an hour. You can nurse coffee without repeated trips to microwave, or steep tea to the ideal temperature (all controlled via a blue--tooth connected app). You can control it with your smartphone or pair it with the Ember App to set your temperature, customize presets, rec--ieve notifications and more.

Waverly Ambassador Translator

For those who want to travel regardless of language boundaries—or easily converse with people who sp--eak different languages in their own neighbuorhood —Waverly Labs invented an audio device that trans--lates on the spot. There are many situations in which to use it, but per--haps the most useful setup is to attach one to your ear, hand the other to someone who doesn't speak the same language to strap onto their own head, and talk away. The correct translation will play in both of your ears. The technology is still in the Indiegogo stage, but it might be worth it to you to get your hands on an early version.

OWIS: AI powered self driving Suitcase

Trying to navigate through busy airports while wheeling around luggage can be tr--icky at times, but self-driving robotics company ForwardX is looking to change that with its new luggage, Ovis.Equipped computer vision technology, Ovis is the world's first vision-powered carry-on that can not only follow you from behind, but can also move autonomously by your side, company representatives claim. The carbon fiber suitcase is also equipped with sensors that allow it to follow you at a speed of almost 7 miles per hour without running into anything, while route projection technology helps it recognize its path.

Neonode AirBar 13.3-inch Touch--screen Enabler for Laptops

The sleek, lightweight device emits an inv--isible light field over a laptop screen that senses your finger touch. Airbar will allow you to experience the best of windows 10 by simply attaching it to the bottom of your laptop bezel with the magnets provided, and plugging it into the usb port. You will be able to tap, pinch, zoom, sweep and rotate instantly.

Life Clock Disaster Preparation Clock Kit

This all-in-one set com--es with everything you need in case of an emer--gency. Life Clock inclu--des five basic relief go--ods, a disaster and saf--ety manual, and an In-Case of Emergency card. The five goods include an emergency chemical light, an emergency res--cue whistle, an emerge--ncy blanket, an emerge--ncy compressed banda--ge, and an SOS flag.

GIZMOS

Smart potato

Nicolas Baldeck had a vision: to create the first artificially intelligent, wireless, brainwave-enabled smart potato. It's self-powered by the potato; it picks up the potato brainwaves. And then, by using artificial intelligence, it turns potato language into Bluetooth. So, potato can talk to your smart phone. You can learn its health and mood and communicate with the potato buried in the ground.

Urgonight Headband

The Urgonight Headband takes an EEG of your brain, then uses this information to show you imagery on your smartphone to help retrain your brain to sleep better. You just need to do this for 20 minutes a day, three times a week for about three months. According to their research, participants were on average falling asleep 40 percent faster, reducing the number of times they woke up during the night by more than half after completing a training cycle.

Inupathy dog harness

The Inupathy harness from Langualess promises to let your dog tell you how he's feeling. The harness can measure your pet's heart rate and uses that information to let you know if your dog is relaxed, excited, happy, interested or stressed out by changing colors. An associated app lets you track your pet's mood. When you go out for a walk, watch TV or take a nap together, it let's you take your time to read messages from your dog and find many moments when 'happy' signs shine on Inupathy.

Heatworks Duo Carafe

Some of us like our cup of tea in the morning, but it's a process. You have to wait for the water to heat, no matter if you do it the old fashioned way in a kettle or heat it in the microwave. That's where the Duo Carafe comes in: Heatworks has developed a carafe that allows you to heat the water instantaneously as you pour it in. Not only does it heat the water to within a degree of your desired temperature, but this carafe also filters the water to make it taste the best it can.

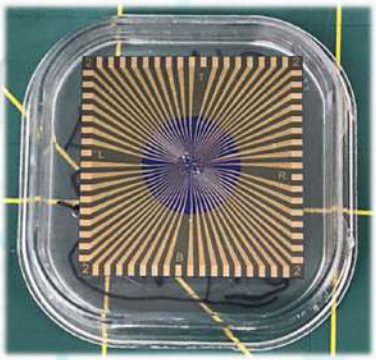
Bose Frames Audio Sunglasses

Bose debuted an audio gadget this year that combined two things you love dearly into one: cool sunglasses and wireless earbuds. If you throw a pair of these Bose Frames on during a sunny day spent outside, the frames themselves will play music, streamed from your phone via a Bluetooth connection, exclusively for your ears. We promise, no one else will be able to hear your music playing. The speakers are that good.

Hydraloop

This device is big like a refrigerator which recycles and cleans about 85 percent of the water you use in your home, while its app keeps you updated on the recycling process and your total water usage. The upfront cost is significant, but your bills will probably go down and your house will be a model of efficient living.

A Sensor for Flu and Covid at the Same Time; can Tell Difference



Covid-19 shares number of symptoms with the common flu. Researchers are now developing a new sensor that can tell the difference between the two illnesses and test for both simultaneously. A dual test improves on current options in several ways. It is more convenient for patients who would not have to get multiple tests done. It also saves time for medical personnel when resources are stretched. A dual test would also reduce the usage of nasal swabs – since one is needed for each Covid-19 or influenza test – amid a shortage of equipment. The sensor is being developed at the Cockrell School of Engineering, University of Texas at Austin. Deji Akinwande, a professor in the department of electrical and computer engineering, recently received a grant from the US National Science Foundation for the work. They have developed a prototype device and are beginning the experimental process. The sensor is the size of a micro USB drive and is infused with antibodies of both Covid-19 and influenza. One part of the device is sensitive only to the flu, while another part will react only to the corona-virus. The team has not determined yet how the test would be conducted, but it could be done via saliva samples. The researchers are planning to use inactive samples of Covid-19 and influenza for initial testing of the device, and they will measure how well the sensor connects with the corona-virus's spike proteins, which help it enter human cells by binding with them.

Smart Sun Visor for the Self-Driving Vehicles

Cars are getting smarter every day. Now, they are so smart that they can even beat humans in road safety tests. A recent patent discloses a smart sun visor that can potentially transform the currently outdated sun visor into a multi-functional super-duper sun visor of the 21st century. A touch screen device is embedded in the sun visor and has the ability to display different camera views such as 'See me' or Selfie view, 'Polarized Front View', and 'Rear Passengers' view.

A 'See me' or Selfie view would allow the users to see themselves on a digital screen on the smart sun visor and would provide the users the ability to take their photos and/or videos and also share those with others on social networking sites.

The 'Rear Passengers' view would allow the users to view the passengers sitting in the rear seat of the vehicle on the digital screen of the smart sun visor without having to turn back again and again.

A 'Polarized front' view would show the view which is normally blocked by the deployed sun visor, allowing the user to finally view the traffic lights, and road signs without the distraction of glare.

Portable Electronics: A Stretchable and Flexible Bio-Fuel Cell that Runs on Sweat

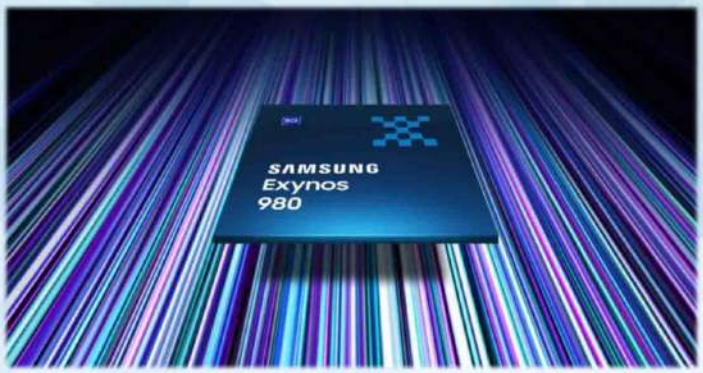
A unique new flexible and stretchable device, worn against the skin and capable of producing electrical energy by transforming the compounds present in sweat, was recently developed and patented by CNRS researchers from University Grenoble Alpes and the University of San Diego (USA). This cell is already capable of continuously lighting an LED, opening new avenues for the development of wearable electronics powered by autonomous and environmental friendly bio-devices. The potential uses for wearable electronic devices continue to increase, especially for medical and athletic monitoring. Such devices require the development of a reliable and efficient energy source that can easily be integrated into the human body. The bio-fuel cell, which follows deformations in the skin, produces electrical energy through the reduction of oxygen and the oxidation of the lactate present in perspiration. Once applied to the arm, it uses a voltage booster to continuously power an LED. It is relatively simple and inexpensive to produce, with the primary cost being the production of the enzymes that transform the compounds found in sweat. The researchers are now seeking to amplify the voltage provided by the bio-fuel cell in order to power larger portable devices.

Pacifier Biosensor Could Help Monitor New Born Health

Wearable biosensors that non-invasively monitor health and fitness are growing in popularity among adults. But adapting this technology for use with babies is difficult because the devices are often bulky or have rigid surfaces that could harm infants' delicate skin. Now researchers say they have developed a pacifier-based biosensor that tracks real-time glucose levels in saliva. It could ultimately help diagnose and treat diabetes in the smallest of patients. Scientists have previously developed wearable biosensors that are incorporated into clothing or stuck to the skin. So far, all of the wearable devices made for babies measure only physical characteristics like heart or respiration rate and not biomarkers, such as glucose. Joseph Wang, Alberto Escarpa and colleagues wanted to develop a baby-friendly biosensor in the form of a pacifier that could collect saliva and analyse it for biomarkers. As a proof of concept, the researchers made a pacifier with a nipple that contained a narrow channel. It was designed so that when an infant sucked on the pacifier, small amounts of saliva would be transferred through the channel to a detection chamber. There, an enzyme attached to an electrode strip would convert glucose in the fluid to a weak electrical signal, which could be detected wirelessly by a cell phone app. The strength of the current is correlated with the amount of glucose in saliva samples. Using the pacifier, the team detected changes in glucose concentrations in the patients' saliva before and after a meal.

INNOVATION

'5G' Wireless Transceiver



A new wireless transceiver has been invented by electrical engineers at the University of California, Irvine that boosts radio frequencies into 100 gigahertz territory, quadruple the speed of the up coming 5G, or fifth generation, wireless communications standard labelled an "end-to-end transmitter-receiver" by its creators in UCI's Nanoscale Communication Integrated Circuits Labs, the 4.4 millimetre square silicon chip is capable of processing digital signals significantly faster and more energy efficiently because of its unique digital-analog architecture. The team's innovation is outlined in a paper published recently in the IEEE Journal of Solid-State Circuits. "We call our chip 'beyond 5G' because the combined speed and data rate that we can achieve is two orders of magnitude higher than the capability of the new wireless standard," said senior author Payam Heydari, NCIC Labs director and UCI professor of electrical engineering & computer science. "In addition, operating in a higher frequency means that you and I and everyone else can be given a bigger chunk of the bandwidth offered by carriers." He said that academic researchers and communications circuit engineers have long wanted to know if wireless systems are capable of the high performance and speeds of fibre-optic networks. "If such a possibility could come to fruition, it would transform the telecommunications industry, because wireless infrastructure brings about many advantages over wired systems," Heydari said. His group's answer is in the form of a new transceiver that leapfrogs over the 5G wireless standard designated to operate within the range of 28 to 38 gigahertz into the 6G standard, which is expected to work at 100 gigahertz and above.

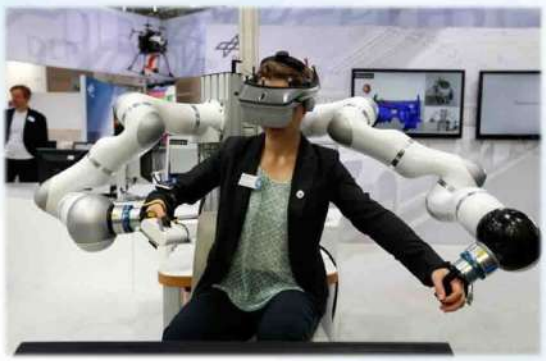
The Federal Communications Commission recently opened up new frequency bands above 100 gigahertz. The new transceiver is the first to provide end-to-end capabilities in this part of the spectrum transmitters and receivers that can handle. Having such high-frequency data communications is going to be vital in ushering in a new wireless era dominated by the "internet of things," autonomous vehicles, and vastly expanded broadband for streaming of high definition video content and more. While this digital dream has driven technology developers for decades, stumbling blocks have begun to appear on the road to progress. According to Heydari, changing frequencies of signals through modulation and demodulation in transceivers has traditionally been done via digital processing, but integrated circuit engineers have in recent years begun to see the physical limitations of this method.

INNOVATION

"Moore's law says we should be able to increase the speed of transistors such as those you would find in transmitters and receivers by decreasing their size, but that's not the case anymore," he said. "You cannot break electrons in two, so we have approached the levels that are governed by the physics of semiconductor devices." To get around this problem, NCIC Labs researchers utilized a chip architecture that significantly relaxes digital processing requirements by modulating the digital bits in the analog and radio frequency domains. Heydari said that in addition to enabling the transmission of signals in the range of 100 gigahertz, the transceiver's unique layout allows it to consume considerably less energy than current systems at a reduced overall cost, paving the way for widespread adoption in the consumer electronics market.

New Haptic Arm places Robotics within easy reach

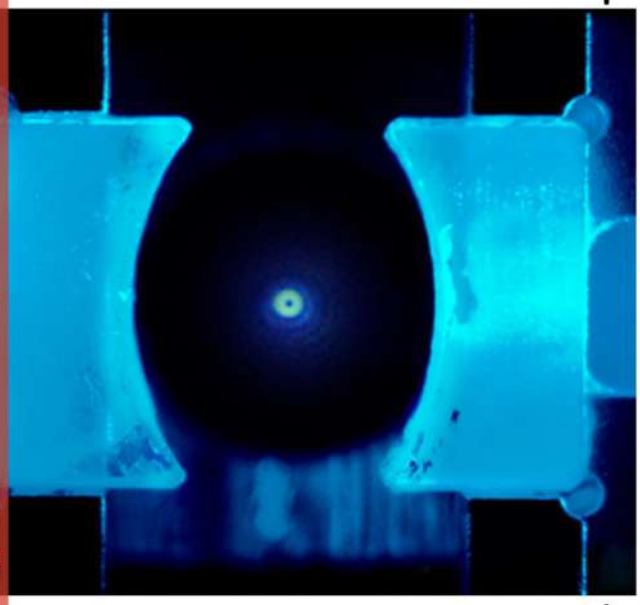
Imagine being able to build and use a robotic device without the need for expensive, specialist kit or skills. That is the vision that researchers from the University of Bristol have turned into reality, creating a light weight, affordable and simple solution for everyday users. While multiple robotics arm devices already exist, most are heavy, expensive and outside the reach of individuals who lack the expertise to use them. Mantis, designed by experts in human computer interaction from Bristol's team of engineers, is the first system of its kind that enables light, affordable and accessible haptic force feedback.



Human beings have five senses, but electronic devices communicate with us using predominantly just two: sight and hearing. Haptic feedback (often shortened to just haptics) changes this by simulating the sense of touch. Not only can you touch a computer or other device, but the computer can touch you back. A force feedback is a particular kind that can provide force. Theoretically, the Mantis could be built and used by anyone upwards from a secondary school student. Not only that, researchers say the Mantis can be built for 20 times less the expense of the market equivalent because it uses components including brushless motors, that cost significantly less than high fidelity equivalents that are often confined to research labs. Humans already have a great sense of touch. Mantis expands on this innate ability by enabling people to touch and feel 3D objects, adding more depth to the VR experience.

Imagine a user playing a game in Virtual Reality with Mantis attached to their fingers. They could then touch and feel virtual objects, thus immersing themselves both visually and physically in an alternative dimension. Project Mantis is also supported by a new a spin out venture, Senmag Robotics, which researchers hope will enable them to progress their design to market, starting with the production and testing of the first kits ready for release by the end of the year.

SUPER COOLED NANO PARTICLE



Scientists have successfully cooled a nanoparticle to the quantum limits.

A tiny nanoparticle has been chilled to the max. Physicists cooled a nanoparticle to the lowest temperature allowed by quantum mechanics. The particle's motion reached what's known as the ground state, or lowest possible energy level. In a typical material, the amount that its atoms jostle around indicates its temperature. But in the case of the nanoparticle, scientists can define an effective temperature based on the motion of the entire nanoparticle, which is made up of about 100 million atoms. That temperature reached twelve-millionths of a kelvin. Levitating it with a laser inside of a specially designed cavity to reduce the nanoparticle's motion to the ground state, a minimum level set by the Heisenberg uncertainty principle, which states that there's a limit to how well you can simultaneously know the position and momentum of an object. While quantum mechanics is unmistakable in tiny atoms and electrons, its effects are harder to observe on larger scales. To better understand the theory, physicists have previously isolated its effects in other solid objects, such as vibrating membranes or beams. But nanoparticles have the advantage that they can be levitated and precisely controlled with lasers. Eventually, aim to use cooled nanoparticles to study how gravity behaves for quantum objects, a poorly understood realm of physics.

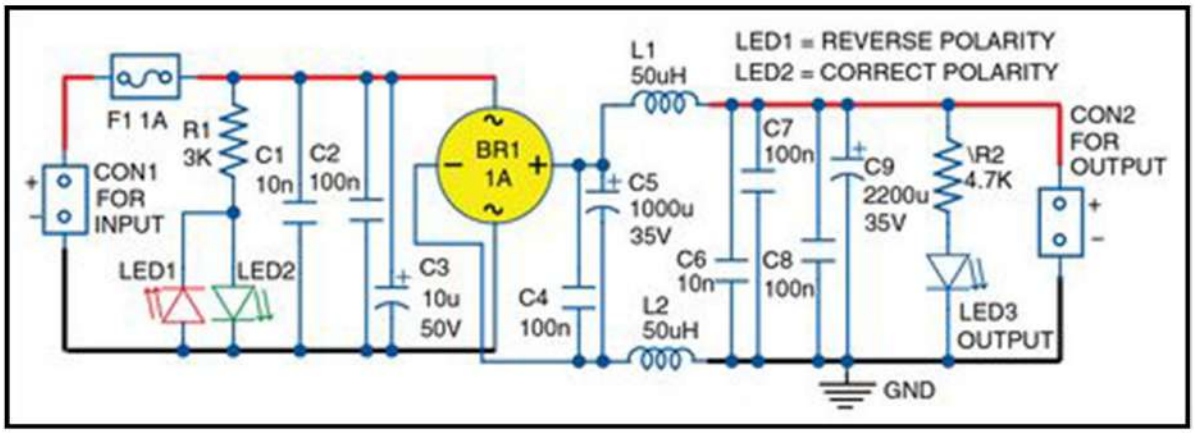
QUANTUM ENTANGLEMENT

Quantum Entanglement Offers Unprecedented Precision for GPS, Wi-Fi and More.

Your phone's GPS, the Wi-Fi in your house and communications on aircraft are all powered by radio-frequency, or RF, waves, which carry information from a transmitter at one point to a sensor at another. This quantum sensing paradigm could create opportunities to improve GPS systems, astronomy laboratories and biomedical imaging capabilities. Traditional antenna sensors transform information from RF signals to an electrical current made up of moving electrons. However, optical sensing, which uses photons, or units of light, to carry information, is much more efficient. Not only can photons hold more data than electrons, giving the signal larger bandwidth, but photonics-based sensing can transmit that signal much farther than electronics-based sensing, and with less interference. After converting information to the optical domain, the researchers applied a technique called quantum metrology. Usually, a sensor's precision is limited by something called the standard quantum limit. Entanglement allows sensors to more precisely extract features from the parameters being sensed, allowing for better performance in machine learning tasks such as sensor data classification and principal component analysis.

CIRCUIT IDEA

Build A Filter and Polarity Guard for AC/DC Adapters



Components List

Semiconductors:
F1 - 1A fuse
BR1 - 1A bridge rectifier
LED1 - LED3 - 5mm LED

Resistors (all 0.25W, ±5% carbon):
R1 - 3Kohm
R2 - 4.7Kohm

Capacitors:
C1, C6 - 10nF ceramic disk
C2, C4, C7, C8 - 100nF ceramic disk
C3 - 10uF, 50V electrolytic
C5 - 1000uF, 35V electrolytic
C9 - 2200uF, 35V electrolytic

Miscellaneous:
CON1, CON2 - 2-pin terminal connector for input and output
L1, L2 - 50uH inductor

Construction

Assemble the circuit on a veroboard. Input fuse F1 is selected according to the wall adapter output rating. Connect output of the adapter to CON1, then connect output voltage from CON2 to load or target device. Reduce ripples and noise and improve transient response of the adapter.

Working

It is built around a bridge rectifier, two inductors L1 and L2, three LEDs and a few capacitors and resistors.
Output capacitor C9 provides good filtration at low frequency and high output peak current
$I = C \times (db/dt)$
I = instantaneous current through the capacitor in Ampere
db = instantaneous rate of voltage change across the capacitor
L1 & L2 inductors are taken according to required current and suppression of noise ripples.
All capacitors should be rated for at least 35V because most are designed for 19V and above.

Pawan Pundir

Founder, ECES

1. How would you describe your journey as an alumnus of MMMUT?

The college has given me 2 things important in my life. One is my friends with whom I share a very strong bond. They are for life and I cherish all of them. Second is the immense alumni network. Be it any of the big companies of the world, Amazon, Google, everywhere malaviyans are there and that too holding a high position. This gives tremendous confidence and inspiration to us. Malaviyans meet and greet each other very frequently, be it in any part of the world. Overall as a malaviyan, my journey has been fantastic.

2. What was your motive behind formation of ECES? Is it fulfilled?

When I was in 3rd year, our curriculum was similar to that of UPTU and there has always been a gap between what is taught to us and what is the requirement of the industry. I came to know that VHDL was one of the hot topics at that time in the industry. But none of our subjects taught us about VHDL. So, in order to learn it, I went on to training in Lucknow and learned VLSI and VHDL and it gave me a lot of confidence. Later, I went to learn embedded systems in Roorkee CETPA. Completing the two courses, it cost me around 30000. In order to make other students also learn this skill, who cannot afford this much amount, I started teaching them. But if this trend of transferring knowledge to others, was to be continued, it had to be made a formal body. And that's why I decided to give it a form of society and with the help of our department, provided it official status and hence the society emerged in this way with the vision of transmission of knowledge.

3. Where do you see ECE branch in the coming years? Or what is the future of ECE branch?

The future of ECE is definitely bright. But there are some things which need to be focused upon. When we look at the electronics industry, we can see that there are very few startups. Out of 100, 99 startups are in the field of software only. Till now, China use to have full control over the electronics industry globally due to its affordable products. But now many companies are shifting their production sites from China to India. It's a great opportunity for everyone. What needed is just the right set of skills and upgrade them from time to time that could meet the demand of these industries. And I am very much sure ECE is going to be the game-changer for India.

4. What is the scope of job in core ECE sector in India?

There are big flares in electronics in India like ST Microelectronics, Qualcomm, Intel etc. So, opportunities are there. But most of the startups are in software only. So overall it can be said that opportunities in the field of ECE are quite less than software but to secure a job one has to be highly skilled and competitive. It's all the game of demand and supply. If there is a high supply of electronics engineers but demand is less then to secure the job in the electronics industry, one has to work harder.

5. ECE is considered to be the combination of CSE as well as EE, giving knowledge about both the branches. Is it beneficial for ECE student or is it actually degrading the branch's identity?

I don't agree with this because when you look at the syllabus of CSE and ECE they are completely different from each other. To some extent, ECE has similarities with EE but not with CSE. Data structures and Algorithms are the heart of CSE, while ECE neither has DS and Algorithm nor it has operating system or compiler design in the course, hence we cannot compare them. Although in ECE, it allows you to explore your programming skills. When you have to make any project in Electronics you end up doing some programming. But that doesn't mean that the branch's identity is degraded. Each branch is unique and different.

6. Which skills, apart from programming should students develop in the university that could help them in their career?

The first skill that students must learn is to be "fearless". In my career, I faced many failures and rejection. I learned from it, I improvised it but still failed. After 2-3 failures, success is guaranteed. So, the important skill that people should inculcate is to be fearless. People should keep trying and trying. We should accept our failure gracefully. Secondly, your goal should be clear. Today I see that people are not confident about themselves. They start doing everything and hence cannot focus on anything. So, focus on one thing at a time and keep going.

7. Any suggestions for the betterment of ECES?

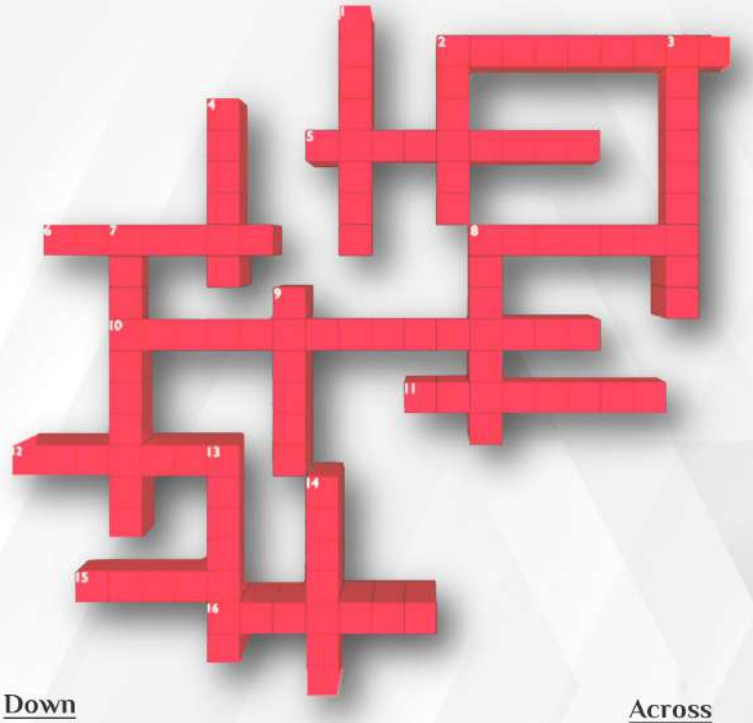
My only suggestion to ECES is that don't compete with any other society. We should be primarily focusing on transmitting knowledge. Our main concern should be to "learn skills and impart skills". We will get success when people get benefitted in their career through ECES, then only we would make a real impact.

8. Any message to the readers of this magazine?

My message to the readers is to grow your network to share your knowledge. Alone, you cannot grow beyond a certain limit. When something looks very big to you, a big task like data structure is so wide, you divide it into small parts and then focus one by one on each part. In that way, you can learn something big. And once you learn some new skills, try to impart that knowledge to more and more people.

PERSONAGE

FUNPAGE



Down

1. A voltmeter is used in _____ with the circuit.
2. A device that opens or completes an electrical path.
3. A material that opposes the movement of free electrons.
4. One coulomb passing a point in one second.
7. A resistive component that is designed to be temperature sensitive.
8. A unit of charge that contains 6.25×10^{18} electrons.
9. An atom's atomic number is determined by its number of _____ .
13. A substance that is found only in its pure form.
14. It is used to measure current.

Across

2. A diagram that shows the electrical connections of the electronic components.
5. Current is considered to be the movement of ___ .
6. A voltage source that converts chemical energy to electrical energy.
8. A flow of electric charge.
10. A characteristic of a secondary cell.
11. A material that is composed of a mixture of elements.
12. The term used to designate electrical pressure.
15. A short circuit will have a _____ current flow.
16. The part of an atom that has no electric charge.

1. PARALLEL	5. ELECTRONS	9. PROTON	13. ELEMENT
2. SWITCH	6. BATTERY	10. RECHARGEABILITY	14. AMMETER
3. INSULATOR	7. THERMISTOR	11. COMPOUND	15. LARGE
4. AMPERE	8. COULOMB	12. VOLTAGE	16. NEUTRON

1) The Firefox logo isn't a fox. Surprisingly, the cute funny creature in the logo is actually a red panda!

2) Computer Security Day is celebrated on November 30th.

3) In 2010, the US Air Force used 1,760 PlayStation 3 consoles to build a supercomputer for the Department of Defense because it was more cost efficient and "green."

4) The first webpage is still running at info.cern.ch .

DID YOU KNOW?

SOCIETY '20

Electronics and Communication Engineering Society was founded by our respected Alumnus Pawan Pundir with the vision of "**Passing of Knowledge from Seniors to Juniors**". Society organized Verilog HDL classes for second year students followed by a paper presentation **Inception '20** for first year students. Moving ahead society organized a three day event **Explora '20** which was a great success with huge participation from the students.

Winners of Inception '20

Soumya Gupta	CSE (1st year)
Varsha Gupta	CSE (1st year)

Events at a Glance

Verilog HDL Classes	Aug 20 to Sept 12
Verilog HDL Test	Nov 10
Opening Ceremony	Jan 8
Inception'20	Jan 8 & Jan 9
Explora'20	Jan 24 to Jan 26

Faculty of Verilog HDL Classes

Nancy Singh
ECE (3rd year)

Ashish Rathore
ECE (3rd year)

Chandan Anand
ECE (3rd year)

Winners of Explora '20

EVENTS	WINNERS	BRANCH
Quantico	Chetan Mittal	ECE (3rd year)
	Ashutosh Yadav	ME (3rd year)
	Shivasheesh Chaturvedi	CSE (3rd year)
Qrious	Anupam Singh	EE (1st year)
	Faheem Ahmed	EE (1st year)
C-Quiz	Pranjal Gaur	CSE (1st year)
	Prakhar Saxena	CSE (1st year)
Electromaniac	Prateek Srivastava	ECE (1st year)
	Shashwat Patel	ECE (1st year)
Spiel-Minati	Prawar Prakash Pandey	ECE (1st year)
Pictales	Mayank Tripathi	CE (1st year)
	Utkarsh Singh	CE (1st year)
	Vriddhi Kapoor	CE (1st year)
	Suraj Yadav	EE (1st year)
	Pranjal Srivastava	EE (1st year)
Roll the Reel	Satvik Goel	ECE (1st year)
	Rahul Soni	ECE (1st year)
	Ritam Tripathi	ECE (1st year)
	Simran Chaurasiya	ECE (1st year)
	Sonal Gond	ECE (1st year)
Literario	Divya Srivastava (Hindi)	CHE (1st year)
	Aditi Singh Morya (English)	ECE (2nd year)


Picture
Gallery

गगन की ऊँचाई

आकाश देख उसको छूने की है मेरी अभिलाषा
उड़ पाऊंगा मैं भी इतना ऊँचा
देता मैं खुद को दिलासा।
कैसे स्वच्छंद उड़ पंछी ये ऊँचाई छूते है
क्या आकाश को ही देख इनके पर मज़बूत होते हैं
गगन की गहराई नापना है मुझे
पंछियों के बादलों के ऊपर उड़ जाने की
इस फितरत को पहचानना है मुझे।
इसी नभ में समाए हैं सूरज चाँद और तारे
बादल दिखाते हैं करतब और रूप न्यारे न्यारे।
निशा में चाँदनी और भोर के सूरज का उजाला
अपनी सुंदर आभा फैलाकर बनाता इन फूलों को निराला
शायद आसमाँ के राज का पता लगाती है ये चिड़ियाँ
छूने को उसकी ऊंचाई उठ जाती हैं ऊपर बिन बेड़ियाँ।
इस नीले गगन के छोर को मुझे भी छूना है
अपने पंखों को उड़ान देकर स्वच्छंद होकर उड़ना है।
अपने पंखों को उड़ान देकर स्वच्छंद होकर उड़ना है।

-अंकुर चिरानिया

Publication '20

- Vijay Shanker Chaudhary, Dharmendra Kumar, Rajan Mishra, Sneha Sharma Twin core photonic crystal fiber for temperature sensing Materials Today: Proceedings SCI mago - 2020 https://doi.org/10.1016/j.matpr.2020.04.197
- Narendra Yadava and R. K. Chauhan Evaluation of the RF performance of the β-Ga2O3 negative-capacitance field-effect J. Comput. Electron. SCI -- 2020 – transistor
- Gagandeep Bharti, Anand Sharma, Dharmendra Kumar, A K Gautam Two-port ring-shaped dielectric resonator-based diversity radiator with dual-bandand dual-polarized features Microwave and Optical Technology Letters SCI 62(2) Feb,2020 581-588
- V.K Mishra, S. Pandey, N.A. Srivastava, and R.K. Chauhan A Compact Analytical Drain Current Model of Fully Depleted SOI MOSFETs with Lightly Doped N- underneath the N+ Source Region Silicon (2020). SCI DOI https://doi.org/10.1007/s12633-020-00525-y
- Narendra Yadava and R. K. Chauhan RF Performance Investigation of NiO Pocket on Ga2O3 based Hetero-MOSFET Semiconductors, Springer SCI Acc
- Singh S, Verma S. Printed compact asymmetric dual L-strip fed split-ring shaped EBG-based textile antenna for WBAN applications. Microw Opt Technol Lett. 2020;1–8. https://doi.org/10.1002/mop.32512
- Shivam Srivastava, Pooja Lohia and D.K.Dwivedi Impact of holes transport layer on performance of perovskite solar cell AIP Conference Proceedings 2220 SCI Mago Journal Volume 140025-1-5 May 2020 pp. 1-5
- A. K. Dwivedi, Brijesh Mishra, P. N. Tripathi, A. K. Singh and V. Singh Design of a Compact CPW-Fed Monopole antenna with Asymmetric Hexagonal Slot Loaded Ground Structure for C/X/Ku Band Applications Electrical, Control and Communication Engineering ESCI NA 2020 (Accepted) NA
- Snigdha Sinha, Pooja Lohia and D.K.Dwivedi Recent advancements in Fiber – optics biosensors AIP Conference Proceedings 2220 SCI Mago Journal Vol. 020099-1-7 May 2020 pp.1-7
- Sneha Sharma, Vijay Shanker Chaudhary, Dharmendra Kumar Design of chemical sensor based on dual core photonic crystal fiber Materials Today: Proceedings SCI mago - 2020 https://doi.org/10.1016/j.matpr.2020.02.889
- S. Negi, P. Mittal and Brijesh Kumar Numerical modeling and parameters extraction of novel triple hole block layer based organic, Journal of the Society for Information Display (H-Index: 45) ISSN: 1071-0922 (Print) 1938-3657 SCI, Impact Factor: 1.135 May 25, 2020 Accepted
- Aditya Tiwari, Brijesh Kumar and Ambrish Kumar Srivastava Computational Study on CH3-Functionalized Tetraphenyl-1,4-phenylenediamine: A Hole-Transporting Material for OLED Devices Materials Today: Proceedings (ISSN: 0000-2014) Journal H Index-18 SCImago May 2020 https://doi.org/10.1016/j.matpr.2020.04.601
- Aditya Tiwari, Ambrish Kumar Srivastava and Brijesh Kumar Computational Study on 8-Quinolinolate-alkali, an Electron Transporting Material for OLED Devices American Institute of Physics (AIP) Proceedings (ISSN:1551-7616) Scopus DOI: 10.1063/5.0005773 May 2020 https://aip.scitation.org/doi/abs/10.1063/5.0005773

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