ELECTRONICS AND COMMUNICATION ENGINEERING SOCIETY

Electronics & Communication Engineering Society
ECES
M.M.M. University Of Technology

FD-SOI ENABLES CONTROL OF BEHAVIOUR OF TRANSISTORS

Thanks to its ultra-thin insulator layer design

SOYBOTS PROVIDES ARTIFICIAL ENVIRONMENT TO THE PLANTS

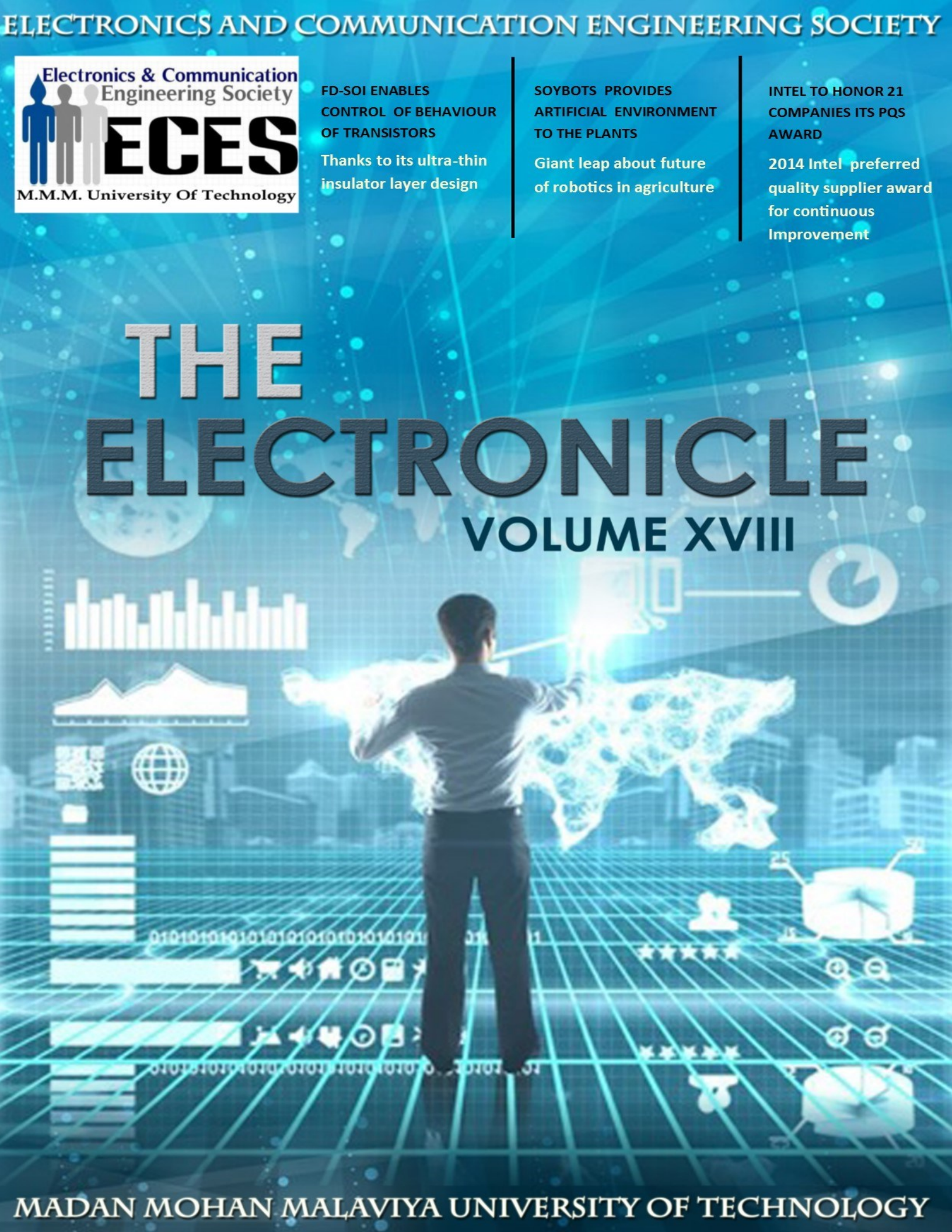
Giant leap about future of robotics in agriculture

INTEL TO HONOR 21 COMPANIES ITS PQS AWARD

2014 Intel preferred quality supplier award for continuous Improvement

THE ELECTRONICLE

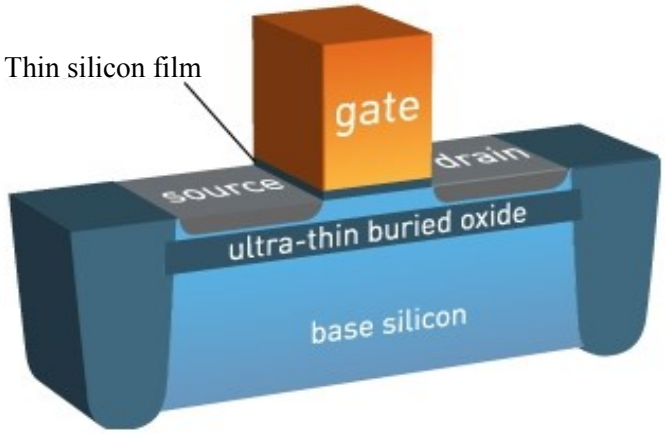
VOLUME XVIII



MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY

FD-SOI

"When the going is tough then the tough gets going."



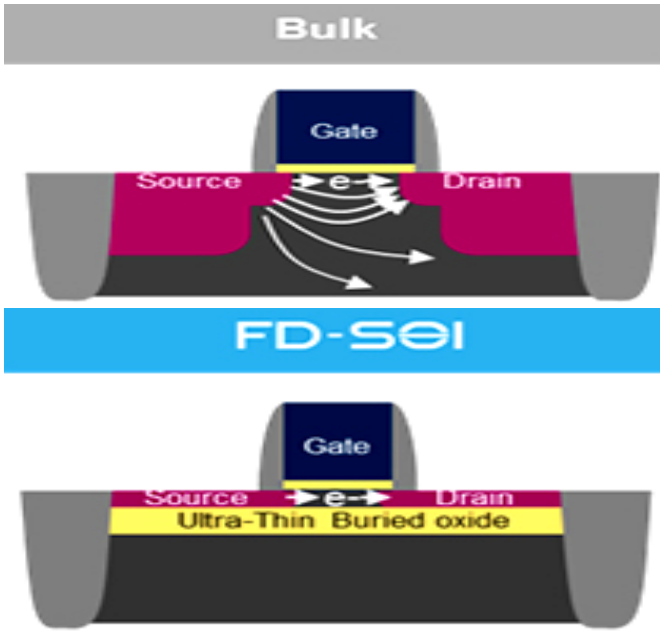
FD-SOI INNOVATION

In order to continue to deliver higher performance while keeping the leakage under control bulk silicon transistors have become ever more complex, adding additional manufacturing steps and more recently considering a move to a new, expensive, 3D architecture. New introduced innovations in silicon process technology that incrementally leverage existing manufacturing approaches. FD-SOI is a planar process technology that delivers the benefits of reduced silicon geometries while actually simplifying the manufacturing process.

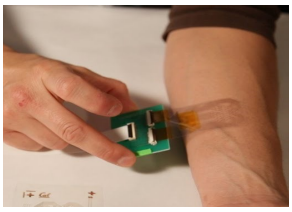
FD-SOI stands for fully-depleted silicon-on-insulator. The term FD-SOI typically refers to a planar transistor architecture. Planar architectures are pretty much what the industry has been doing for decades, but with FD-SOI, it is done on an SOI wafer with very thin top silicon over a very thin layer of insulating Buried Oxide (BOX). This confers significant advantages in terms of power, performance and area at an extremely competitive final cost.

FD-SOI DESIGN

FD-SOI is a planar process technology that relies on two primary innovations. First, an ultra-thin layer of insulator, called the buried oxide, is positioned on top of the base silicon. Then, a very thin silicon film implements the transistor channel. Due to its thinness, there is no need to dope the channel thus making the transistor Fully Depleted. The combination of these two innovations is called ultra-thin body and buried oxide Fully Depleted SOI. By construction, FD-SOI enables much better transistor electrostatic characteristics versus conventional bulk technology. The oxide layer lowers the parasitic capacitance between the source and the drain. It efficiently confines the electrons flowing from the source to the drain.



SMART BANDAGE



A team of researchers have developed what could function as an early warning system, a smart bandage containing flexible electronics that detects tissue damage before it becomes visible on the surface of the skin. Using a technique known as impedance spectroscopy, the team of engineers set out to explore the electrical changes in tissue as it goes from a healthy to an unhealthy state.

ADVANTAGES

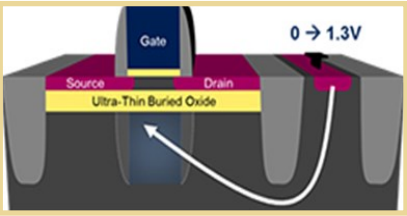
FD-SOI technology enables control of the behavior of transistors not only through the gate, but also by polarizing the substrate underneath the device, similarly to the body bias in bulk technology. In bulk technology, body biasing is very limited, due to current leakage and transistor geometry. Due to the transistor construction in FD-SOI and its ultra-thin insulator layer, biasing is much more efficient.

By construction, FD-SOI enables much better transistor electrostatic characteristics versus conventional bulk technology. The buried oxide layer lowers the parasitic capacitance between the source and the drain. It also efficiently confines the electrons flowing from the source to the drain, dramatically reducing performance degrading leakage currents.

FD-SOI FEATURES

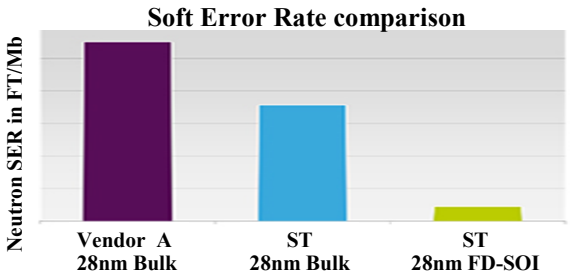
FD-SOI ALLOWS EFFICIENT TRANSISTOR CONTROL

FD-SOI technology enables control of the behaviour of transistors not only through the gate, but also by polarizing the substrate underneath the device, similarly to the body bias available in Bulk technology. In bulk technology, body biasing is very limited, due to parasitic current leakage and inefficiency at reduced transistor geometry.



THE FBB ADVANTAGE

When polarization of the substrate is positive- Forward Body Biasing (FBB), the transistor can be switched faster. This provides an extremely powerful technique to optimize performance and power consumption. Easy to implement, FBB can be modulated dynamically during the transistor operation, bringing a great flexibility for designers and letting them design their circuits to be faster when required and more energy efficient when performance isn't as critical.

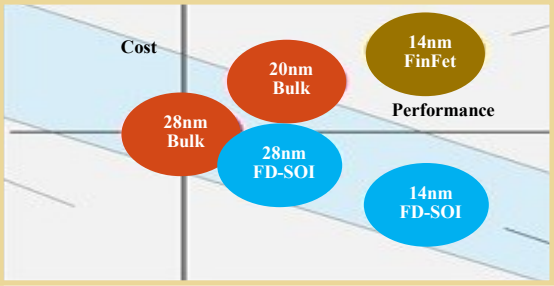


BENEFITS FOR MEMORIES

Combined with ST's patented single-well bit-cell architecture, FD-SOI significantly improves SRAM memory behaviour, allowing it to operate at low voltage and with extremely low leakage currents, while keeping performance comparable to conventional bulk SRAM. Furthermore, FD-SOI memories exhibit best-in-class immunity against radiation errors, bringing area savings and strong reliability to the system.

BENEFITS FOR ANALOG AND HIGH-SPEED DESIGNS

FD-SOI also brings many advantages to analog design. The total dielectric isolation of the channel allows for lower gate capacitance and leakage currents, as well as the benefit of total latch-up immunity. Moreover, the absence of channel doping and pocket implants lower noise specifications and higher gains (up to +15dB) when compared to bulk technologies.



BRAIN WAVE MACHINE

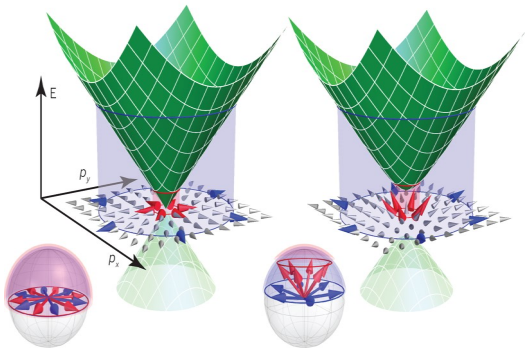
Your brain is made up of billions of brain cells called neurons, which use electricity to communicate with each other. By using light and sound to induce brain states we are able to gain greater control and efficiency of brain usage. Furthermore, improvements in relaxation, memory, creativity, stress management, sleep disorders, and even ESP can be had by utilizing a brain-wave machine.

FURTHERMORE

The FD-SOI technology targets fast performance at low voltage and is an ideal technology to reduce the energy gap between battery energy supply and smart handheld system energy needs, so it runs cool. The industrial ecosystem is in place for the substrate supply, technology platform and design infrastructure. The FD-SOI technology platform is perfectly suited for mobile IC applications where the power consumption has to be very low to maximize battery lifetime. Furthermore, with its simplicity, FD-SOI is an evolutionary step from bulk towards fully depleted design because it maintains the planar device structure.

TECNICZNE

"Be the change you want to see in the world."



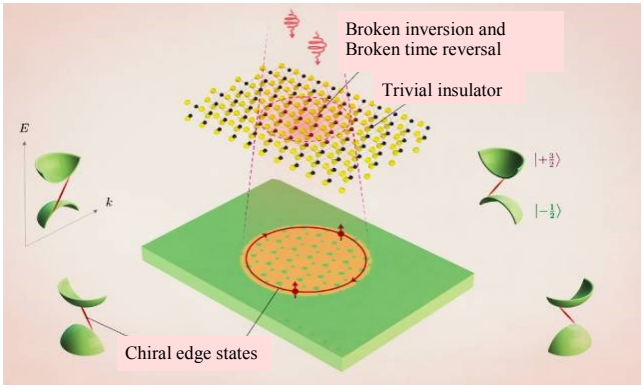
(a) Intrinsic graphene (b) Graphene aligned on Boron Nitride

VALLEYTRONICS

Valleytronics is a portmanteau combining the term valley and electronics. The term refers to the technology of control over the valley degree of freedom (a local maximum/minimum on the valence & conduction band) of certain semiconductors that present multiple valleys inside the first Brillouin zone known as multivalley semiconductors. In spintronics the internal degree of freedom of spin is harnessed to store, manipulate and read out bits of information, the proposal for valleytronics is to perform similar tasks using the multiple extrema of the band structure, so that the information of 0s and 1s would be stored as different discrete values of the crystal momentum.

The "valley" in valleytronics comes from the shape of the graph when you plot the energy of electrons relative to their momentum, the resulting curve features two valleys.

Electrons move through the lattice of a 2D semiconductor, with each valley being characterized by a distinct momentum and quantum valley number. The trick is to manipulate these two valleys so that one is deeper than the other, which leads the electrons to populate one valley more than the other. Quantum valley number associated with it can be used to encode information.



SOYBOTS: MOBILE MICRO GARDEN

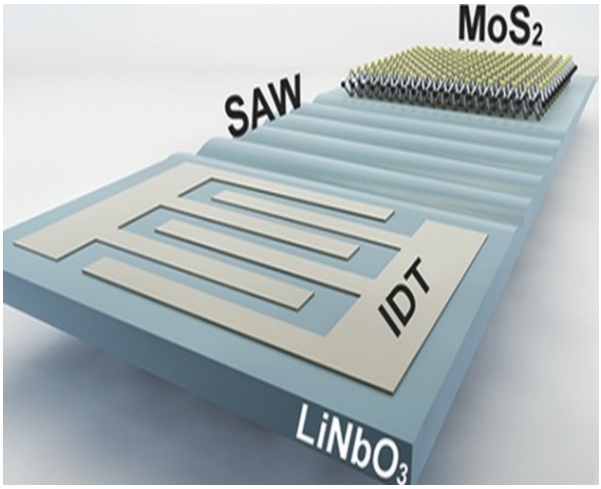
Soybots Mobile Micro-Gardens is a responsive robotic-botanic hybrid artwork that utilizes light sensors to track sunlight intensity or to locate LED grow lights, soybean plants was chosen because they are a key global food source, and part of producing art is to raise questions about the future of robotics in agriculture and how humans exist in this relationship.

A robotic platform allowing indoor plants to search for light to sustain nourishment. It provides an artificial environment to the plants.

As each soybot moves, the robot transmits both sensor data and positional coordinates to a visualization window in its gallery space. The robot's movements as related to light sources are tracked as part of the exhibit, and by making this interface visible to visitors it inspires discussion about energy need, consumption and balance comparing forms of sun and electrical energy.

BLACK PHOSPHORUS

An ultrathin black phosphorus film only 20 layers of atoms to demonstrate high-speed data communication on nanoscale optical circuits. The devices showed vast improvement in efficiency over devices using the earlier wonder material graphene. It has a huge potential for high-speed communication between CPU cores.



NANO EARTHQUAKES RESULT IN FASTER ELECTRONIC COMPONENTS

The key to harnessing the power of 2D materials is so-called nano-earthquakes. It is found that sound waves, properly controlled, can affect the electronic properties of 2D materials like graphene. The earthquake language isn't referring to anything related to real earthquakes, but the way surface acoustic waves (SAWs) can propagate through a material. This experiment used a quasi-2D material known molybdenum disulphide that can act as a semiconductor similar to silicon. In this case it was used as a source of photoluminescence. A layer several atoms thick was coupled to a substrate, so the researchers could study what happens when SAWs ripple across the surface.

Both the direction and intensity of the ripples could be controlled in this experiment, allowing the team to modulate the electronic properties of the 2D material. The research pointed to a tight relationship between the nano-quakes and the electronic performance of the molybdenum disulphide layer. As the intensity of the nano-quakes increased, so too did the photoluminescence of the 2D material. More acoustic ripples resulted in more light being emitted by

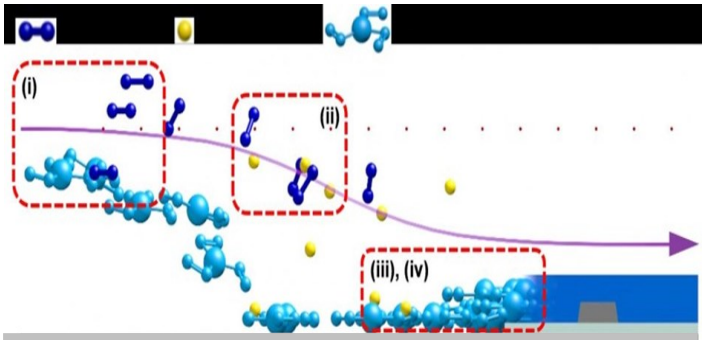
The researchers see a number of uses for this technology in the future use of 2D materials, especially when it comes to optoelectronic applications. For example, smartphone cameras are often hampered in low light by their small sensor size, but a sensor made with a 2D material could increase sensitivity in these situations through the use of sound waves in the camera module. Solar panels could also be improved through the manipulation of 2D materials with sound.

ULTRATHIN POLYMER INSULATORS KEY TO LOW POWER SOFT ELECTRONICS

Insulating layers based on oxides and nitrides provide high capacitance, low leakage, high breakdown field and resistance to electrical stresses when used in electronic devices based on rigid substrates. However, their typically high process temperatures and brittleness make it difficult to achieve similar performance in flexible or organic electronics.

Poly(1,3,5-trimethyl-1,3,5-trivinyl cyclotrisiloxane) (pV3D3) prepared via a one-step, solvent-free technique called initiated chemical vapour deposition (iCVD) is a versatile polymeric insulating layer that meets a wide range of requirements for next generation electronic devices.

The low process temperature, surface-growth character, and solvent-free nature of the iCVD process enable pV3D3 to be grown conformably on plastic substrates to yield flexible field-effect transistors as well as on a variety of channel layers, including organics, oxides, and graphene.



This is a schematic image to show how the initiated chemical vapour deposition (iCVD) technique produces pV3D3 polymeric films: (i) introduction of vaporized monomers and initiators, (ii) activation of initiators to thermally dissociate into radicals, (iii) adsorption of monomers and initiator radicals onto a substrate and (iv) transformation of free-radical polymerization into pV3D3 thin films.

INFINEON EXTENDS OPTIMOS

Infineon has introduced the OptiMOS 25V and 30V product family. The devices offer efficiency improvements of around 1% across the whole load range compared to its previous generation, exceeding 95% peak efficiency in a typical server voltage regulator design.

Don't dream your life , live yours dreams

As it is rightly said that "our future depends upon many things but it depends mostly on us" . So we must nurture our present in best manner to ripe a nice future .

There are people who remain just dreaming and waiting for time to come ,when they will work to fulfil their dreams. But in reality it never comes , time passes away swiftly , leaving them only with unfulfilled dreams and nothing. So , the moral here is that one should not only dream and dream but also work hard as soon as possible to fulfill it.

Some are also there that dream and want to act but they are in habit to seek someone to follow ,guide or coordinate them. But they only in rare are able to foster their dreams , and also that is not up to their fullest of ability and talent .So now stop searching for a fellow to follow your dreams and act yourself to fulfill it. Start now thinking "the journey of even thousand miles starts with a single step". There may be some problems but remember no destiny ,no fate can even control the firm resolve of a determinant soul. Don't stop .Sooner or later you will surely fetch your dreams .the greatest pain in life is to die with dreams unfulfilled. So act now and leave no dream unfulfilled.

WOMEN EDUCATION

"If you educate a man, you are educating an individual
But if you educate a woman, you are educating a whole family."

The history of progress of the human race is the history of education. Hence it is necessary for every person, man or woman, to be educated. Man and woman are like the two sides of a coin. Without one, the other cannot exist. They help each other in every sphere. So education should be given to both man and woman. Further, women are the mothers of the future generation. If women are uneducated, the future generations will be uneducated. In day to day life, the real problems are faced first by women and then the same problems are conveyed to men for solution. If the women are educated, they can solve all the problems of their houses. Napoleon was once asked what the greatest need of France was. He answered "Motherland's National progress is impossible without trained and educated mothers." If the women in any country are not educated ,about half the people in that country will be ignorant. The result is that such a country will not be able to go along with other nations in development and progress. Women should be educated. They should be employed in different spheres. Women can work as teachers, doctors, lawyers and administrators. Educated women are good mothers.

Education of women can be helpful in eradicating many social evils such as dowry problem, unemployment problem, etc. Social peace can easily be established. There is a saying in English that "The hand that rocks the cradle rules the world". The meaning is this that the mother exercises a very great influence over the lives of her children and is able to mould thoughts and characters. If she is educated she will make such impression on the mind of her child, that it will enable him in later life to grow into a good and great man.

ENTREVUE

" Success is not final, failure is not fatal, it is the courage that counts."

Prof. Onkar Singh (Vice Chancellor)

1. What are the various changes that would be seen in our university from next academic year and what are the various challenges that university faces currently?

From the next academic year, there will be increase in the intake of students, one hundred twenty in B.Tech 1st year, sixty in MBA, sixty in MCA, sixty six in 2nd year lateral entry. In terms of infrastructure, there will be a classroom complex of seven classes, a girls hostel of seventy five capacity, six lab rooms (one in each branch) and a reading room of library will be made air-conditioned. Some more recruitment of teachers will also be done. Currently, recruitment of good quality teachers is one of the biggest challenge in front of our university.

2.What is your vision for ECES? Kindly give some suggestions for further improvement or development of ECES.

University will be giving all the possible support keeping the constraints into consideration for the growth and development of the society and the society should make the use of all the support for the students welfare.

For further development in functioning of the society, interaction with the teachers should be increased. Interview of Head Of Department should be taken on regular basis. Interview of the newly appointed teachers should be taken to know about their views about the university and interaction with them should also be increased. Any work should be done with a positive attitude.

Associate Prof. G.S. Tripathi (Faculty Advisor)

1. What steps should be taken according to you to improve the practical knowledge of the students? Give your views about performance of the students this year.

To improve the practical knowledge of the students, they must regularly attend the labs and workshop which are going on. *They must be attentive and should be curious to explore more*. I know that many instruments are not working properly, and we are also trying for their early repair. Students should also take initiatives and should interact with the faculty to gain knowledge from them.

I am seeing that the performance of the students is degrading year by year. The main reason of this is that they are not getting proper direction. I know that the students of our university have very high potential and excellent IQ but they are not focusing on their aim and for their degradation, they are blaming others which is not right.

2. What are the various plans for the development of Electronics and Communication engineering department?

We are trying our fullest to develop the ECE department. Various new faculty members have also been recruited and advertisement for more faculty recruitment has been given .With the recruitment of new faculty members, level of education will increase as the load on the other faculty members will decrease and they would be able to devote greater time and efforts for us. We will be recruiting new faculty within two months for qualitative education. At last I would say that the students should remain focused and work hard to achieve their goals.

- A 1 day Student Workshop was conducted at our university campus by M/S TCS, Lucknow relating to topics **DATA WAREHOUSING** and **CLOUD STORAGE** for Pre final and final year students of B.TECH (CS/IT/EC) and MCA . Experts from TCS also briefed the merits needed for good placement and personality development. The workshop was coordinated by Sri Rajan Mishra, Training & Placement Officer, MMMUT.

- A National Level Conference was organized by ECE Department, MMMUT titled "**RECENT ADVANCES IN COMMUNICATION ENGENIERING AND MICROELECTRONICS"** that marked the gathering of eminent scholars from IITs ,IIITs and NITs. It was headed by Sri R.K PRASAD, the Chariman of this conference.

GIZMOZ

"Let's go invent tomorrow instead of worrying what happened yesterday."

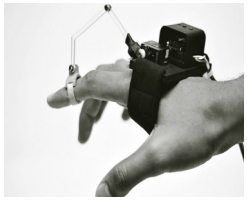

World's First Android Based Smart Drone

Mind4 Android Based Drone :

It's a first android based drone. The drone weighs 960g, with a range of 2km. The battery allows for a 20 minute flight time, during which you can shoot photographs at an impressive 720p. This drone claims to be the first Android based drone, with customisation available through the app, such as adjusting the gesture controls.

Finger Reader:

It's a prototype device that would allow the blind to read with their finger without having to learn Braille. The device relies on a small camera, dedicated sensors, character recognition software and a set of algorithms to read aloud words that are printed on a page or displayed on a digital reading device, such as a Kindle.



Robotic glove :

These are a series of devices that teach people simple tasks like tapping a piano key or drawing basic shapes by using forced haptic feedback. This glove-like robot straps onto your hand and fingers, and guides you through specific gestures over and over. If you do it enough, your hand will learn how to do it through sheer muscle memory.

ODIN Aurora:

It's the world's first laser projection mouse. Odin Aurora supports multipoint controls. In the 8cm x 8cm project area, you only need, at most, two fingers to click, scroll, drag and zoom. With low CPU loading and responsive design, it enables smoother design and gaming experiences .Tiny and portable, ODiN Aurora only weighs 40 grams . It's compatible with Windows XP and later, as well as Mac OS.

The Artiphon :

The device looks like the neck of a guitar, slightly resembling the more complex Rockband guitars. This will work with any MIDI-compatible software,.This works with hundreds of pre-existing apps, and can make any sound imaginable. There are built-in speakers. It's compact, portable, durable, self-powered, and simple.The unique ergonomic design can be held in multiple positions, and is fully ambidextrous.

LogicTech UE Boom speaker:

It is a versatile and durable wireless Bluetooth speaker.It have excellent waterproffing and sturdy construction.It has a good battery life. The UE Boom packs two relatively small 1.5-Watt full-range speakers into its cylindrical body The UE Boom can pair via Bluetooth with not just one but two devices at the same time. Bluetooth pairing can happen without the need of additional software.

Xperia M4 Aqua:

Dimensions:45.5 x 72.6 x 7.3 mm; Display:5" HD (1280x720 pixels) ; Camera:13 MP camera with auto focus 5 MP front camera with HD 720p for video; Weight:136g; On the inside: Google Android 5.0 (Lollipop); 64-bit Qualcomm Snapdragon 615 Octa Core processor (Quad-core 1.5 GHz + Quad core 1.0GHz); Durability: Waterproof and dust tight; Battery:2400 mAh.

SOCIETY'15

"The greatest pleasure in life is doing what people say you can't do."

WINNERS OF EXPLORA'15

C QUIZ	SWATI YADAV SNEHIL VERMA	CSE(1ST YEAR) CSE(1ST YEAR)
G.K QUIZ	SHIVAM TRIPATHI SUMIT KUMAR	ECE(2ND YEAR) EE(2ND YEAR)
JUST-A-MINUTE	ISHITA SHAHI	ECE(1ST YEAR)
COGNITION	ABHILASHA GUPTA	CSE(1ST YEAR)
GROUP DISCUSSION	DIVYANI PANDEY	ECE(1ST YEAR)
PIC-TALES	SATYAM BHATT POOJA GUPTA PRACHI GUPTA NEELU SATYABHUSHAN GUPTA	CSE(1ST YEAR) ME(1ST YEAR) ME(1ST YEAR) ME(1ST YEAR) CSE(1ST YEAR)
ELECTROMANIAC	NANDESHWARLAL SHARMA RAJEEV KUMAR SHARMA	ECE(1ST YEAR) ECE(1ST YEAR)
ROLL THE REEL	RAHUL SINGH SWAPNIL SRIVASTAVA AMIT SINGH PANKAJ CHAUDHARY BITTU KUMAR	ECE(1ST YEAR) ECE(1ST YEAR) ECE(1ST YEAR) ECE(1ST YEAR) ECE(1ST YEAR)
MAP-e-CHART	SHREYA JAISWAL SHWETA SANTOSHI BHAWNA MISHRA	ME(1ST YEAR) ME(1ST YEAR) ME(1ST YEAR)
INCEPTION	ABHISHEK SINGH RAJPUT SHIVAM GUPTA	CSE(3RD YEAR) CSE(3RD YEAR)
VHDL TEST	SHUBHAM CHAND AKSHAY GUPTA	ECE(2ND YEAR) ECE(2ND YEAR)

ECES is completing this working session with their adage of passing the knowledge from seniors to juniors, which begin with the VHDL classes for 2nd year students. They took part in quiz and paper test based on VHDL to sharpen their skills ,at last they also have to submit a practical project . In the 3-days event of "EXPLORA-15", GK quiz, C quiz and Electromaniac were held on first day. The event provides the students a novel platform to express themselves and enlighten the audience with their sparkling words through the events JAM, Cognition , Group Discussion and Inception which was held on 2nd and 3rd day. The most unique and creative event of "EXPLORA-15" that was Roll the reel (In which participants had to make a self acting documentary depicting a moral) was held on 3rd day. Event giving students a chance to make their own comic strip giving some real life message that was Pic-tales, was held on 3rd day of .

FACULTY OF VHDL:

CHARU SINGHANIA (ECE 3rd year)

RISHUKANT TIWARI (ECE 3rd year)

EVENTS IN A SIGHT:

VHDL CLASSES	10-AUG to 02-SEP
VHDL TEST	13-SEP-14
VHDL RE-TEST	10-JAN-15
OPENING CEREMONY OF ECES	28-JAN-15
EXPLORA'15	06-FEB-15 to 08-FEB-15
ECES INDUCTION	25-FEB-15 26-FEB-15

DEPARTMENT

"It doesn't matter how people criticise you, the best act to prove them wrong."

VISION OF DEPARTMENT

The Electronics and Communication Engineering Department is having vision to create a state of art to groom professionally competent engineers to excel in Communication, Digital hardware, IT, Microelectronics, Network programming and interacting with Industries .The department has mission to offer the state of art technical education in the field of ECE having objectives of **:**

- Improving the quality of teaching and learning process.
- Creating conducive atmosphere in department for the students.
- Creating technical awareness among the students through special lectures from resource persons through industrial visit & in-plant training.
- Improving the faculty performance through continuing education, organizing and participating in seminars, workshops and state & national level conferences.

For the purpose of knowledge sharing at higher level the department is having one Professor, three Associate Professors and three Assistant Professors. Number of students graduated in session 2014-15 are sixty nine.

ONGOING PROJECTS:

S.No.	Title	Name of PI	Funding Agency	Period
01.	Design of SRAM	Dr. R.K. Chauhan	AICTE, New Delhi	2012 to 2014
02.	Design and enhancement of Micro Strip Patch Antenna for Wireless Communication	Shri R.K. Prasad	UGC, New Delhi	2013 to 2015

The department is facilitate 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 ,etc.

Newly proposed labs:

- Advanced Communication lab
- Optoelectronic lab
- Embedded lab
- Advanced VLSI lab

The recent publication of department are :

1.By Shri Y. Prajapati , Prof. J.P.Saini ,Prof. B.S.Rai , and Ms. Pooja Lohia **"Enhancement of single mode operation in coaxial optical waveguide using DB boundary condition",** Infrared Physics &Technology , Elsevier.vol-67, pp-462-466,2014.

2.By Shri Vimal Kumar Mishra and Dr. R.K.Chauhan ***"Impact of Ge Substrate on Drain Current of trigate N-FinFET"***, IEEE International Conference on Advances in Computing Communication and Informatics (ICACCI), pp-1976-1980,Sept-2014.

COGNIZANCE

"Forgiveness is the best revenge. "

MEMS shipments to reach 43.3B units by 2018, says Semico Research

Gyroscopes and accelerometers will account for a significant amount of the MEMS revenues. The new Semico Research report **"***MEMS Market Update: The New Driving Forces***"** projects that MEMS shipments will reach 43.3 billion units by 2018.

Danish firm shows low cost eye tracking at MWC 2015

Eye tracking software that will run on Android smartphones was demonstrated by Denmark-based firm Eye Tribe at Mobile World Congress (MWC) in Barcelona this week.
Eye Tracking SDK for Android opens the possibility of integrating affordable eye tracking into mobile.

New Modules Based on Acrich3 Technology

Seoul Semiconductor a leader in LED technology, on March 19th announced the availability of new Acrich3 (i.e. no need for AC/DC conversion) modules for a wide range of residential and commercial lighting applications.

Miniature Point Source LED added to product line up.

Marktech Optoelectronics Corp. announces the addition of a PLCC-4 and miniature ceramic package to the 650nm and 850nm Point Source LED series.

Intel honors 21 companies

Intel announced that 19companies will receive the 2014 Intel Preferred Quality Supplier (PQS) award that recognizes commitment to performance excellence and continuous improvement. from IAR.

Micron and Intel Unveil New 3D NAND Flash Memory

3D NAND technology uses floating gate cells and enables the highest-density flash device ever developed-three times higher capacity than other NAND die in production.

NXP and Freescale Announce $40 Billion Merger

NXP Semiconductors NV and Freescale Semiconductor, Ltd. today announced that they have entered into a definitive agreement under which NXP will merge with Freescale in a trans-action which values the combined enterprise at just over $40 billion.

Pseudo colour changer

Borrowing a trick from nature, engineers from the University of California at Berkeley have created an incredibly thin, chameleon-like material that can be made to change color on demand by simply applying a minute amount of force.

Bristol's AptCore has released a processing core for image processing and machine vision

"Utilising AptCore's unique processor architecture and data access structure, the core can achieve close to 100% efficiency for its target applications.

F1 Laser :

ROFIN-SINAR Inc. introduces the Smart Cleave FI laser process and the MPS glass handling system for high speed and precise cleaving and drilling of glass up to 10 mm thickness.

Electronics & Communication Engineering Society

ECES

M.M.M. University Of Technology

AN ECE SOCIETY PUBLICATION