Electronics & Communication Engineering Society

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

THE ELECTRONICLE

VOLUME XVI

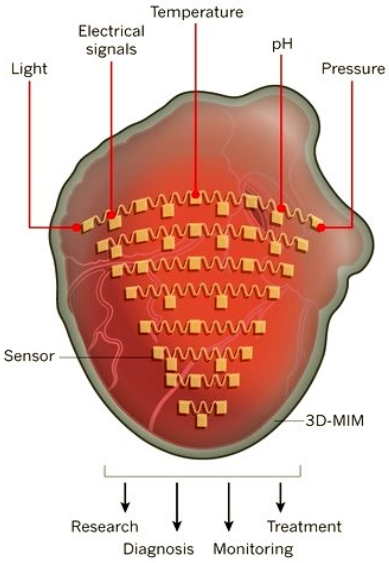
MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY

3D-MIMs

" For spatiotemporal cardiac measurements and stimulation across the entire epicardium. "

"QUOTE"

"Technology made large population possible, large population now make technology indispensable."



Multifunctional Monitoring | Scientists have developed three-dimensional elastic membranes (3D-MIMs) that conform to the surface of a specific heart, creating a platform for arrays of multifunctional sensors and electronic and optoelectronic components that can stimulate and measure the pH, temperature, voltage or strain in the heart.

An elastic membrane cast around a three-dimensional printed model of a specific heart allows diverse aspects of cardiac function to be monitored and modified and paves the way to new diagnostic and therapeutic approaches.

A LONG-SOUGHT GOAL has been to observe, diagnose and treat dangerous disturbances to cardiac rhythm, an unfortunately common situation that occurs when electrical impulses in the heart become disordered. The major road block in the quest to understand and treat abnormal cardiac rhythms (arrhythmias) is that there is no straightforward approach for detailed inspection of the underlying electrical, metabolic and mechanical changes and the interactions between them.

The devices, termed Three-Dimensional Multifunctional Integumentary Membranes (3D-MIMs), offer several key features. They are inherently elastic and mechanically stable and they provide a uniform, non-invasive interface to all points on the heart, allowing high-resolution measurement or high-density stimulation of cardiac function. Furthermore, the components of the attached sensors can be distinctively configured to allow a variety of functions, including electrical, thermal and optical stimulation, or measurement of pH, temperature, voltage or strain.

"Although the technology is in its infancy, the development of a 3D-MIM prototype represents a breakthrough technology with the potential to significantly expand diagnosis and treatment options for common cardiac-excitability disorders."

Preparation

The 3D-MIMs are made by casting a thin layer of silicone elastomer (a silicone containing rubber-like material) over a 3D-printed reconstruction of the heart of interest, which is generated using scanning techniques involving optical segmentation, magnetic resonance imaging or computed tomography. This process produces an artificial envelope that uniquely conforms to a specific heart. The manufacturing technique can be applied to different species and importantly, to individual patients.

Potentials

The immediate potential for using 3D-MIMs in such open-chest surgical scenarios is clear, chronic implantation of 3D-MIMs in patients could prove effective. Such implantation might eventually allow for post-surgery monitoring involving continuous measurements of local metabolic, excitable, ionic, contractile and thermal states of the heart in response to various diseases or therapies. These diagnostic data might then be used to activate the device remotely to deliver targeted electrical therapy without the need for further surgery. The membranes might also be developed as a platform for low-energy control or defibrillation methods to regulate electrical turbulence in the heart. In the same vein, 3D-MIMs could conceivably be used for localized and targeted delivery of stem cells, viral vectors or drugs. There is also the future possibility of creating an in vivo optical-mapping system using externally applied dyes or internal fluorescent indicators.

Research Applications

The research applications of 3D-MIMs will be to perform multiple simultaneous measurements of a working (beating) heart during normal or abnormal cardiac cycles. Such measurements include temperature, tension and pH, any or all of which can be recorded simultaneously from electrical signals. Currently, optical mapping with voltage-sensitive dyes is the best available technique for measuring electrical function with high spatial resolution in the intact heart. However, one of the acknowledged shortcomings of this approach is that it relies on excitation–contraction uncoupling drugs that allow recording only in the motionless heart. 3D-MIMs overcome this limitation, allowing the first possibility of high-resolution measurements of excitable and metabolic states in the beating heart.

Self Organizing Robots

Harvard's TERMES system demonstrates that collective system of robots can build complex, three dimensional structures without the need for any central command or prescribed roles. The TERMES robots can build towers, castle and pyramids out of foam bricks, autonomously building staircases by themselves to reach a higher level and adding bricks wherever they are needed. In the future, similar robots could lay sandbags in advance of a flood, or perform simple construction tasks on Mars.

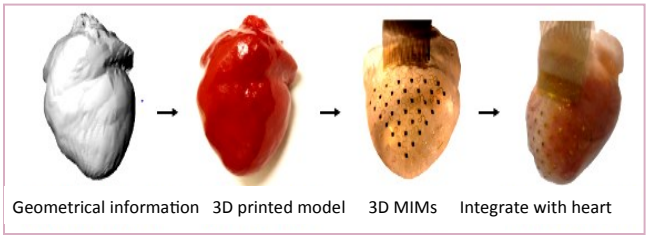
Possible Future Interventions

The results suggest, routes for integrating active electronic materials and sensors in 3D, organ-specific designs, with potential utility in both biomedical research and clinical applications. With attention to materials, engineering mechanics and functional devices, these systems can establish conformal interfaces. Separate electrical connection, with a single trigger channel to synchronize the timing, eliminates effects of crosstalk. The devices can provide local information on the metabolic, excitable, ionic, contractile and thermal state for investigations of both the spatial and temporal responses to a variety of diseases and therapies. The devices could be used to identify critical regions that indicate the origin of pathophysiological conditions such as arrhythmias or heart failure. These regions could then be used to guide therapeutic interventions. The techniques in microfabrication, transfer printing and 3D shape definition are scalable to larger sizes and smaller, denser arrays of sensors. To increase the resolution and number of sensors, it may be necessary to incorporate transistors into the device to allow multiplexed addressing.

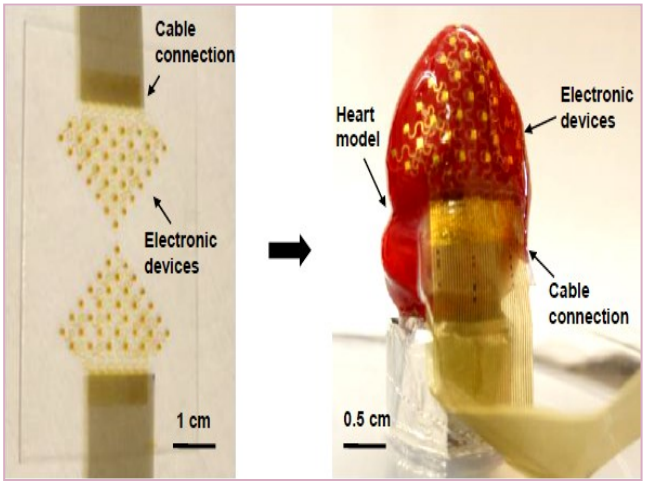
The functional elements in conformal contact with the epicardium:-

- ECG sensor
- Si strain guage
- Temperature sensor
- μ-ILED
- pH sensor

Graphical depiction of the key steps in device design and fabrication



Lamination process for formation of the 3D model of heart



Remaining challenges for use as a chronic implant include means for power supply, control/ communication and encapsulation. These approaches present a promising opportunity to design and implement high-definition implantable devices for diagnostics and therapy of lethal heart diseases.

Silicon-Germanium chip sets a new speed record

A RESEARCH COLLABORATION CONSISTING of IHP innovations for High Performance Microelectronics in Germany and the Georgia Institute of Technology has demonstrated the world's fastest silicon-based device to date.

The investigators operated a silicon-germanium (SiGe) transistor at 798 GHz fmax, exceeding the previous speed record for silicon-germanium chips by about 200 GHz. Although these operating speeds were achieved at extremely cold temperatures, the research suggests that recording speeds at room temperature are not far off. In SiGe technology, small amounts of germanium are introduced into silicon wafers at the atomic scale during the standard manufacturing process, boosting performance substantially.

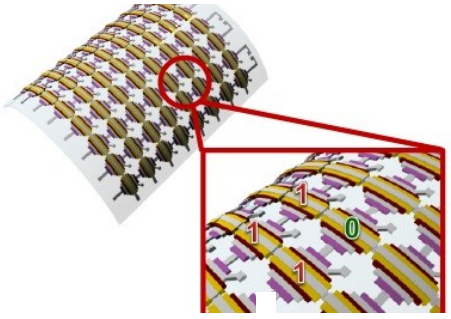
The result is cutting-edge silicon germanium devices such as the IHP Microelectronics 800 GHz transistor. Such designs combine SiGe's extremely high performance with silicon's traditional advantages – low cost, high yield, smaller size and high levels of integration and manufacturability – making silicon with added germanium highly competitive with the other materials.

Pico projector module with high-definition resolution

It uses Laser Beam Scanning (LBS) to realize crisp, beautiful high-definition resolution and "focus-free" projection, regardless of the distance or angle from the projection surface. By combining this module with Wi-Fi components and a battery, it can realize a compact, pocket-sized projector which can be used to project images from products such as smartphones or tablets.

Bendable organic carbon nano compound 64-bit memory

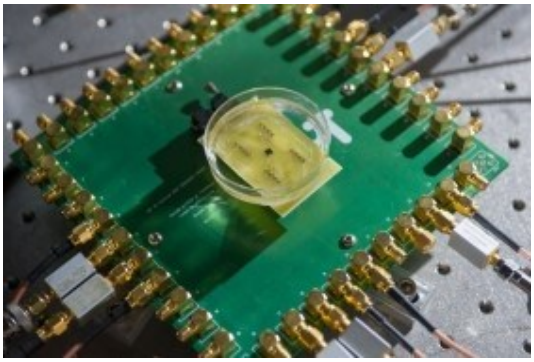
THE RECENTLY DEVELOPED MEMORY CELL , USES A technology, which arranges organic material in a single configuration at room temperature and places the material on a desired spot at the substrate. This is the core technology in enlarging the storage capacity of memory, an unprecedented discovery until now.



In this research, organic memory cells (resistors) based on carbon nano compounds and organic diodes to control the direction of electric currents were stacked upon each other. Once the direction of the electric current is controlled, it can be made to flow in one direction, data can be made rewritable, thereby limiting any interference from nearby cells. These cells are constructed in the form of 1D-1R (1 Diode + 1 Resistor) , which gives them flexibility with accuracy in data processing.

Edison supercomputer electrifies scientific computing

This scientific supercomputer is configured to simulate and model complex phenomena, such as nanomaterials converting electricity into photons of light, climate changing over decades or centuries, or interstellar gases forming into stars and galaxies.



Single chip device to provide real time 3D Images from inside the heart blood vessels

RESEARCHERS HAVE DEVELOPED THE technology for a catheter-based device that would provide forward-looking, real-time, three-dimensional imaging from inside the heart, coronary arteries and peripheral blood vessels.

The new device could better guide surgeons working in the field of heart surgery and potentially allow more of patients' clogged arteries to be cleared without major surgery.

The device integrates ultrasound transducers with processing electronics on a single 1.4 millimeter silicon chip. On-chip processing of signals allows data from more than a hundred elements on the device to be transmitted using just 13 tiny cables, permitting it to easily travel through circuitous blood vessels. The forward looking images produced by the device would provide significantly more information than existing cross-sectional ultrasound.

The device will allow doctors to see the whole volume that is in front of them within a blood vessel.

The three dimensional imaging research was supported by award number R01EB010070 from the National Institute of Biomedical Imaging and Bioengineering (NIBIB), part of the National Institutes of Health, USA.

Industrial CMOS

A breakthrough in industrial electronics sector

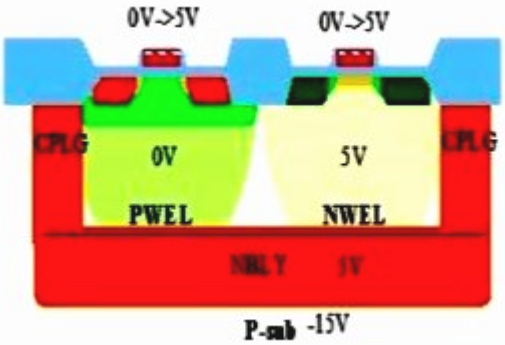
THE NEW TECHNOLOGY ENABLES USERS to put as much as 30 V across a chip with submicron geometry. An optional drain extension allows operation at upto 50 V. In addition to the high-voltage MOS, analog devices' ICMOS industrial process technology includes high-voltage, fully complementary bipolar devices. With these components, ICMOS combines the performance benefits of a complementary bipolar process, the efficiency of CMOS and high-voltage capability.

The primary benefit of ICMOS is that a small-geometry process can now be used to produce precision converters, amplifiers or other mixed-signal devices that are capable of handling industrial-level voltage.

Wireless sensor-based irrigation system

It can offer significant benefits to greenhouse operators. This system provides more accurate measurements of substrate moisture than qualitative methods and can save irrigation water, labour, energy and fertilizer.

5V CMOS Isolation



- **Normally 5V MOS must operate with 5V of substrate**
- **With isolation 5V CMOS can operate independent of substrate**
- **With isolation 5V CMOS can be isolated from HV sections**

The list of ICMOS options include:

i) Isolated, vertical PNP and NPN transistors, both with poly emitter construction.
ii) Trimmable, high-density, thin-film resistor arrays of 1000 ohms/square.
iii) Standard poly-capacitors, available on both high-voltage and 5 V CMOS.
iv) Both fuse and ROM-based memory capability.
v) A variety of other resistors, diodes and JFETs.

Interview: Hon'ble Vice Chancellor Prof. Onkar Singh

Prof. Onkar Singh
(Vice Chancellor)

- **What important developments would be seen in our University from this year?**

  We will be admitting new batches from 2014-15 with new set of mandates and ordinances that will be completely different from the prevailing system. We will be switching onto a new credit based system that would include more weightage on continuous evaluation of students. Now there would be three tests of fifteen marks each (1 hr) and there will be end semester exam of forty marks (3 hrs) and rest fifteen marks will rely on internal assessment. Teaching and learning environment would now be more adaptive. Now the final year projects will be fabrication based. There is a plan to develop four seminar halls for e-learning supplements.

- **What is your plan for development of ECE Department and how can ECES help in upgrading the level of University?**

  I have asked the Head of Department to prepare the road map for the upcoming session in order to foster the development of the department. The lab facilities will be enhanced and a proposal for development of seminar room is in process.

  The end product of each and every college is its students. Hence, I expect that professional society such as ECES should get involved in problems of students and try to supplement their deficiency. The members of the society should act as student mentors for their respective juniors in order to promote rich learning environment.

NATIONAL CONFERENCE ON ACCES :

A national conference on "Advances of Computer Communication and Embedded Systems" was organized during 21–22 March, 2014. It had five technical sessions overall. They are Micro Engineering, Optical fiber and Wireless Communication, Data Communication and Digital Communication, Device Modeling Circuit and Design Embedded System and DSP, DIT. The Chief Guest of the conference was Prof. Onkar Singh (Vice Chancellor of MMMUT) and the Chairman of the conference was Prof. B.S. Rai (HOD, ECE Dept.). The Convener of the conference was Prof. R.K. Prasad and the Co-Convener was Prof. Rajan Mishra. A total of fifty papers from KNIT Sultanpur, IIIT Allahabad and MNNIT Allahabad were selected from the bunch and were published.

The keynote address was given by Prof. D.K. Singh (NIT Patna) on optical fiber. Experts Major S.N. Shah (CST, NE Railway) and Dr. S.K. Vishwakarma talked about use of electronics in railways and graphene respectively.

TECH-TRENDS

" Find what is inside the new Xperia Z2."

"QUOTE"

" What new technology does, creates new opportunities to do a job that customer wants done. "

Xperia Z2 **Display-**5.2-inch 1080p "Triluminos" LED 424 pixels/In I **Processor-**2.3GHz Qualcomm Snapdragon 801 I **RAM-**3GB I **Battery-**3,200mAh internal I **Software-**Android 4.4.2 (KitKat) I **Waterproofing -**Rated IP55/58 I**Camera-**20.7Mp Exmor RS with Sony G lens 4K video I **Connectivity-**3G/DC-HSDPA/4G LTE (Cat. 4)Wifi a/b/g/n/ac, Bluetooth 4.0

Mi-Fi creates a Wi-Fi network anywhere. It allows you to connect up to five devices at once for little things. It connects to satellites and creates a Wi-Fi network with a range of up to 100 feet. Any *i*OS or Android phone or tablet can connect through app and then you can use your phone similarly to how you normally would. It has the advantage of connecting to multiple devices simultaneously.

***i*-Kettle** pairs with a mobile app on your smartphone. From the app, you can control the kettle's operation. There's a Wake Up mode that automatically starts a prompt whether you want to start water boiling the first time you turn on your phone in the morning; there's also a Welcome Home mode. The kettle can hold up to 1.8 litres of water, with stainless steel construction and a soft-touch handle.

Mola Headlamp features an automatically tilting LED, which better matches the angle of your eyes. So, when you raise your head, the 110-lumen LED angles upwards even further to put the light closer to where your eyes are actually looking. The automatic motion is powered by gravity and a small counterweight, the bulb it relies on a couple of AAA batteries that should keep it running for up to 45 hours.

Finger Reader is a wearable device that assists in reading printed text. It is a tool for visually impaired people who require help with accessing printed text, as well as an aid for language translation. Wearers scan a text line with their finger and receive an audio feedback of the words and a haptic feedback of the layout: start and end of line, new line and other cues.

JUMP integrates a little extra power into your smartphone's charging cable, ensuring its light enough to carry and always has a bit of extra power to keep your device running. Its small inline battery is only packing about 800mAh of power and because it is integrated into a cable, it starts charging as soon as your device is topped off.

Falcon KC-200 is a new kind of night vision camera that captures full colour footage even when it is completely dark out. The 720p camera, which allows lenses to be swapped for various videography needs, could revolutionize nature photography providing a more accurate look at nocturnal animals and law enforcement will probably jump on the technology.

SCOPE & R&D IN ELECTRONICS

" India aims at USD 400 Bil turnover till 2020 with investment of USD 100 Bil ."

"QUOTE"

" There is no elevator to success, you have to take the stairs ."

The Electronics sector is a key player in the economy and one of the most globalized industries in the world. It is a strategic enabler and a driving force for all the services, be it Internet, Telecom, Precision Engineering Industries, Aviation, Energy, Banking .

Electronics specific Interventions (Budget Announcement 2013-14)

Fab (Semi-Conductor Wafer Fabrication)	**Set Top Boxes**
The National Electronics Policy 2012 is intended to promote manufacture of electronic goods in India and proposes for, zero customs duty for plant and machinery.	**To encourage domestic production of set top boxes as well as value addition, the budget is proposed to increase the duty from 5 percent to 10 percent.**

Mobile Phones costlier than Rs. 2000

On mobile phones priced at more than Rs. 2000, it is proposed to raise the duty to 6 percent. Excise duty on mobile handsets including cellular phones having retail sale price more than Rs. 2000 is being increased from 1% to 6%.

National Policy on Electronics (NPE) Vision 2020

"To create a globally competitive electronics design and manufacturing industry to meet the country's needs and serve the international market."

Investment : US$ 100 Bn **Production : US$ 400 Bn** **Employment : 28 Mn**

Semiconductor FABs in India

Electronics Manufacturing Clusters (EMC)	**Modified Special Incentives Package Scheme**	**HR Initiatives**	**Preferential Market Access (PMA)**	**Electronics Development Fund**
Infrastructure Development •Roads •Power •Water •ETP's •Testing facilities •Social Infrastructure •Subsidy upto USD 10 Mil per 100 acres of land, applicable to both Greenfield and Brownfield projects •Targeting about 200 clusters by 2020	•Reimbursement of CVD/excise for capital equipment in non-SEZ units •Reimbursement of Central taxes and duties for 10 years in select high tech units like fabs and ATMPs • Incentives available for 10 years from the date of approval Substantial CAPEX subsidy	•Electronics and Telecom Sector Skill Council Set Up •31 ICT and Electronics Academies -Scheme under approval •Special Man power Development Programme- Phase III for VLSI and chip design for 10,000 students. PhDs in Electronics, 2500 by 2020	•Preference given to domestically fine manufactured electronic goods in Government procurement •Extent of Government procurement from domestic manufacturers will not be less than 30 % of total procurement	•Size of EDF *US$ 2 Bn* •Comprises of **"Daughter Funds"** of size US$ 20 Mn -100 Mn •Each fund to have Govt. share from 25% - 75%; remaining from private and financial institutions

Here are different steps for starting manufacturing unit—

Setting up a company or any other form of business: The business structure can be a company, a branch office in an Special Economic Zones (SEZ), or the Limited Liability Partnership (LLP).

Project Approval: Preparing the detailed project report and getting an approval from the concerned state government department.

Manufacturing Sector		Service Sector	
Enterprises	Investment in plant & machinery	Enterprises	Investment in equipments
Micro Enterprises	Less than INR twenty five lakhs	Micro Enterprises	Less than INR ten lakhs
Small Enterprises	Between INR twenty five lakhs and INR five crores	Small Enterprises	Between INR ten lakhs and INR two crores
Medium Enterprises	Between INR five crores and INR ten crores	Medium Enterprises	Between INR two crores and INR five crores

Factory Land/Office Space: The land for factory can be acquired in various areas like Special Economic Zones, Electronic Manufacturing Clusters, National Investment & Manufacturing Zones, Electronic Hardware Technology Parks Industrial Zones Industrial Areas & Private Land.

Human Resource Hiring and Management: It includes complying with various labour laws such as Industrials disputes Act, 1947, Trade Unions Act, Payment of Bonus Act, 1965, Payment of Gratuity Act, 1972 etc.

Key Labour Requirements:

Maximum hours worked by employees	48 hrs/ week
Number of Indian employees which trigger employer obligation to provide employees state insurance	10
Number of Indian employees which trigger employer obligation under Provident Fund Scheme, Bonus Act	20
Number of years of continuous service which makes an employee eligible for gratuity	5 years
Minimum bonus to be paid to an employee drawing a basic wage of INR 10000 or less	8.33%
Prohibited age of employing young children in factories	14

There are many other state-level regulations like getting approvals from the fire department, the pollution control board and environment ministry in some cases. The rules and regulations are different in each state. *For more log on to www.deity.gov.in.*

Something about Electronic Manufacturing Clusters (EMC)

A) **Brownfield electronic manufacturing clusters** are those existing areas which are notified by Deity. For a unit to be eligible for Modified Special Incentive Package Scheme (M-SIPS) it should be located within the brownfield EMC. Deity notifies brownfield EMC considering geographical area, infrastructure availability etc.

B) **Greenfield electronic manufacturing clusters** are new industrial areas which are being promoted for attracting investments in electronics.

Financial assistance provided for EMC's

Brownfield EMC: The assistance will be restricted to 75% of project cost subject to ceiling of INR 0.5 Billion. The remaining project cost shall be financed by other stakeholders of the EMC with a minimum industry contribution of 15% of the project cost.

Greenfield EMC: The assistance will be restricted to 50% of the project cost subject to ceiling of INR 0.5 Billion for every 100 acres of land. The remaining project cost shall be financed by other stakeholders of EMC with a minimum industry contribution of 25% of the project cost.

The administrative expenses would be restricted to 3% of the central assistance in the project. Expenses towards preparation of detailed project report would also be considered a part of project cost.

Domestically Designed 6MV Linear Accelerator (Linac) to reduce price of medical care for Cancer patients

- A 6 MV Medical Linac has been developed by Society for Applied Microwave Electronics Engineering & Research (SAMEER), Mumbai and CSIO, Chandigarh. The Medical Linac caters to 70-80% of Cancer treatment related radiotherapy applications. It conforms to IEC standards for radiological and non-radiological safety and is type approved by AERB, Mumbai.
- The Linac developed by SAMEER and CSIO is expected to cost about `2.5-3 Crores as against ` 4-5 Crores for similar Linacs available in the market. This is expected to reduce the cost of medical care for cancer patients.

JUST THINK!

BE CRAZY, BE FOOLISH, MAKE MISTAKES, RISE UP AGAIN BUT NEVER LEAVE YOUR PURPOSE. ONLY ONE LIFE TO LIVE, WHY NOT GIVE YOURSELF A CHANCE

BY NIKHIL KUMAR CHAURASIA Final Year ECE

Somewhere deep down there exists a fear in all of us. That fear unknowingly paralyses us quite often at some point of time. We are not content with our lives and when we dig down deep, we find it was the same fear that stopped us from creating our lives. There comes a time when we want to revert our decisions. Then we realize that if that one decision would have been taken our life could have been worth living, not only for us but for the others around us too. It is true that until you are of no use to yourself, you cannot be of any help to others. To make yourself really worth it you have to listen to your heart and do that thing in life what you love to do. There are no problems and no constraints until and unless you create them in your minds for yourself. From the day we are born, we are told 'it's not possible'. There were many impossibles in this world earlier too, but ordinary people like us all, whether known to you or unknown, have been successful in breaking those beliefs and since then it was no longer impossible. I am not talking about a particular field, there are thousands of people out there who have accomplished what they believed in doing, be it their career or their very own personal life. Things are same in both domains. Just because someone says it is stupid or you can not do it, those are just words until and unless you know what your heart wants. The thing is really very simple. Be crazy, be foolish, make mistakes, rise up again but never leave your purpose. Only you know what makes you happy and I am talking about long term happiness here which may have little obstacles which you can easily overcome, just follow that. Why give yourself a reason to lament when all you need is a decision? It may hurt a little bit, people around might laugh at you, you might be worried sometimes, but your soul will be happy because you had the courage to choose your own goals. It is all upon you, whether you want to keep on criticizing the circumstances or really just want to do it. Taking action is in your hands. 90% of people in this world would not have that madness to achieve what they believe in and they would eventually get lost. Do it, not because you have to do it but because there is a purpose in doing it. There are no prototypes of living a life. You create your own destiny. We should do something now because there isn't any perfect time as such. No changes can happen if you yourself don't believe in. And one day you will get in life what you couldn't even think of in your dreams. It would be 10 times and more than you ever wanted. Just ask your heart once truly, today itself that is this the one job or the one life you truly love. Answers will be clear. After all it is rightly said, you become the person you believe you are. It is your life. The day when you will be lying on your resting beds, you should feel like 'what a great life I lived'. Just think, instead of living like a dead, why not die after living.

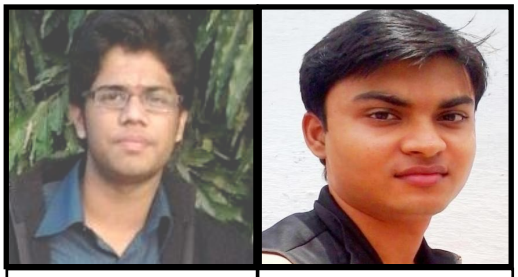
Why you fear when you know the one who has it all?
Waiting for a moment to realize when to go far
Again and again time follows to remind what we want
Why does it takes so long to understand what is in your heart?

WINNERS OF EXPLORA'14

C QUIZ	ABHISHEK SINGH	CSE(2ND YEAR)
G.K QUIZ	RISHABH TIWARI	CE(1ST YEAR)
	RAMESH KUMAR	CE(1ST YEAR)
JUST-A-MINUTE	SUYASH SRIVASTAVA	CE(1ST YEAR)
COGNITION	SHIVAM TRIPATHI	ECE(1ST YEAR)
GROUP DISCUSSION	SUYASH SRIVASTAVA	CE(1ST YEAR)
PIC-TALES	SHUBHAM CHAND	CE(1ST YEAR)
	VAISHNAV DIXIT	ECE(1ST YEAR)
	ANKITA JAISWAL	ECE(1ST YEAR)
	ADITYA JAISWAL	ECE(1ST YEAR)
	LISHA	ECE(1ST YEAR)
ELECTROMANIAC	VISHAL TIWARI	ECE(1ST YEAR)
	SURAJ PANDEY	ECE(1ST YEAR)
	ADITYANSH UPADHYAY	ECE(1ST YEAR)
ROLL THE REEL	AVINASH YADAV	ECE(1ST YEAR)
	AKSHAY GUPTA	ECE(1ST YEAR)
	DEEPANKUR SINGHAL	EE(1ST YEAR)
	SUMIT KUMAR	EE(1ST YEAR)
	PRASHANT SINGH	EE(1ST YEAR)
MAP-e-CHART	ANJU KUMARI AND TEAM	CSE(1ST YEAR)

ECES boasts of completing its 7th working year, following the motto of passing the knowledge from seniors to their juniors. Kick starting the session with VHDL Classes for 2nd year students, following by with the Classes on VLSI/PSPICE for 3rd year students.

FACULTY OF VHDL



TUSHAR SRIVASTAVA	SHIKHAR SRIVASTAVA
ECE 3rd year	ECE 3rd year

Inception:

The paper presentation event organized exclusively for the first year students. Its main motto was to groom their presentation and oration skills. Winning team was Technogeeks— Ravi Prakash (CE) and Shubham Srivastava (CSE).

Explora'14 organized in association with Embedronics-e-Design

With Explora fun never ends. It is one of the most vibrant event of MMMUT organized by ECES. Prelims of GK quiz , Group Discussion and rounds of C Quiz were held on 1st day . Second round of GK quiz was a multimedia round while for that of C quiz was based on coding. Oratory events JAM, Cognition, Group Discussion tested and enhanced the language proficiency, vigilance and literary tactfulness of the students. The first round for Cognition was extempore and the 2nd round was a rapid fire round. Roll the Reel participants had to make a documentary through self acting that depicted a real theme. Pic-Tales was a slideshow event wherein only with the help of images a message had to be delivered. Electromaniac was the new event introduced this year sponsored by Embedronics-e-Design.

Literary Event: ECES in the month of September organized a Literary event which unfolded in three stages and witnessed large participation from 2nd year students. In it, first prize was bagged by Ahmad Rashiq (CE).

Electronics & Communication Engineering Society

ECES

M.M.M. University Of Technology

AN ECE SOCIETY PUBLICATION

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SANCHIT AGRAWAL

CO-EDITOR

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