

## University Toppers

(Within Top 100)

## Batch of 2016

Dhruv Pandey, Manik Sethi,  
Sudipto Saha, Gaurav Goel,  
Himanshu Sethi, Arpita Sahoo,  
Shreya Kumar, Nitish Pandey,  
Karan Wadhwa, Mohit Lamba,  
Simran Agarwal, Nikita  
Sharma, Varun Goel, Abhishek  
Sharma, Raghav Kathuria, Amit  
Goyal

## Batch of 2017 (Final Year)

Shubham Bhatnagar,  
Shubham Jindal,  
Pranshu Joshi, Sachin Sharma,  
Vinder Miglani, Dhruv  
Sharma, Himani Dhir, Sumisha  
Jindal, Vivek Bardoshiya, Jatin  
Goswami, Anirudh Mittal,  
Ambuj Arora

## Batch of 2018 (Third Year)

Apurva Gupta, Rishabh  
Maheshwari, Shivani Grover,  
Paras Mittal, Kartik Mundhra,  
Rishabh Tyagi, Prakhari  
Bhardwaj, Archit Halder,  
Kundan Jha, Mayank Agrawal,  
Shreya Nandy

## List of Publications

Akshat Malik, Abhilasha Gokhale and Neelam Sharma, "Fast Computing using Redundant Binary Signed Digit Adders", INDIACOM - 2017, International Conference on Computing for Sustainable Global Development, Scheduled from 1st - 3rd March, 2017 at BVCOE, New Delhi.

K. L. Pushkar, R. K. Goel, K. Gupta, P. Vivek, and J. Ashraf, "New VD-DIBA-Based Single-Resistance-Controlled Sinusoidal Oscillator," Circuits and Systems, vol. 13, 7, 4145-4153, 2016.

K.L. Pushkar, G. Singh and R.K. Goel, "CMOS VDIBAs-based single-resistance controlled voltage mode sinusoidal oscillator" Circuits and systems, paper id 7601211, 2017

Akansha Goyal, Sonam Rewari, S.S. Deswal and R.S. Gupta, "TCAD Assessment of oxide impact on linearity and harmonic distortions in Gate All Around (GAA) MOSFET", 3rd international conference on microelectronic circuits and systems 2016, 9-10 July Kolkata, India

Anirudh Sharma, Arushi Jain, Yogesh Pratap and R.S. Gupta, "Effect of High-k and Vacuum Dielectrics as Gate (JL-CSG) MOSFET" Solid state Electronics, vol. 123, 26-32, Sept. 2016.

## Achievement in Sports: Misha Ahuja (ECE IV Year)

Won Silver Medal in Inter-University Discuss Throw Tournament held at GGSIPU main campus dated 20-22nd Oct 2016.

Selected for Nationals in Discuss Throw to play in North Zone by GGSIPU

Selected for Nationals in Kabaddi.

Won Silver Medal in Inter-University Basketball Tournament along with Ms. Shivani Sharma and Ms. Sonya Gulati.

## Placement Details for 2013-17 Batch

163

Students Already Placed

06

Students Got a Package of 7 LPA  
(21 LACS IN 3 YRS BY MUSIGMA)

01

Student Placed in ERNEST &  
YOUNG at 3.80 LPA

03

Students Got a Package of 6.53 LPA  
(BY ZS Associates)

96

Students Placed in Accenture  
(3.5 LPA)

57

Students Placed in Infosys  
(3.25 LPA)

## ALUMNI FOCUS

## Special Achievements of the Alumni

Aahat Mehta (2016 batch) is currently pursuing M.Sc. (Management) at Cass Business School, London, UK

Mohit Lamba (2016 batch) is currently pursuing M.Tech. in IIT Gandhinagar

Sneha Jain (2015 batch) was the university topper and won gold medal.

Abhishek Madan, (2014 batch) secured admission to IIT Delhi for M.Tech. course. While studying at IIT Delhi, he cleared ISRO exam and is now working in ISRO.

Shashwat (2014 batch) got selected in IIT Delhi and is now working in Freescale.

Ajay Shankar (2013), yet another brilliant student of the department, did his masters at IIT Delhi and is now working in the field of Robotics in the U.S.

Vineet Malik (2013 batch) secured 45th rank in IES exam.

Rohit Singh (2012 batch) is now working as Preventive Officer, Kolkata Customs.

Following students of the department are now working in Mentor Graphics: Nikhil Jain (2007), Pawan Gupta (2011), Mohit Arora (2013), Sweetie Goyal (2011) and Nikhil Jain (2014).

Rohit Jain (2011 batch) secured 2nd rank in IES exam.





The official newsletter  
of Department of  
Electronics and  
Communication  
Engineering,  
Maharaja Agrasen  
Institute of Technology

# Spandhan

ISSUE 2 | VOLUME 11 | 2017



Dear Alumni and Friends,

*I convey my best wishes to all of you.*

It is a matter of immense pleasure and pride that Electronics Communication Engineering Department MAIT has shown consistent progress, year after year in academic and co-curricular activities. Its high standard in academics and commitment to quality technical education is reflected by the Alumni and the excellent placement records.

The Academic year 2016-17 started with a new batch of enthusiastic students and numerous curricular and co-curricular activities. The placements in the odd semester (July-Dec 2016) were excellent and details are reflected in this newsletter.

I wish all faculty, staff and students of the department a very Happy and successful New Year ahead. I would also like to add in the words of Ratan Tata

*"I have been constantly telling people to encourage people, to question the unquestioned and not to be ashamed to bring up new ideas, new processes to get things done."*

Prof. (Dr.) Neelam Sharma  
Director & HOD ECE

## In This Issue

- Message from the Head
- Students' Corner
- Alumni Focus
- Research Updates
- IETE Workshop on PSpice
- Special Guest Lecture: Revisiting Human Origin, Studying Archaeological Evidences for Extreme Human Antiquity
- Techtronix Highlights
  - Workshop On Web Development
  - Workshop On Basics of AVR  $\mu$ C
- Seminar On Recent Advancements In Electronics
- Farewell for Batch '17
- Major Project Competition
- Faculty Development Workshop
- Faculty Updates



## RESEARCH UPDATES

Device design has always been the need of the hour as these FET devices are the backbone of the mainstream electronics industry and the mobile industry. With the recent innovations it is desirable these days to manufacture and fabricate miniaturized high speed high voltage low power devices which are more portable and easy to use.

Extensive research work in this field is being done in **Device Research Laboratory (DRL)**, Department of Electronics and Communication Engineering (ECE). Thrust areas include Compact Modelling Of Gate All Around (GAA) MOSFET, Research of Innovative Device Architectures, Reliability Analysis of MOSFET under stressful conditions and Device Applications for various purposes.

Also, at present there is one DRDO project entitled "Analysis and Characterization of Silicon Gate All Around (GAA) Nanowire MOSFET for ULSI circuit applications". Around 20 research papers have been published in International Journal and Conferences since 2015.

### Faculty Publications (2017)

20

International Journal

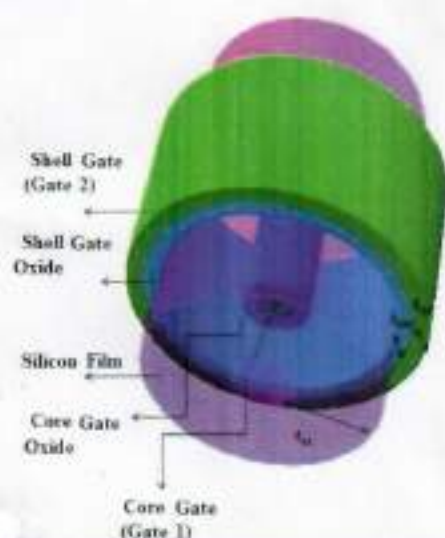
26

International Conference

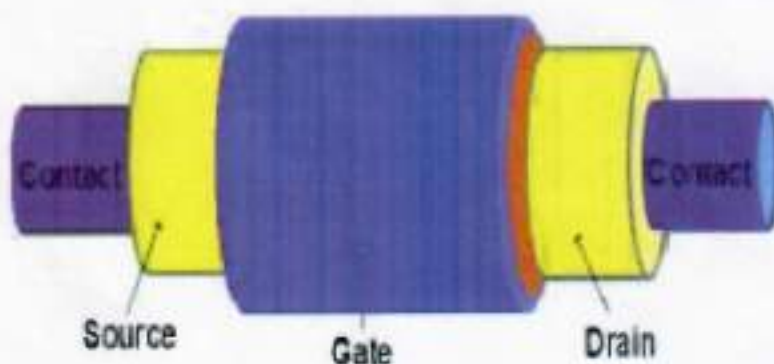
01

National Conference

**Nanotube Junctionless Field Effect Transistor (NJLFET):** It is a MOSFET with an inner core gate GATE1 and an outer shell gate GATE2 with an identical gate work function with silicon dioxide as gate dielectric to provide immunity against S<sub>sc</sub>'s along with improved analog, low noise and RF performance.



**Junctionless Accumulation Mode Cylindrical Surrounding Gate MOSFET (JAMCSG):** JAMCSG MOSFET is the surrounding gate MOSFET is a single-doping-type structure with n+-n-n+ homo-junction and concentration of channel region is low in comparison to Source/Drain region. It has solved the issue of abrupt source-drain junction formation and thermal annealing. It is easier to fabricate as limited doping gradients are required. It also provides improved digital performance at higher frequencies.



## IETE WORKSHOP ON PSPICE



To start the proceedings of IETE STUDENT FORUM MAIT, first workshop on PSpice was held on 14 Feb 2017 from 11am to 1pm in the college premises. The workshop was inaugurated by Prof. (Dr.) Neelam Sharma (HOD ECE Dept.). She briefed the students upon IETE and its benefits. Her enlightening words encouraged students to explore the world of electronics. Then, the proceedings were handed over to Mr. Amit Saxena (Asst. Professor ECE). He discussed various topics starting with basic electronics and then progressed into advanced topics such as ADC, digital image processing and simulations in PSpice. The workshop was attended by 53 students of ECE first year. Mr. Vaibhav Nijhawan (Asst. Professor ECE) and Mr. Naveen Kumar (Asst. Professor ECE) coordinated



# Special Guest Lecture

## Revisiting Human Origin, Studying Archaeological Evidences for Extreme Human Antiquity

A special seminar was organized in the afternoon of 17 February 2017 (at Maharaja Agrasen Auditorium) by BACE society in collaboration with ECE Dept. on the topic, "Revisiting Human Origin, Studying Archaeological Evidences for Extreme Human Antiquity".



The seminar was specifically conducted for first year students of all branches and the event concluded with an interactive question answer session with the students. The speaker for this seminar was Dr. Michael Cremo, famous American Scientist in the field of Archeology. Dr. Michael Cremo is a member of the World Archeological Congress and the European Association of Archaeologists as well as an associate member of the Bhaktivedanta Institute specializing in history and philosophy of science.

Dr. Cremo's ideas on this topic are inspired by his studies in the ancient Sanskrit writings of India, especially the Puranas, which deal with cosmology and history. Some extraterrestrial researchers believe that life evolved on earth as most scientists now say it happened. They say the first single celled organisms self-organized from chemicals a couple of billion years ago. Then came multicellular organisms, first in the ocean, then on land. Gradually the first apes came

into existence, then, a few million years ago, the first apemen (hominins). Around 400,000 years ago, there was the apeman, Homo erectus. Some ET researchers believe that at this point, some extraterrestrials came and manipulated the genes of Homo erectus, thus forming humans like us, Homo sapiens. Dr. Cremo disagrees with this. Archeological evidence, as documented in his book "Forbidden Archeology", shows that humans like us have been present on earth for tens of millions, even hundreds of millions of years, going all the way back to the very beginning of life on this planet. It is crucial to understand that a human being, or any other living thing, is not just a machine made of molecules.

The human body, or any other body, is a vehicle for a conscious self, a soul. This conscious self is not produced by molecules in the brain. It exists independently from matter. It is never created, never destroyed. The conscious self comes from a higher, timeless level of reality. So, in that sense, as

conscious selves, we are all extraterrestrials. We are not from this planet. We are from a higher level or reality, to which we should strive to return. As conscious beings, we have not evolved up from matter, but have devolved, or come down from a higher realm. Dr. Cremo has explained this in more detail in his book Human Devolution: A Vedic Alternative to Darwin's Theory.

Over the past two centuries researchers have found bones and artifacts showing that people like ourselves existed on earth millions of years ago. But the scientific establishment has ignored these remarkable facts because they contradict the dominant views of human origins and antiquity. The research being done by Dr. Michael A. Cremo challenges us to rethink our understanding of human origins, identity, and destiny. It takes on one of the most fundamental components of the modern scientific world view, and invites us to take a courageous first step towards a new perspective.





# TECHTRONIX HIGHLIGHTS

Techtronix, Society of Electronics and Communication Engineering of Maharaja Agrasen Institute of Technology recently conducted two Workshops on "Basics of AVR" and "Web Development" on 27th of March and 3rd of April, 2017, respectively. Both the workshops received a warm response from a large number of students from the first, second and third year of the ECE Department, who attended and actively participated in both the workshops.

The speaker for the first workshop titled 'Basics of AVR' was Rishabh Jain, a student of 3rd year, ECE Department. The two-hour long Workshop was focused at giving basic knowledge about the AVR architecture, performing simulations using the Proteus ISIS software along with coding using Embedded C on the Atmel Studio 6. Students were given hands on experience, where they learned how to simulate LED glowing patterns.

The second workshop was titled 'Web Development', with Abhishek Bansal, a student of 3rd year, ECE Department, as the speaker. This workshop covered HTML and CSS using Sublime Text Editor. Students were introduced to the basics required for designing a web page, after which they individually tried their hand on imitating the index page of the Google search engine.



## Major Project Competition

On 13th June 2017, the department of Electronics and Communication Engineering at Maharaja Agrasen Institute of Technology hosted the project competition organized by GGSIPU, Delhi for all its affiliated colleges/institutes of Electronics and Communication Engineering branch. A total of eight colleges with thirty one teams participated in the competition. A panel of judges from institutes of repute were invited to judge and evaluate the participants. Prof. (Dr.) Maneesha Gupta, HOD, ECE Deptt., NSIT and Prof. M.T. Beg, JMI, chaired the event and were the panelist for judging the same. The response from the students was tremendous.



The judges were flabbergasted by the high standards of projects that were presented and it was indeed a difficult task to select the best three. While MSIT bagged the first position, GTRIT and MAIT secured the second and third positions respectively. The event was a success and was surely a catalyst in encouraging students to contribute in technological research and shaping the tomorrow for the better. The project coordinator Ms. Sonia Jain, invited the Director General Prof. (Dr.) M.L. Goyal to announce the results. Prof. (Dr.) Neelam Sharma, Director/HOD-ECE, welcomed the Director General and they wished the







## SEMINAR ON RECENT ADVANCEMENTS IN ELECTRONICS

A National Seminar on Recent Advancements in Electronics was held on 31 March 2017 in the main auditorium of the Institute. The seminar was conducted by the Department of Electronics and Communication Engineering, Maharaja Pratap Singh Institute of Technology. The seminar consisted of speakers from diverse areas such as academia, industry and defence who gave an insight in the latest developments happening in their respective fields. The seminar was attended by the ECE students as well as the faculty members of the department.

The seminar started with the lighting of the lamp by various dignitaries in front of Mother Saraswati, the Goddess of Knowledge. This was followed by welcome address by Prof. R.S. Gupta, convenor of this National Seminar. Thereafter, Prof. (Dr.) Neelam Sharma, Director & HoD, ECE Dept, addressed the audience. She started her address by thanking all the speakers for giving their valuable time. She also thanked Dr. R. S. Gupta for arranging the sponsorship by the Society for Microelectronics & VLSI a IEEE-EDS Delhi chapter. Then, Dr. M. L. Goyal, Director General, MAIT, talked about the need to stay updated about the current advancements in the field of Electronics and Semiconductors. He remarked about the changing nature of technology and the scale of development from 1965 to 2017. He talked about the remarkable achievements in size, speed, capacity, cost, reach, quality, power consumption and ease of operation in various consumer electronic devices of today. Dr. Sunil Mathur gave vote of thanks and once again thanked all the speakers for sharing their knowledge and giving their valuable time. He thanked Director General, MAIT for his cooperation and constant support. He also thanked all the faculty members and staff for their contribution in organizing the seminar.

The first talk in the seminar was of Prof. Anurag Sharma, HoD, Physics, Indian Institute of Technology Delhi. He gave a

many important discoveries such as Astronomy, Medical Sciences and Physics etc. He talked about the history of LASERS and how LASERS have made a very important contribution in our lives and in technologies. He also talked about Holography and how it works. In the end, he touched upon fiber optics and how it has been changing the way we communicate.

The second speaker was Dr. (Mrs.) Sellammal Shekhar, Associate Director ER & IPR, DRDO. She gave a lecture on "Electronic Warfare and Defence". She first explained the concept of electronic warfare and also laid down the objectives of electronic warfare. She explained about different types of Electronic Warfare such as Electronic Attack, Electronic Counter-Counter Measures and Electronic Support Measures. She talked about the need for a nation to have an electronic warfare capability.

The third speaker was Mr. Ish K. Bhargava, Managing Director, India Operations & Founder, Spectross Digital Systems Pvt Ltd. He gave a lecture on "High Performance Reconfigurable Computing". He started his lecture by explaining the various types of processors available such as CPU, GPU and FPGA. He then talked about the advantages and applications of FPGA in high speed computing and the ease of re-programmability of the FPGAs. He also showed the students the FPGA based computer his company had developed. In the end, he requested the students to take part in research activities targeted toward making India an electronics hub.

The fourth and the final speaker were Dr. R. K. Sharma, Director, Solid State Physics Laboratory, DRDO. He gave a lecture on Indigenous Semiconductor Technologies for Defence Applications. He showed the various products that SSPL laboratory has developed such as Transceiver Modules, High Speed Data Links, Directed Energy Weapons Components. He talked about the cutting edge research in the laboratory which is being supervised by him. He informed the audience about the latest GaN technology and how it was widely replacing other technologies in diverse fields. He also showed the various machines necessary for the fabrication of the ICs in the laboratory. In the end, he motivated the students to join DRDO after completing their education and thus to contribute in nation building. The entire seminar was jointly anchored by Ms. Sonia Jain and Ms. Vatsala Khanna Arya, faculty members, ECE Department.

## ECE Department Farewell

Farewell for the ECE department was held on the 5th of May 2017. The Event started with Mrs. Vatsala Khanna, Assistant Professor, ECE extending a warm welcome to all the students and teachers.

The event began with lighting of the ceremonial lamp and with an ode to Goddess Saraswati. Our chief guests Sh. Sunder Lal Gupta, Sh. Gian Chand Aggarwal, Sh. Satnarain Garg, Director General, Director, Dean and Heads of all departments were felicitated with bouquets. A welcome address was given by our Head of Department, Dr Neelam Sharma. She thanked all the third and fourth year students to make the event a reality; she hoped that the four years spent in the college would be remembered fondly by the students. Our Director General Dr. M.L. Goyal congratulated the students that they would soon become engineers and asked them to be at the top of their game every time. Sh. Gian Chand Aggarwal and Sh. Satnarain Garg also motivated the students with their thoughts. Dr R S Gupta urged students to perform to their fullest potential and gave them some tips to survive in a corporate world.

Before starting with the ceremony, the cake was cut, which was enjoyed by students and teachers alike. A short film made by the third year showcased the journey of their seniors through the four years. Next were a series of beautiful song and dance performance by the third and fourth year. It consisted of a fusion dance performance, many hilarious dance performances by fourth years., soulful music performances with popular songs such as Channa Meraya. There was also a very emotional speech by a student of the outgoing batch. Sashes were given to the deserving student of the



# Faculty Development Program

A five day Faculty Development Program on Electronic Design and Automation Tools, from 12th June 2017 to 16th June 2017 was organized by the Department of Electronics and Communication Engineering. The idea of the program, so organized, was to enrich the faculty members with the changing and ever developing technological scenario in the field of electronics. The experts from various platforms and with a substantial experience in their area of expertise enlightened the participants with their knowledge and experience. The program covered the most widely used aspects which included the programming tools used in electronic design and automation of various circuits and modules like:

- VHDL for Digital System Design
- SILVACO for VLSI Design
- PYTHON for Signal Processing and Big Data Handling
- ARDUINO for Micro-Controller
- Scilab for Signal/Image Processing

The experts who delivered the talk were:

- Mr. Sandeep Gupta, M.Tech, IIT Delhi
- Ms. Sonam Rewari, MAIT, Delhi
- Mr. Rakesh Gupta, B.Tech, IIT-Delhi, MS SUNNY USA
- Mr. Pulkit, M.Tech, IIT-Delhi
- Mr. Devender Khari, M.Tech, BITS Pilani
- Dr. Neeru Rathore, MSIT, Delhi
- Ms. Rajni, MAIT, Delhi



## FACULTY UPDATES

### Prof. Neelam Sharma

Rakesh Kumar Saxena was awarded Ph.D degree in Fast Computing Using Signed Digit Numbers under the supervision of Prof. Neelam Sharma in May 2016.

### Prof. R. S. Gupta



Mr. Yogesh Pratap has been awarded Ph.D degree under the supervision of Prof. R. S. Gupta from University of Delhi in March 2016.

Prof. R.S. Gupta has delivered keynote address on "Evolution of VLSI & VLSI Design" on April 23, 2016 during National Conference on Recent Advances in Engineering & Technology for Skill India organized by Corporate Institute of Science and Technology, Bhopal.

Prof. R.S. Gupta has been elected chairman IEEE EDS Delhi chapter for a period of two years.

Prof R.S. Gupta has been reelected chairman society for Microelectronics & VLSI,

### List of Faculty Pursuing Ph.D.

Mrs. Divya Goyal,  
Mrs. Sonam Rewari  
Mr. Ajay Kumar Garg  
Mr. Himanshu Khanna  
Mr. Javed Ahmed  
Mr. Amit Saxena  
Mr. Nitin Sharma  
Mr. P.K.Sinha  
Mrs. Anubha Goel





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