



# Spandhan

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



*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 2017-18 started with a new batch of enthusiastic students and numerous curricular and co-curricular activities. The placements in the odd semester (July-Dec 2017) were excellent and details are reflected in this newsletter.*

*Dr. Sunil Kumar  
HOD ECE*

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# Industrial Visits

1. MTNL (Mahanagar Telephone Nigam Ltd.) ITTM, Shadipur, New Delhi on 5th September 2017 by 5 Faculty members of ECE Deptt., 35 students of IVth and VIth Semester, ECE
2. Honda Cars Pvt. Ltd., Greater Noida on 27th October 2017 by 5 Faculty members of ECE Deptt., 44 students of IVth and VIth Semester, ECE

## Industrial Visit To MTNL

Industrial visit was carried out at MTNL (Mahanagar Telephone Nigam Ltd.) ITTM, Shadipur, New Delhi on 5th September, 2017 especially for ISF MAIT Members by ISF MAIT. The goal of the industrial visit was to achieve better understanding and practical exposure of Mobile Communications Systems. Mahanagar Telephone Nigam Limited (MTNL) is a state-owned telecommunications service provider in the metro cities of Mumbai and New Delhi in India. MTNL provides fixed line telephones, cellular connection of both GSM Dolphin (Postpaid) and Trump(prepaid) and CDMA—Garuda-FW And Garuda-Mobile and internet services through dialup and Broadband internet-TriBand.

Total of 35 students were part of this industrial visit. Everyone gathered at entrance gate of MTNL ITTM Building including faculty members. We were further assisted by MTNL Staff.

All the students were seated in presentation room, where Senior Manager Mr. Khanna had a introductory talk with all the students about working of MTNL. Then we were taught about the GSM(Global System for Mobile communication), types of antenna's and there applications. After this all the students were taken to a lab for showcasing an In building solution for network connectivity .

Second lecture was taken in a round table conference room where we were taught about Optical fibrecable, broadband connectivity ,switching. After the lecture everyone was taken to switching unit and broadband unit where actual working of these units were shown.

We took almost 3 hours to see various units at MTNL ITTM which was followed by questions/feedback of students. We appreciate staff member who guided students with each and every question with detailed answers.

We would like to extend our gratitude to company for permission and support they gave to make our visit a success with accomplishment of objective and our Faculty members Ms. Anubha, P. K. Sinha for arranging this visit for student.



# Industrial Visit to Honda Cars Pvt. Ltd, Greater Noida

On 27<sup>th</sup> October, our college has organised an industrial visit to Honda Cars Pvt Ltd, Greater Noida for students of ECE department. Strength of 44 along with the 5 faculty members visited the manufacturing plant of Honda. Students were first taken to workshop of the company along with the member of HR department, where they brief out the different stages used in making a car which included of welding, painting, assembly frame, engine assembly, vehicle quality, etc. They also explained the complete layout of their workshop. Students asked many questions from the manager based on different manufacturing processes, plant layout, etc and were answered by them very patiently. It was good to be there as we have got a chance to see how a car is being made and reaches us.





# SEMINAR ON RECENT DEVELOPMENTS IN ELECTRONIC MATERIALS AND DEVICES

A National Seminar on “Recent Developments in Electronic Materials and Devices” was held on 10th and 11th November 2017. It was organized by the Department of Electronics and Communication, Maharaja Agrasen Institute of Technology and was sponsored by Society for Microelectronics and VLSI, IEEE-EDS Delhi Chapter and Defence Research and Development Organisation.

The Seminar commenced with the welcome address by the Director and Head of Department, Electronics and Communication, Prof. Neelam Sharma. She welcomed the Founder and Chief Advisor Dr. Nand Kishore Garg, Chairperson of Maharaja Agrasen Technical Education Society Sh. Prem Sagar Goyal, all the members of the management of Maharaja Agrasen Technical Education Society, Sponsors, Director General M.L. Goyal, Prof R.S. Gupta, faculty members and students. Prof. R S Gupta, Convener of the seminar addressed the audience on the occasion and briefed about the speakers and the sponsors of the event. Chairman, MATES, Sh. Prem Sagar Goyal, in his address inspired the students to benefit from the Seminar. Founder and Chief Advisor, MATES, Dr. Nand Kishore Garg, a guiding personality for all advised the students to learn from the eminent speakers for their future endeavors. Director General MAIT, Dr. M.L. Goyal in his address explained the importance of keeping abreast with the latest technologies and trends in electronics to be competitive. Dr. Sunil Mathur delivered the vote of thanks.



The two day schedule of the seminar was as follows:

## Day 1 Session I:

Name of the Speaker: Prof. Vijay Arora

Topic: Graphene Nanotechnology–Past, Present and Future

Prof. Vijay Arora from Wilkes University, USA, explained the history and basics of Graphene technology in his talk. He spoke about the various properties and uses of the material. He also discussed about the possible applications of Graphene and updated the students with the ongoing research in this area.

## Day 1 Session II:

Name of the Speaker: Prof. S. S. Islam

Topic: Multi-sensory Microsystem for Early Detection of Chronic Obstructive Pulmonary Disease (COPD)

Prof S.S. Islam, Director, Centre for Nanoscience and Nanotechnology, of Jamia Milia Islamia University discussed in his talk about how electronics can help in targeted delivery of drugs and how electronics was helping in effective analysis of COPD.

## Day 1 Session III:

Name of the Speaker: Dr. Seema Vinayak

Topic: Overview of GaN Technology

Dr. Seema Vinayak from SSPL, DRDO explained in her lecture the properties of Gallium Nitride (GaN) Technology and the ways it was useful in the defence sector. She explained about the potential uses of GaN in High power and High Frequency Applications.

#### Day 1 Session IV:

Name of the Speaker: Dr. Ramachandran Raman

Topic: The Role of Characterization to Semiconductor Material Research

Dr. Ramachandran Raman from SSPL, DRDO explained in his talk the various techniques which were used to make as well as study the properties of semiconductors such as Raman spectroscopy, electron microscope and X-ray techniques. He also explained the various ways in which semiconductors can be made.

#### Day 2 Session I:

Name of the Speaker: Prof. Mridula Gupta

Topic: Wireless and Mobile Communication 1G to 5G

Prof Mridula Gupta in her lecture discussed the development of the various generations (1G to 5G) of mobile wireless technology along with their significance and advantages of one over the other.

#### Day 2 Session II:

Name of the Speaker: Dr. Yogesh Pratap

Topic: Impact of Material Engineering in FET based Devices

Dr. Yogesh Pratap is Assistant Professor of Department of Instrumentation at Shaheed Rajguru College of Applied Sciences for Women, University Of Delhi. Dr. Yogesh Pratap discussed in his presentation the Principles and Applications of Nanowire Field Effect Transistors with gate Material and Advance Channel engineering.

The seminar was informative and helped the students get up-to-date with the latest technologies and trends in the Industry. It inspired the students to work hard and pursue research as an option.

## MINI COLLOQUIA ON "INSIGHTS OF EMERGING NANOSCALE RESEARCH DEVICES"

A Mini Colloquia was jointly organized by IEEE EDS-Delhi Chapter and Department of Electronics and Communication Engineering, Maharaja Agrasen Institute of Technology (IP University, New Delhi), Rohini, New Delhi, India on "Insights of Emerging Nanoscale Research Devices" on December 11, 2017 at Maharaja Agrasen Institute of Technology Rohini, New Delhi which was supported by IEEE Electron Devices Society.

The Seminar commenced with the welcome address by Director, MAIT, Prof. Neelam Sharma. She welcomed the distinguished speakers Prof. R. P. Jindal, Prof. Bin Yu and Prof. Vijay K. Arora, the organizing committee Prof R.S. Gupta, Chairman, IEEE-EDS Delhi Chapter, Dr. Subhasis Haldar, Vice Chairman IEEE-EDS Delhi Chapter, Dr. Sneha Kabra, Secretary, IEEE-EDS Delhi Chapter, Dr. Manoj Saxena, EDS SRC Vice Chair-Region 10, Prof. Mridula Gupta, Former Chairperson, IEEE-EDS Delhi Chapter, distinguished guests and faculty members. Prof. R S Gupta, Chairman, IEEE-EDS Delhi Chapter addressed the audience on the occasion and briefed about the speakers and the sponsors of the event. He explained the importance of keeping abreast with the latest technologies and trends in electronics to be competitive. Prof. Mridula Gupta, Former Chairperson, IEEE-EDS Delhi Chapter delivered the vote of thanks.





The schedule of the seminar was as follows:

#### Session I:

Name of the Speaker: Prof. R. P. Jindal

Topic: Noise Performance challenges for MOS devices at nanoscale channel lengths

Prof. R. P. Jindal, Fellow, IEEE, Vanderziel Institute of Science and Technology, LLC, Princeton, NJ, USA discussed refinements in the device structure that have led to improvement in the noise performance by suppressing the effects of extrinsic noise mechanisms in MOS devices.

#### Session II:

Name of the Speaker: Prof. Bin Yu

Topic: 2D Carbon/Semiconductor: Materials, Devices, and Interconnects

Prof. Bin Yu, IEEE Fellow & IEEE EDS Distinguished Lecturer, State University of New York discussed graphene (two-dimensional carbon sheet) and its derivative material systems that have received significant amount of research interests from both academia and industry

#### Session III:

Name of the Speaker: Prof. Vijay K. Arora

Topic: Ohm to Arora: A New Paradigm for Nanoscale Devices and Circuits

Prof. Vijay Arora from Wilkes University, USA, discussed the paradigm shift from Ohm's Law. The experimental nonlinear I-V characteristics, when voltage across the length of a resistor is higher than its critical value, defy ohmic and ballistic transmission through a nano-resistor. Arora's Law embraces well the Ohm's Law when applied voltage is smaller than the critical voltage. He discussed the ongoing research in this area.

The seminar was informative to all and introduced the latest technologies and trends in the Industry at a global level.

## STUDENTS' CORNER

### University Toppers

(Within Top 100)

#### Batch of 2016

Dhruv Pandey, Manik Sethi,  
Sudipto Saha, Gaurav Goel,  
Himanshu Seth, 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

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

#### Batch of 2018

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

### List of Publications

1. K. L. Pushkar and K. Gupta, "MISO-type voltage-mode universal biquadratic filter using single Universal Voltage Conveyor," Circuits and Systems, ID: 7601237, 2017, ISSN 2153-1293.
2. Akshat Malik, Abhilasha Gokhale and Neelam Sharma, "Fast Computing using Redundant Binary Signed Digit Adders", INDIACOM-2017, 4th International Conference on Computing for Sustainable Global Development, 1st-3rd March, 2017, BVICAM, Paschim Vihar, New Delhi.
3. Akshat Malik, Abhilasha Gokhale and **Neelam Sharma**, "Performance Analysis of Signed Digit Adders", 3rd International Conference on VLSI, Communication and Network (VCAN-2017), 10th-11th March, 2017, IET, Alwar.
4. Reibhu Sant, **Neelam Sharma** and Abhilasha Gokhale, "Energy Crisis and the Next Step Forward", 3rd International Conference on VLSI, Communication and Network (VCAN-2017), 10 th – 11 th March, 2017, IET, Alwar.
5. Akshat Malik, Abhilasha Gokhale and **Neelam Sharma**, "Fast Adders: Timing, Layout and Cost Comparison", 5th International Conference on Engineering and Technology
6. Praween Kumar Sinha, Himani Dhir, **Neelam Sharma**, Shubham Jindal "Realization Of Grounded Inductance And Capacitance Using Current Feedback Operational Amplifier And Its Application" International Journal of Electronics, Electrical and Computational System (IJECS), ISSN 2348-117X, Volume 6, Issue 2, February 2017, Page 96-101.
7. "Fast Adders: Timing, Layout and Cost Comparison", Akshat Malik, Abhilasha Gokhale and **Neelam Sharma**, International Journal of Electronics, Electrical and Computational System (IJECS) ISSN 2348-117X, Volume 6, May 2017. Science and Management Innovation (ICETSMI - 2017), 30th April, 2017, IETE, Lodhi Road, New Delhi

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 **IIIT 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 IIIT Delhi and is now working in **Freescalce**.
- Ajay Shankar** (2013), yet another brilliant student of the department, did his masters at **IIIT 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), **Sweetey Goyal** (2011) and **Nikhil Jain** (2014).
- Rohit Jain** (2011 batch) secured **2nd rank in IES exam**.
- Upika Mittal** (2010 batch) is now working as **scientist** at **DRDO** Delhi.
- Vishal Gulati** (2009) and **Pradeep Gupta** (2011) are now working in **Synopsis**, Noida.

ACHIEVEMENTS OF THE DEPARTMENT

1. The department of Electronics and Communication Engineering hosted the project competition organized by GGSIPU, Delhi on 13th June 2017 for all its colleges/institutes of ECE branch at MAIT. A total of eight colleges with thirty one teams participated in the competition. Prof. (Dr.) Maneesha Gupta, HOD, ECE Deptt., NSIT and Prof. M.T Beg, JMI, chaired the event and were the panelists for judging the competition. Damanpreet Singh Walia from MAIT won the third prize.
2. A souvenir was printed by the department of ECE on the occasion of the seminar organized on “Recent Developments in Electronic Materials and Devices” which was held on 10th -11th November 2017. The souvenir was sponsored by PJ Networks Pvt. Ltd., 3ST Technologies Pvt. Ltd., Silicom Electronics (p) Ltd., DKOP Labs and Excel Technologies.
3. Department of ECE has purchased HFSS Software worth Rs 5.5 lakhs which can be accessed by 25 users. Also new kits have been purchased for Communication Systems lab and Analog Electronics lab.

Faculty Publications (2017)

|    |                          |
|----|--------------------------|
| 34 | International Journal    |
| 26 | International Conference |
| 01 | National Conference      |

FACULTY UPDATES & ACHIEVEMENTS

Prof. Neelam Sharma

Prof. Neelam Sharma Received an award of Rising Women of India by Ex Governor at Indian Habitat Center Delhi by FFI.



Prof. R. S. Gupta

Prof. R.S. Gupta from ECE Department received a grant of Rs 32.60 lakhs from DRDO as Principal Investigator for their project on “Physical Modeling of Gallium Nitride High Electron Mobility Transistor (GaN-HEMT) With Field Plate Structure For High Power High Frequency and Highly Efficient Power Amplifier.



List of Faculty Pursuing Ph.D.

- Mr. P.K.Choudhary  
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





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