The background is a vibrant purple space scene. It features several yellow stars of varying sizes, a bright yellow sun or star in the upper left, and a large orange planet with a prominent blue ring system in the upper right. The background is filled with white, curved motion lines that create a sense of depth and movement.

**DR. AKHILESH DAS GUPTA
INSTITUTE OF TECHNOLOGY
& MANAGEMENT**

LECTRON

July, 2018 - July, 2019

A stylized, purple robot with two antennae and a red heart on its chest. The robot is holding an open book with yellow pages and a purple bookmark. The robot is standing on a green, leafy base. The background behind the robot is a dark purple gradient.

**ELECTRONICS AND
COMMUNICATION
ENGINEERING DEPARTMENT**

Our Patrons



Late Shri Babu Banarasi Das Ji



Late Dr. Akhilesh Das Gupta



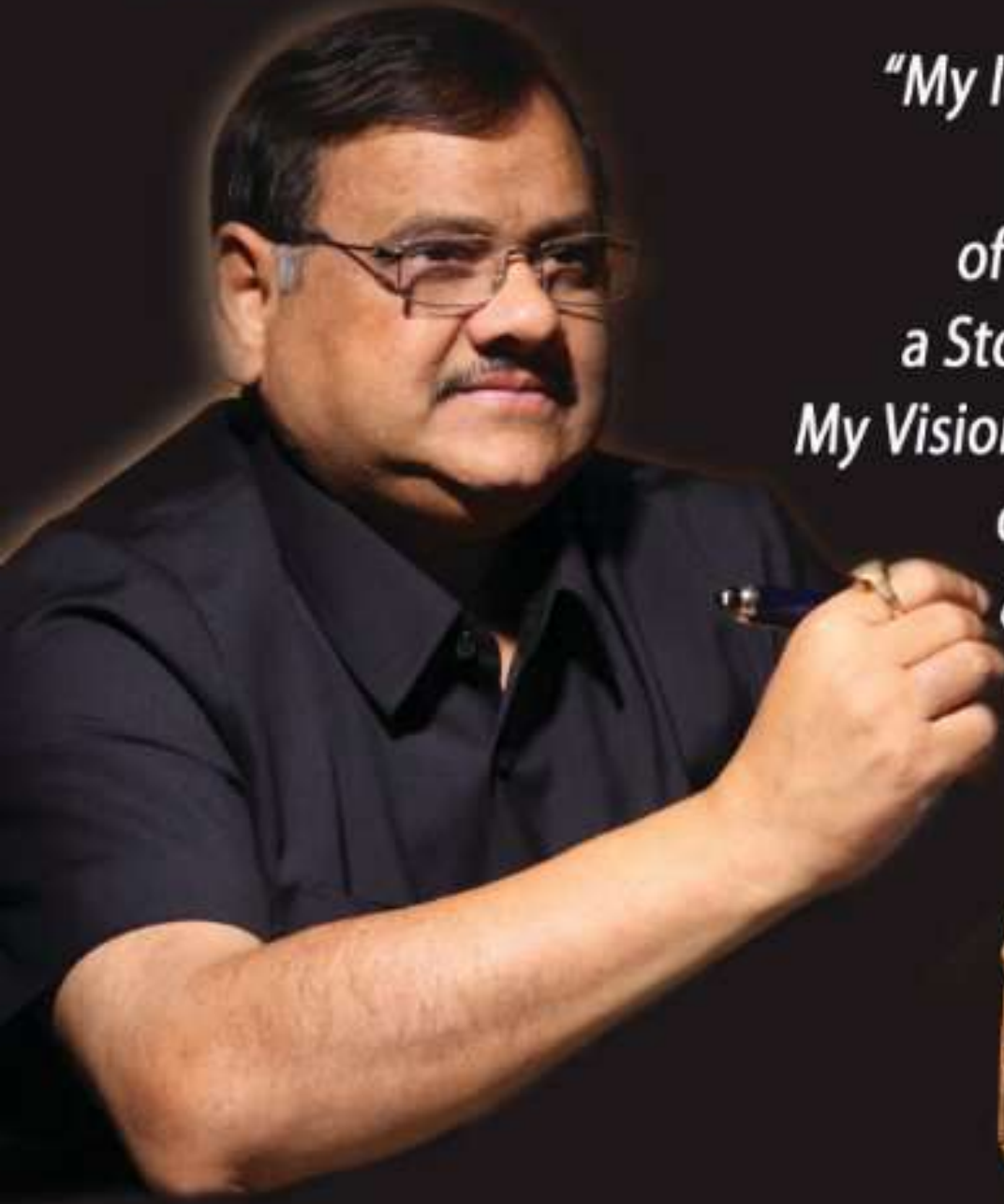
Mrs. Alka Das Gupta



Mr. Viraj Sagar Das Gupta



AKHIL JYOT



*"My Idea of a Society
is a River
of Education &
a Storm of Success.
My Vision of life is an Ocean
of Learning
& a Tide of
Humanity"*



शत शत नमन

Mrs. Alka Das Gupta

Chairperson
BBD Group of Education



Message from Chairperson

The Department of Electronics And Communication Engineering has always been the gem of the Dr. Akhilesh Das Gupta Institute of Technology and Management. The perennial zeal of the Department has never left the achievements stagnant. The Department not only gives students the exposure to the regular engineering curriculum but also to the aspirations of today's corporate world, thus inculcating a professional aptitude in them. The dedication of the faculty members has strengthened the learning process ensuring an environment of collaboration, experimentation, imagination, and creativity. It is such a prodigious delight in watching the students cutting edge in technical exploration, enhancing their analytical skills and brushing themselves up for the rapidly changing sector, and establishing themselves as entrepreneurs and engineers.

The Department has always reached new heights and I am looking forward to more wonders and achievements. I wish the very best to the Department of ECE for the launch of the **LECTRON**, the official technical magazine of the Department. The magazine beautifully provides an overview of academic programs, research activities, various laboratories, training and the other fields explored by our faculty members and students.

Mr. Viraj Sagar Das Gupta

President, BBD Group



Message from President

I am extremely happy to witness the shaping up of the next volume of **LECTRON**.

A special mention to the Editorial Board, who were able to capture the noteworthy proceedings of the ECE Department of Dr. Akhilesh Das Gupta Institute of Technology and Management and were also able to present it in an alluring manner. I thoroughly enjoyed myself going through the pages of this technical magazine.

This issue of the technical magazine is an insight to what campus life truly means, the surfeit events together represent the opportunities that one can take and augment their personalities up to the brim and be glorious predominantly.

I hope students and faculty members find this Edition as sound as I did. I congratulate the Department and the Editorial Board for this achievement.

Shri S. N. Garg

Chief Executive Officer



Message from CEO

Even after so many batches passing under my supervision, the joy and happiness remain constant. ADGITM is exemplary both from the point of view of merit as well as from the placement perspective. Our students have been placed in the best organisations of the country and we strive to maintain such decorum by which the students are benefited the most. With an aim to remain quality conscious, ADGITM has put in efforts for providing the best industrial exposure along with a professionally ethical environment, where one can develop himself / herself on multiple levels. As technology is advancing at a very rapid rate, we have an experienced and well-qualified faculty panel to adjust to the market requirements and guide the students as and when required. The only way to become technically stimulated is by receiving the proper exposure to the world and that is what we inculcate in our students. Our institution is technology-friendly and we don't restrain students from experimenting new technologies and work styles, that is how we inculcate self-reliance and tech-savvy mind.

Prof. (Dr.) Sanjay Kumar

Director, ADGITM



Message from Director

"Engineering is not only the study of the technical subjects, but it is about living an intellectual life."

As the Director of Dr. Akhilesh Das Gupta Institute of Technology and Management, I strongly believe that education is not only about imparting knowledge but more about opening the individual's mind to self-expression. I have been personally encouraging students to develop an overall sensibility and awareness. Encouraging them to, not try, but make it happen. I saw an overwhelming response by the students in not only technical domain but also in the branch of sports, art, dance, photography, music and a lot more. Students are our partners in our mission to set a new benchmark in the field of engineering. I am confident that with such a positive and progressive attitude they would be able to justify the credibility of the Department as well as the college by bringing laurels and what not.

I am immensely proud to observe a team of such enthusiasts. The next volume of the technical magazine of the Department of Electronics and Communication Engineering - **LECTRON**, has been able to make a count of all the achievements, hard work and dedication of the faculty members and students alike. I wish them luck.

Dr. Yamini S.

Principal, ADGITM



Message from Principal

When it comes to the real world, everybody needs to be a go-getter. The onus of our institution is to enable the students not only to adapt to changes for the betterment of the society but also be the catalyst to make it more equitable. Dr. Akhilesh Das Gupta Institute of Technology and Management believes in this maximand the institution has always worked to provide quality education.

We believe that the best way to learn something is actually by doing it, therefore practical education is of utmost importance to us which makes the students well fortified with contemporary techniques and innovative practices.

Our staff is highly committed and dedicated to provide an environment where one can freely think and burgeon their persona and also to help them encourage others to bloom.

The ADGITM family will stay united to bring glory to the institution and serve for the betterment of the society.

One of my beliefs is a very famous quote by Albert Einstein that still motivates brilliance, "Never regard study as a duty, but as the enviable opportunity to learn".

Prof. (Dr.) Rajiv Sharma

HOD, ECE Department



Message from HOD

A child's psychology is the most difficult to understand. We at Dr. Akhilesh Das Gupta Institute of Technology and Management believe in imparting quality education to the students at a level where they can easily retain the knowledge and clear their basics to the pinnacle. Our staff members have been incessantly redefining the standard of erudition in a manner through which the students are equipped to face the challenges of future with their technical proficiency and scientific knowledge. The institution is highly esteemed with reference to its innovative endeavours, keen involvement and exceptional merit. I am proud to be a part of an institution that believes in putting the education of the students beyond everything. Igniting the youth with knowledge, life skills and ethics, we develop the students into confident, persuasive and practically insightful individuals. We encourage and imbibe them the lessons of self-reliance and discipline by letting them to take up multiple roles in different aspects of life. I extend my heartfelt congratulations to ADGITM, Delhi for being successful in producing strong individuals who believe in scripting stories of success with their unflinching resoluteness and indomitable will power.

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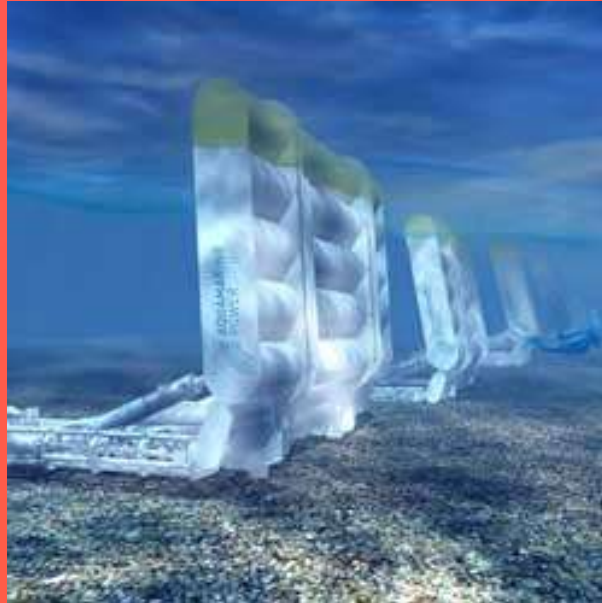
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About ECE Department



The Department of Electronics and Communication Engineering is committed to render-quality and professional pedagogy to pioneering engineers. The ECE department provides opportunity for the students to learn and fulfill the industry demands of Communication Engineering. The Department has state of art equipment, in various laboratories which is necessary to blend the theoretical & practical aspects of engineering. The Department offers Under-Graduate program in Bachelors of Technology. The Department has faculty members having expertise in wide variety of fields in Electronics & Communication. The department has a strong industry institution interaction.

ABB invests in Renewable Energy Company



ABB, the global power and automation technology group, announced today it has invested about \$13 million in Aquamarine Power, a Scottish company that has developed technology to convert energy captured from waves near shore into clean, usable electricity.

The investment gives ABB access to another renewable energy technology, and provides an entry into the emerging marine energy market, where ABB has considerable pull-through sales potential for its power systems, power electronics and medium-voltage drives.

"This strategic investment gives ABB an early-mover advantage in our wave energy technology, while we gain access to ABB's technical, research and engineering expertise and global supply chain network," said Aquamarine Power CEO, Martin McAdam. ABB Technology Ventures invests in strategically interesting early and growth stage companies. To date, investment areas include smart grid communications, cyber security for utilities, data center power optimization and wind farm efficiency.

Resources: electrical-engineering-portal.com;

Article by: Edward Csanyi

Student Achievements

**National Sustainability Case challenge, BIMTECH
International level - 9th Position**

19th Jan,2019

Yogyata Jindal, Shagun Saboo

E-YANTRA, IIT Bombay

National Level Robotic Competition - Selected for finals

22nd March,2019

Varun Pandey, Akshay Sharma, Bhaskar Dutt, Deepanshu Singh

RoboRugby, MSIT - Second

9th January, 2019

Aman Puri, Sumneet Kaur, Pranav Gupta, Saurabh Saigal

HackVSIT , VIPS - Special Mention

17th-18th February, 2019

Aman Puri, Sumneet Kaur

Arduio Day Hackathon,BVP - Second

16th March, 2019

Aman Puri, Sumneet Kaur

Robo Soccer, GTBIT - First

28th March, 2019

Aman Puri, Saurabh Saigal



Student Achievements

Fastest Line Follower (International Competition)

Thyagaraj Sports Complex, New Delhi
Hardik Gossain, Mohd Fahad Ali

World IOT Hackathon, Chandigarh University - Participation

8th-9th March, 2019
Zorawar Singh Jaiswal, Sumit Kathuria

HackOver, BVP - Participation

11th March, 2019
Saurabh Saigal, Vaibhav Gupta, Zorawar Singh Jaiswal

HackOver, BVP - Top 5

11th March, 2019
Aman Puri, Sumneet Kaur

Arduio Day Hackathon, BVP - Participation

16th March, 2019
Zorawar Singh Jaiswal, Devjot Singh, Pranav Gupta

HackNSUT, NSUT - Participation

30th-31st March, 2019
Aman Puri, Zorawar Singh Jaiswal, Pranav Gupta

HackOverFlow 2.0, Chandigarh University - Participation

5th-6th April, 2019
Aman Puri, Zorawar Singh Jaiswal, Pranav Gupta, Shubhang Semalty,

Student Achievements

Robo Maze, GTBIT - First

28th March, 2019

Aman Puri, Saurabh Saigal

Troika(Line Follower),DTU - First

13th Feb 2019

Hardik Gossain

Avensis(Robomaze),MSIT - First

Jan 2019

Hardik Gossain

Avensis(Line Follower),MSIT - Second

Jan 2019

Hardik Gossain

Techkriti(Embedded),IIT Kanpur - First

March-19

Mohd Shayan Khan, Hardik Gossain, Jai Garg, Aditya Agrawal

IRSC Hackathon, IIT Guwahati Second

March 2019

Hardik Gossain, Aditya Agrawal, Shridhi Aggrawal

Vikiran(Line Follower),DTC - First

March 2019

First Hardik Gossain, Devansh. Anand Baghel, Diksha Tuli

Lecture on Quantitative Aptitude



The talk held on 17th January, 2019 by Mr. Ankit Gaur, the C.E.O of AnkGanit Solutions Pvt. Ltd., the most elite aptitude preparation institute for the CAT, GMAT, GRE and other entrance tests. This session aimed at introducing the 3rd year students to the basics of aptitude questions and increasing the numbers of placements by making the students aware of the ease of solving aptitude questions by common sense and reducing the solving time. The major topics of discussion being Probability, Percentage and time, distance and speed. The talk boosted the morale of the students and motivated them to follow a more realistic and procedural approach to solving Aptitude problems.

“THINK AND RESEARCH”

Research paper writing session

The session was started by Mr. Apoorv Arora with a very informal and casual discussion on “what exactly does research mean”. He explained the students how to think on a project and how to use resources judiciously. He further explained the students how he started his approach in this field.

Mr. Aakash Bansal continued the session with explanation on how to develop interest and aptitude, how to read and publish papers, networking and team building and also some communication techniques. He also got into some basic skills like telephonic conversations, writing emails, time management, defining goals, recommendations, applying abroad.



Industrial Visit to Deki Electronics

The main objective behind this visit organised on March 15th was to expose the students towards Industrial environment and provide them an insight to how industrial quality capacitors are made. Deki Electronics is a leading manufacturers & suppliers of Radial Type Capacitor, IGBT Snubber Capacitor, AC/DC Capacitor, DC Link Capacitor, Horn Capacitor in Delhi / NCR, India. The plant and machinery are largely imported from Europe, Japan, Taiwan and Korea and every effort to maintain them in the most efficient health is made. The entire maintenance, capital goods and spares development is handled by an Engineering Solutions. The whole visit lasted about 1-2 hours. In short according to students it was "Memorable and Interesting Trip to Deki Electronics Ltd". We highly recommend it. Students were accompanied by Dr. Sandeep Sarowa and Mr. Devraj Gautam (Assistant Professor ECE).



Workshop on Basic Electronics and Arduino Interfacing



The workshop held on March 7th, 2019 organised by Sumneet Kaur, Aman Puri, Zorawar Jaiswal, Devjot Singh, Pranav Gupta, Maninder Bir Singh Gulshan and Bhaskar Dutt (3rd year students) aimed to make the students future ready with prototypes and enhance their thinking skills with a brainstorming session. The students were given a basic idea of the current innovations being worked upon and a thorough knowledge of Electronics and Arduino interfacing through various sensors and their usage was applied with the circuit knowledge. The session was made an interactive one by indulging the students to fabricate a practically implementable system based on the knowledge provided throughout the workshop.

Lecture on Startups and IT based Entrepreneurship



This lecture helped the students in achieving their goals in a particular field they want to grow by providing them the right platforms, explaining power of IT and how to become a creator in their field. A lecture was organised by the department to create awareness and enlighten the first year students regarding the same on 15th February. Our honorable speakers Mr. Darpan Tikiya (Start-up expert at Aspire World Imaginations Pvt. Ltd.) and Mr. Mayank Thakur (CEO and Chairman, Aspire World Imagination Pvt.) talked about guaranteed practical exposure with the international and national aids for working towards their goals. How can they be a contributor to the society, how they could achieve their dreams and made the believe that they can be creator instead of being a part of the crowd.

Lecture on Internet of Things



He shared his knowledge and area of interest in the field of IoT with the students encouraged Entrepreneurship amongst them.

The 1st, 2nd and 3rd year students got to know about this emerging trend and were fascinated by the concept of IoT, its wide applications and growing job opportunities in the field of IoT. It made students aware of various dimensions of IoT and how it can automate our day to day lives.

Faculty Development Program on Wireless Propagation

The objective of this course was to train and upgrade the knowledge of faculty in the area of Wireless Propagation which funded by NITTTR Chandigarh (MHRD, Govt. Of India) and was attended by all the faculty members of ECE department. The various topics that were discussed during the week long FDP were Multipath Channel Concepts, Multipath Channel characterization, Channel Models, System-Specific Propagation Channels - Indoor, Outdoor, Indoor to Outdoor channels, MIMO Channel and Research Areas in wireless propagation. It was organized from 25th February,2019 to 1st March,2019.



Industrial Visit to Saharsa Electronics

The visit to Saharsa Electronics Pvt. Ltd., 129-G, NSEZ, Noida-201305, organised for the third year students, was held on January 18th, 2019. The students got the basic knowledge of the upcoming trends in the PCB Designing, Manufacturing & Assembly technology and were equipped with better hands on experience and learned a new skill. The Students were accompanied by their class coordinator Mr. Varun Jain (Assistant Professor, ECE) and Mr. Sanjay Sharma (Assistant Professor, ECE).

The visit aimed at giving students an overview of PCB Designing, PCB Manufacturing (Up to 12 Layers & Metal Core), PCB Assembly (PTH & SMT), 7 State of The Art SMT Lines available at their



facility, LED Lighting Product Manufacturing (Indoor & Out Door) – Normal LED Lighting & Smart Lighting Product, Solar Technology / Other Renewable Energy Sources, IT/Memory & IoT Product's Manufacturing (PEN DRIVE – 8 GB, 16 GB, 32 GB, 64 GB, Memory Card's), DASHCAM's for Car, Industrial Tablet's / Panel PC's and Rework/Repairing/Services for Products to Telecom & Networking Leaders.



Faculty Development Program On Digital System Design



The program aimed to introduce teachers of technical institutions to the concept of Digital System Design. After undergoing this program, the participants were able to do the designing of combinational and sequential circuits, Simulation, Synthesis & implementation of circuits using VHDL. Learn about XC4000e and 9500 Series of reconfigurable devices and Implementation of digital systems on FPGAs. This program was funded by NITTTR Chandigarh (MHRD, Govt. Of India) for faculty of various Engineering colleges and Polytechnic teachers. The workshop was attended by all faculty members and the main topics of discussion were Review of digital circuits, XC 4000e series of FPGA, XC 9500 series CPLDs, Combinational logic design principles & practices, Sequential logic design principles & practices. It guided the faculty to enhance their knowledge in the field of Digital System Design and were also presented with a certificate of participation by NITTTR, Chandigarh.

☆ Star Program ☆

It was a mentored program held for the students of Government Sarvodya Kanya Vidyalaya Rohini, which was organized by IEEE society, ADGITM on the occasion of International Day of Women and Girls in Science, on February 2nd, 2019. Usually at this stage in their lives, students are often confused and clearly in oblivion of what quite lies ahead of them.

The program was a grand success as it could be seen from the faces of these young girls amazed and full of zeal by visually seeing science in action depicted by the experiments. The overwhelming feedback about the session taken from the students reflected our sincere efforts taken for inspiring a bunch of rising women.



☆ Star Program ☆



There was a small introduction and an ice-breaking session at the beginning of the program. This was succeeded by a PowerPoint presentation on the various careers in STEM by WIE volunteers. To keep the girls excited and pumped, a general quiz was also conducted. The topics spanned over science, technology, general knowledge, current trends, etc. Students were rewarded with chocolates for every correct answer. A presentation on What after 10th. The students were briefed about many conventional and non-conventional careers. They were also told about the pros and cons of every career.

A presentation on WIE in which the students were shown examples of women, like Dr. Suman Sahai, who have excelled in science and technology. Subsequently, students were shown some innovative projects made by IEEE members including a bulb controlled by mobile phone and an electromagnet.

Then the time came for some hands-on activities. After all, the essence of science lies in its practicality. There were 80 girls, 40 in each class and were further divided into groups of four and were assigned a volunteer for their questions and queries. They made a water alarm system using the kits provided to them.

The girls were briefed about the various scholarship schemes available to them. They were told about the Sukanya Samridhij Yojana, CBSE Udaan, Pragati, etc.

Placements

Congratulations!



- BHASKAR PANT
- GAURAV
- GAURAV BHOOTNA
- HONEY GUPTA
- PARTH RAWAL
- PRATIBHA SHEKHAWAT
- SAGAR
- SHOBHIT ARORA
- PARICHAY PAPNOI
- SHANTANU AGARWAL
- JATIN ARORA
- AKRITI AWASTHI
- SHRISTEE RAWAT
- RAJAT DIXIT

- ISHITA MISHRA
- HARSHITA SINGH



- SARANSH SHARMA

Placements



TATA CONSULTANCY SERVICES

- ATULYA AGGARWAL
- ISHITA MISHRA
- MAYANK SACHDEVA
- ANKIT KHANNA
- VIPIN YADAV
- ANURAG
- NEHA CHAWLA
- RAJAT DIXIT
- ROHIT SETHI
- MANNIKA KUMAR
- SRIJAN SONI
- TANYA GARG
- VISHAL GHATI
- AKRITI AWASTHI
- MOHD FAHAD ALI
- SARANSH SHARMA
- SHRISTEE RAWAT
- SHUBHAM JAIN
- SIMRANDEEP SINGH



- NEHA CHAWLA
- PARICHAY PAPNOI

- DHRUV MEHTA
- ISHAN JOSHI



- MITALI MITTAL
- PARTH THAKUR
- SHANTANU AGARWAL
- ROHIT SETHI

SAMSUNG

Transformers are Never Silent



Where all this noise is coming from?

Yes, we all know that transformers are never silent. This is actually quite impossible, but in an environmentally aware, highly regulated world, the issue is not the level of noise, but its nature – and it's very important.

Transformers emit a low-frequency, tonal noise that people living in their vicinity experience as an irritating “hum” and can hear even against a noisy background.

The noise of the core depends on the magnetic property of the core material (sheet steel) and flux density. The sound frequency is low (twice the rated frequency). The magnetic forces formed in the core cause vibration and noise. The load noise occurs only on the loaded transformers and is added to the no-load (core noise). This noise is caused by the electromagnetic forces due to leakage fields.

When core or tank resonance frequencies coincide with the exciting frequency, the noise level further increases. In some situations, the load noise is the dominant noise and is raising increasing concern among new transformer applications.

References:- Transformers make less noise – Information from Areva T&D

Alumni Stories



College life is the most crucial phase of anyone's life. It gives you the most important learning experiences and best joyful memories in your life. Same things I experienced in NIEC. I have learned so much in NIEC technically as well as socially. So beautiful moments I spent in NIEC like having fun chats with lecturers during lecture time which makes lectures less boring sometimes, gossiping with friends, eat best thing of NIEC's canteen "chai & Samosa", Fest time and many more things. I am very thankful to NIEC for whatever I have taken from it.

Presently, I am an engineer assistant at **Prasar Bharti, Bengaluru.**

Sakshi Tyagi, ECE-2012

It's a privilege for me to be a part of NIEC. College life was one of the best phase of my life. Those occasional class bunk, gossips, last night studies and countless other memories will stay in my mind forever. This institution has given me tremendous working experience. Presently, I am working as an assistant manager in one of the nationalised banks. I am grateful to my teachers and professors for their support to make us better persons and to enlighten our path.

Monika Dodhwal, ECE-2012



Alumni Stories

I had been a part of NIEC from 2008-2012 and my experience was full of punctuality along with lot unlimited fun movements with my friend circle and a few memorable, unexpected, out of context, dealings with faculty as well.

I have been working in cognizant technology solutions, Mumbai, from last three years. Every year I receive invites from the college for being a part of the Alumni meet, but unfortunately i couldn't attend any of them till now. Hope, this year i will make it and will get a chance to be again in the college campus with my friends and will recall some of my good time spendings of my college days.

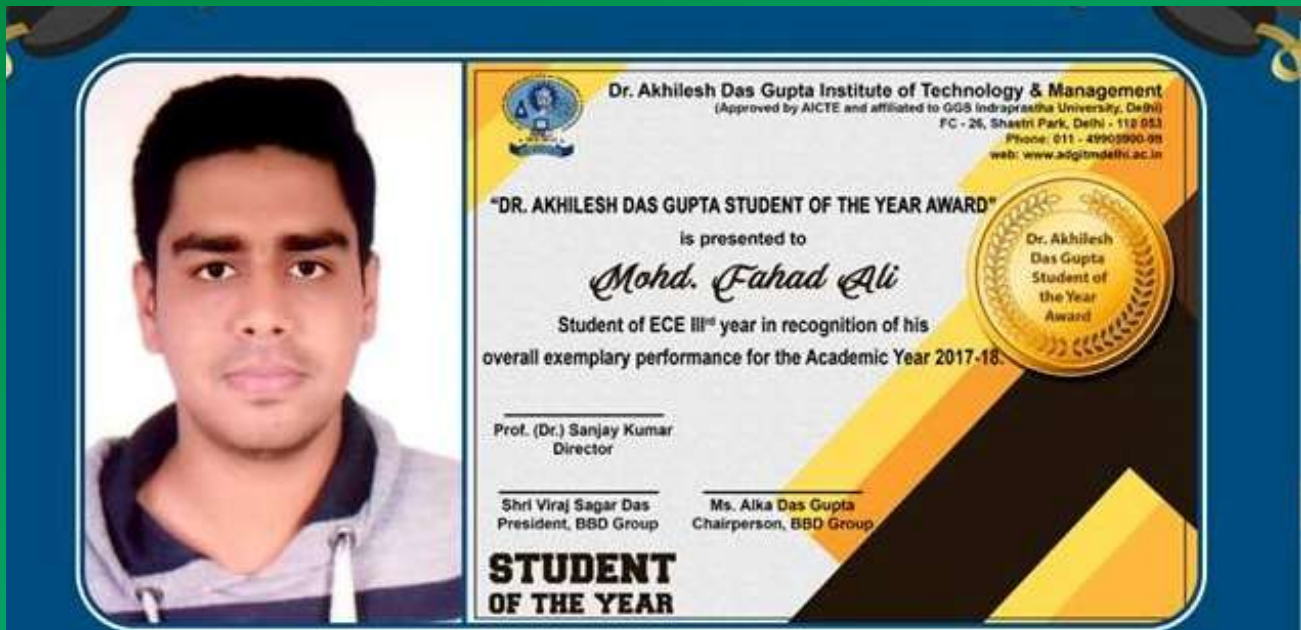
Ashok chikara, ECE-2012

NIEC provides a professional learning environment that acts as a catalyst for the exponential growth of student's academic as well as extracurricular abilities. In my current role as an Application Engineer for Cadence Design Systems, having studied in this institution has certainly played a critical role in shaping my career. My experience in NIEC has been both educational and fun. The highly learned faculty members are experts in their own fields and are committed to providing quality education with focus on creativity and innovation.

Mahima Goyal, ECE-2014

NIEC for me was transformational journey. The values, learning and grooming provided by Institute played a monumental role in moulding my professional and personal growth. Institute taught me to dream, fight for my dreams and also gave me all armour necessary for success in this testing world. I owe my success to teachers, who selflessly contributed to my growth by their immense knowledge and efforts. Institute helped me to understand myself better. Institute has given me one of my closest friends who have been pillar of support in my success.

Vinayak Malik, ECE-2016



MOHD. FAHAD ALI
(4th year student of ECE)
for being Rewarded
Dr. Akhilesh Das Gupta
Student Of The Year Award

**A heartiest
congratulations to our
very own Fahad!**

Ms. Richa Malhotra

Editor



I am extremely delighted to introduce the latest edition of ECE Departmental technical magazine “LECTRON” for the session July, 2018 to July, 2019.

LECTRON provides you a perfect opportunity to immerse oneself in the technical developments of ECE DEPARTMENT as it gives you insights about the latest achievements in field of technology, placements, high quality publishing, original contributions & happening events from both i.e. faculty and students, point of view.

I would like to thank all the members of the editorial board for putting up such a brilliant piece of work within such a short span of time which included collection of data, compiling, proof reading, editing, checking plagiarism etc.

I would also like to thank all the people who have contributed in some way or the other towards the magazine release.

It will be highly appreciated if our team is provided with your valuable suggestions for the further improvement and enrichment of our upcoming volumes.

Student Editors



Manasvi Grover



Maninder Bir Singh
Gulshan



Priyansha Chichra

The three of us take great pride in presenting to you all the third edition of "Lectron" - Official Technical Magazine of the Electronics and Communications Department. Striving to outlive the expectations of all to make the college a better institution every single day. Thanking the department for providing us with this opportunity and all our mentors who helped us along in building this piece.

