

NEXUS

DEPT OF ECE

APR-JUN 18

Vol.3-Edition2



About ECE Department

Vision

To excel globally in technical education through research, innovation and consulting in the field of Electronics and Communication Engineering and thus contribute to the larger good of the society.

Missions

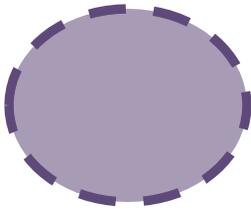
M1	<i>Establish a unique learning environment to enable the students to face the ever-emerging challenges in the field of Electronics and Communication Engineering.</i>
M2	<i>To equip the students with a broad intellectual spectrum in order to prepare them for diverse and competitive career path.</i>
M3	<i>To increase the visibility of academic programs globally, attract and nurture talent at all levels.</i>
M4	<i>To provide practical oriented education and foster research tie-up with national/ international education institute, research bodies and industry to promote the intellectual and research pursuits of students and faculty</i>
M5	<i>Provide ethical and value-based education by promoting activities addressing the societal needs</i>

PEOs

PEO1	<i>To provide comprehensive knowledge of electronics and communication engineering and related subjects for professional development, advanced education and develop entrepreneur skills.</i>
PEO2	<i>Be receptive to new technologies and attain professional competence through advanced degrees, professional societies, publications and other professional activities.</i>
PEO3	<i>To develop the ability to demonstrate technical competence in the field of electronics and communication engineering by teaching new and advance courses and provide an environment for technology related research.</i>
PEO4	<i>To impart value-based knowledge and enable the students to practice profession with ethics and a sense of social responsibility by making them more aware of contemporary issues</i>

FROM DIRECTOR'S DESK

It is a matter of pleasure to speak with all of you through this newsletter. We all can take pride from the fact that each one of us has contributed to the present day glory and growth of our college. And we get comfort from the knowledge that the future of our institution is in safe hands. The growth of our college has been in leaps and bounds. we can expect the continuous growth in the name and fame of our college. Signing off in the hope of meeting you all in the near future.



Wish you good luck!



**Prof.(Dr.) K.K. Paliwal
(Director)**

*"Ideas are easy.
Implementation is hard."
- **Guy Kawasaki***

FROM HOD'S DESK

I am very pleased to present you the newsletter of Electronics and Communication Engineering Department. Within these pages you will find much news related to diverse activities from the whole Faculty members and students. You can see the contributions from Faculties and students. I hope everyone will find this newsletter exciting and interesting.



Please feel free to drop in your suggestions to swatiqupta.ece@piet.co.in

Wishing you all the best !!!



Prof. Swati Gupta
(HOD ECE)

“There’s nothing wrong with staying small. You can do big things with a small team.”

- Jason Fried

EDITOR'S NOTE

It is with immense pleasure that we were given the opportunity to work on the department Newsletter. As we all know, a newsletter mirrors a college-Its vision and mission. It also highlights events, activities and academic prowess and achievements. We do hope that the newsletter encourages many more including students to use it as a platform to express their creativity. We sincerely hope that this edition makes for an interesting read



Please feel free to drop in your suggestions to
monika.ece@piet.co.in sapna.ece@piet.co.in



Associate Prof.(Dr.)
Monika Gambhir ,
ECE



Assistant Prof. Sapna
Arora , ECE

*“ Most writers regard the truth as their most valuable possession, and therefore are most economical in its use.”
– Mark Twain*

01

TECHNICAL
ACTIVITY -I

02

TECHNICAL
ACTIVITY -II

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03

TECHNICAL
ARTICLE

04

QUIZOMANIA

TECHNICAL ACTIVITY-I

An Expert Lecture on 5G Technology by Dr. Brahmjit Singh in ECE Department

*AUTHOR: Dr. Brahmjit Singh
(Dean, Research & Consultancy, NIT, Kurukshetra)*

DATE : 16 April 2018

AUDIENCE: Faculty + students of ECE

Following topics were discussed:

- *Wireless mobile networks*
- *cognitive radio networks*
- *wireless sensor networks*
- *5G technology*



PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY
Approved by: A.I.C.T.E, New Delhi & Affiliated to Kurukshetra University, Kurukshetra

Department of Electronics and Communication Engineering
Organises
EXPERT LECTURE ON Internet of Things (IoT)
By
Dr. BRAHMJIT SINGH
Professor and Dean, Research and Consultancy (NIT, Kurukshetra)

DATE: 16 April, 2018 VENUE: PIET, SAMALKHA

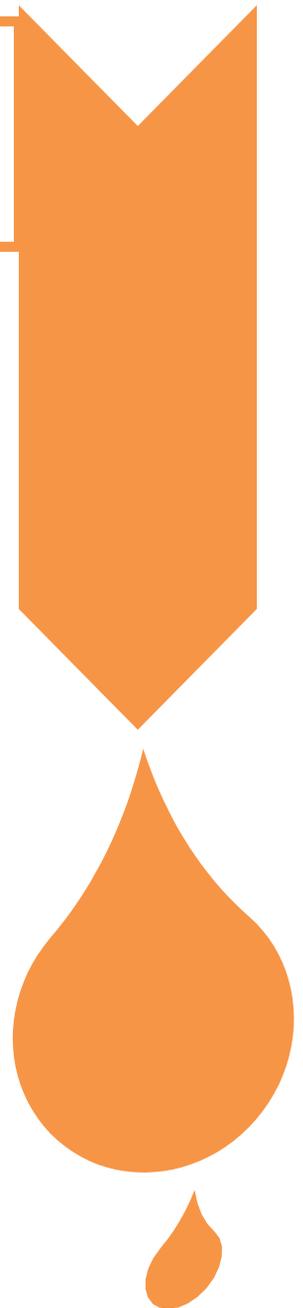


TECHNICAL ACTIVITY-II

ICT based programme on classroom communication was conducted from 28 may to 1 june 2018 by nittr, chandigarh for faculty.

Following topics were discussed:

- Communication and introduction & concept*
- Soft skills and classroom communication*
- Factors affecting classroom communication*
- Generating interaction in classroom*
- Barrier to effective classroom communication*



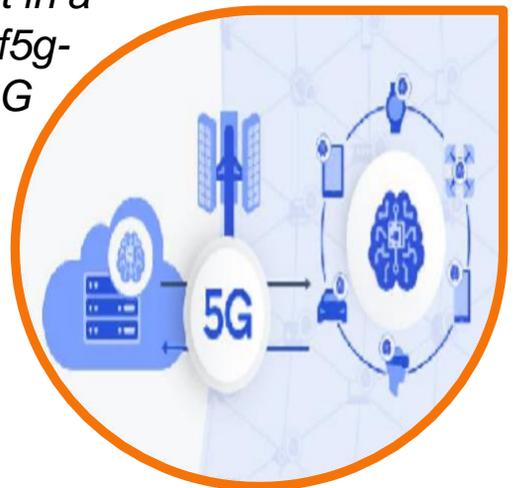
TECHNICAL ARTICLE:

Future with 5G networks

With fanfare, excitement and speculation, 5G is slowly making the transition from general idea to network implementation . Network operators are already scheduling 5G network trials and test beds to sort out how the 5G vision will be realized.

5g networks promise to support new services, more video, and cloud connectivity. There are three main case uses driving the 5g revolution:

- 1. Enhanced mobile broadband. With the promise of 10 gbps connectivity and latency of less than five milliseconds, it's no surprise the ongoing surge in demand for mobile connectivity will accelerate dramatically. The industry estimates this increased speed will result in a 10- to 100-fold increase in the number of 5g-connected devices over the number of 4G devices.*



2. *The Internet of Things (IoT). Thanks to 5G's virtualized, radiotechnology-agnostic core, published predictions estimate as many as 20 billion IoT connections by 2020—connections that will drive smart buildings and smart cities. CommScope anticipates 5G will offer 1,000 times the bandwidth of 4G and up to five times the density, making room for all those “things” on the network.*

3. *High-reliability, low-latency networks. Beyond just doing what 4G does better and faster, 5G opens new doors to allow driverless cars to coordinate over the network, enable augmented reality and virtual reality and expand the horizons of remote surgery and other applications that can fulfil their promise only on a network with such ultralow latency times as 5G's five-millisecond threshold.*



With these case uses in mind as the template for a real-world 5G rollout, it makes sense to also consider what can be done to make these applications possible.

For operators, that plan boils down to three key strategies:

The first is densification, or the practice of increasing capacity in a given area through more antennas, small cell sites or other measures. Upgrading to MIMO and sector splitting technologies also falls under this strategy.

4G

High Powered Antenna
Towers broadcast signals over long distances



PROBLEM

SOLUTION

5G

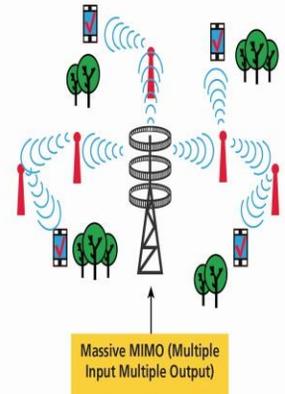
mm waves can't travel well through buildings and obstacles



mm waves tend to be absorbed by plants and rain



Using thousands of low power emitting base stations antennas to transmit signals around obstacles



The second is virtualization, shifting the work of physical equipment to virtualized environments operating in centralized data centers. This

strategy's inherent efficiency can reduce costs by as much as 70 percent.

The third strategy is optimization of existing assets and processes, including—but not limited to— repurposing earlier-generation wireless and TV spectrum and moving computing resources closer to the edge. Throughout the converged network, efficiency will be a critical design requirement for all aspects of 5G.

Priyesh Arya
ECE 2nd year

QUIZOMANIA

Q1- Who is the CEO of Tesla Inc. & SpaceX?

ANSWER- Elon Musk

Q2- Name the company with which government of Tamil Nadu sign an MoU to set up electric vehicle plant in Hosur?

ANSWER- Ather Energy

Q3- Name the EV company of two IIT graduates funded by Flipcart founders?

ANSWER- Ather Energy

Q4- Which is the fastest engineless electric train in India?

ANSWER- Vande Bharat Express

Q5- Name the highest range electric car in India?

ANSWER- Hyundai Kona

Q6- Name the world's cheapest electric car?

ANSWER- Ora R1

Q7- Which mobile company claim to have fastest charging technology of 120W?

ANSWER- Vivo

Q8- Which is the proposed mode of transport that would propel passengers at a speed of 1200km/h?

ANSWER- Hyperloop

Q9- How many transistors are there in Apple A13 Bionic chip?

ANSWER- 8.5 billion transistors

Q10- Which mobile company come with the concept of invisible camera?

ANSWER- ONEPLUS

Mohit

ECE 2nd year