



Vision of ECE Department

To produce skilled, socially –sensitized and globally competitive professional engineering graduates in the area of Electronics and Communication Engineering.

Mission of ECE Department

1. To provide quality and contemporary education through innovative teaching-learning process and effective resource utilization.
2. To develop responsive and socially sensitive engineer through research oriented practices.
3. To promote industrial collaboration for providing practical exposure leading to industry ready engineering graduates.
4. To open new vistas of learning for students through international collaborations.
5. To provide conducive environment through pre placement training and professional development activities for providing ample opportunities of placements, higher studies and entrepreneurship.

Towards 6G Wireless Communication Networks: vision and new paradigm shifts

The fifth generation (5G) wireless communication networks are being deployed worldwide from 2020 and more capabilities are in the process of being standardized, such as mass connectivity, ultra-reliability, and guaranteed low latency. However, 5G will not meet all requirements of the future in 2030 and beyond, and sixth generation (6G) wireless communication networks are expected to provide global coverage, enhanced spectral/energy/cost efficiency, better intelligence level and security, etc. To meet these requirements, 6G networks will rely on new enabling technologies, i.e., air interface and transmission technologies and novel network architecture, such as waveform design, multiple access, channel coding schemes, multi-antenna technologies, network slicing, cell-free architecture, and cloud/fog/edge computing. Our vision on 6G is that it will have four new paradigm shifts. First, to satisfy the requirement of global coverage, 6G will not be limited to terrestrial communication networks, which will need to be complemented with non-terrestrial networks such as satellite and unmanned aerial vehicle (UAV) communication networks, thus achieving a space-air ground-sea integrated communication network. Second, all spectra will be fully explored to further increase data rates and connection density, including the sub-6 GHz, millimeter wave (mm-wave), terahertz (THz), and optical frequency bands. Third, facing the big datasets generated by the use of extremely heterogeneous networks, diverse communication scenarios, large numbers of antennas, wide bandwidths, and new service requirements, 6G networks will enable a new range of smart applications with the aid of artificial intelligence (AI) and big data technologies. Fourth, network security will have to be strengthened when developing 6G networks. Clearly, 6G with additional technical requirements beyond those of 5G will enable faster and further communications to the extent that the boundary between physical and cyber worlds disappears.



Figure 1: A vision of 6G technology

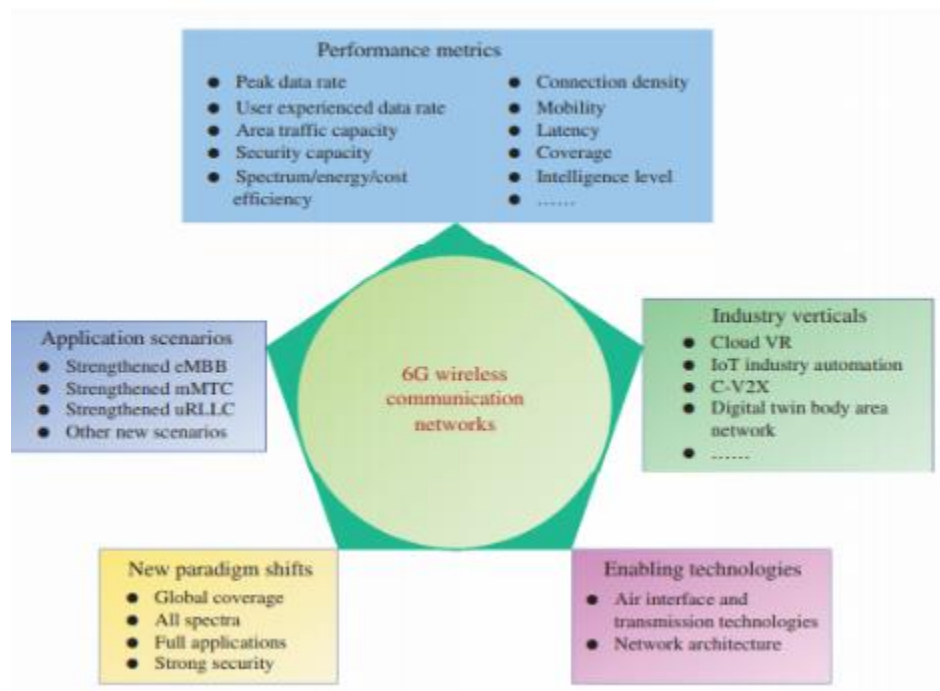


Figure 2: An overview of 6G wireless communication network



Short Term Course on Digital System Design

Dr. Dinesh Arora, Dr. Sukhdeep Kaur, Dr. Parveen Singla, Dr. Harbinder Singh and Dr. Pooja Sahni attended STC on Digital System Design organized by NITTTR, Chandigarh, for students and faculty members.

Research Publications

S. No.	Title	Journal/ Conference	National/International	Name of Journal/Conference
1	Object Based Glacier surface change detection using Multispectral satellite Data	Conference	International	7th IEEE Conference- UPCON-2020
2	Relevance of Matrices and Image Processing	Journal	International	CGCIJCTR
3	Improved Lifetime Hierarchical Routing Protocol for Wireless Sensor Networks	Journal	International	Journal of Solid state Technology
4	An Edge Fed Planar Inverted-F Antenna With J Shaped Element for 4G LTE/5G Devices	Journal	International	International Journal of Electrical Engineering & Technology
5	Design and Simulation of shunt switch using crableg structure for high frequency applications	Conference	International	International Conference on Signal Processing and Communication (ICSC-2020)
6	Construction of Fused Image With Improved Depth-of-field Based on Guided Co-occurrence	Journal	International	Digital Signal Processing, Elsevier



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	Filtering			
7	A multilevel thresholding algorithm using LebTLBO for image segmentation	Journal	International	Neural Computing and Applications, Springer
8	Multifocus and Multiexposure Techniques	Book Chapter	International	Springer
9	Performance And Anaylsis Of Covid-19 In India For Spreading - A Mathematical Approach	Journal	International	European Journal of Molecular & Clinical Medicine



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Patent Details

S.No.	Patent Name	Faculty
1.	Key Locating System	Dr. Pradeep Gaur
2.	Communication Assisting System	Dr. Pradeep Gaur
3	INTERLOPER Detection System	Surinder Singh, Gaurav Kumar

Student Achievements(National Level)

S.No.	Name of Student	Activity/Event	Participation /Position	Outcome
1.	Karan Bhatia	E-Summit(IIT Bombay)	Participated	Technical
2.	Ashish Kumar	IKGPTU Inter College Handball Tournament 2019-2020(BGIET Sangrur)	3 rd position(Bronze)	Fitness

Chief Editor Message

Usually we fail to appreciate the good deeds of many people and activities that happen around us as we are engaged in irrelevant talks and assumptions. It could all change if we just pause to think of what is our contribution to the society from which we have been gifted with this blessed life. The progress of the society mainly depends on the people who are working behind the scenes, overtime round the clock planning things to the minutest level. This newsletter will be a medium to provide proper acknowledgement and respect to all of these efforts and its results.

Sincerely,

Chief Editor: Ms Ashima Kalra
Editor: Ms. Aanchal Gupta
Student Editor : Mahima, Tarishi



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