



ANTENNA RESEARCH GROUP

Electronics & Telecommunication Engineering Department

Issue 02, Year 2019-2020

Editor: Prof. Mohini Naik

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OBJECTIVES

The explosive growth in the demand for wireless communication and information transfer using handsets and devices has created the need for major advancements of antenna designs as a fundamental part of any wireless system.

The main objective of the Antenna research Group is to encourage students to study and design antennas such as Millimetre wave antennas, Micro strip antennas, PIFA antennas etc. for different wireless applications and to get hands-on experience in developing and analysing different antenna parameters. This will not only help to reduce the gap between industry and academia but also it will develop the antenna designing skills among the students.

Established in 2018, the Antenna Research Group conducts workshops and hands-on training for the students to make them industry ready. It also encourages students to publish the valuable research work in reputed journals and conferences.

Orientation Program

To create the interest and encourage students in doing research in antenna domain, Prof. Mohini Naik conducted an orientation session on research in antenna's and its industry prospective for the students of second year and third year Electronics and Telecommunication Engineering on 9th August 2019. The objective of the orientation was creating awareness and interest among the students and bridging the gap between RF antenna industry and academia.



Source: google.com

Welcome to the Members

Faculty Coordinator:

Prof. Mohini Naik, Assistant Professor ETC, Don Bosco College of Engineering

BE ETC (2019-2020)		TE ETC(2019-2020)	
SR. NO	NAME OF THE STUDENT	SR. NO	NAME OF THE STUDENT
1	Shivam Bale	1	B.Pavan Kalyan
2	Pooja Gaonkar	2	Borker Suyog Yoganand
3	Bharati Warak	3	D'silva Valini
4	Siddhi Desai	4	D'silva Velton Angelis
5	Mohini Phadate	5	Da Silva Stanford Franson
6	Shriya Nayak	6	De Oliveira Juella Franny
7	Vaishakh Sanjeevan	7	Dhumvad Abhishek Ravindra
8	Saif Ahmed Sayed	8	Gaonkar Poonam Ratnakar
9	Kowshik Kolvekar	9	Gaude Shubham Shamba
10	Vallabh Sawant	10	Gawade Sanmesh Shashikant
11	Omkar Karapurkar	11	Jalmi Vaishabh Vasudev
12	Sahil Lotlikar	12	Joel Nicolas Fernandes
13	Sahil Naik	13	Kambli Sapana Subhash
14	Mohit Naik	14	Kunde Siddhant Nilesh
15	Neha Shanbhag	15	Naik Drasti Vitob
16	Akshata Naik	16	Naik Gaunekar Miti Mahesh
17	Vishant Gaonkar	17	Naik Sanket Devendra
18	Sairaj	18	Pawar Lata Ashok
19	Silvester Vaj	19	Phadtare Pooja Rameshkumar
20	Rochelle Pereira	20	Prabhu Saurabh Santosh
21	Reecha Mahale	21	Rahul Kotru
22	Prajakta Naik	22	Raj Rama Kubal
23	Sampada Nagvekar	23	Rao Valaulikar Viresh Vallabh
24	Vrunda Asolkar	24	Rathod Govindsingh Chainsingh
		25	Rege Bhavani Alias Yash Harsh
		26	Rodrigues Ryan Alex
		27	Sangodkar Gajanan Santosh
		28	Satarkar Madhavi Rohidas
		29	Satyaswarup Banerjee
		30	Shaikh Musab Irfan
		31	Sinai Sambary Nihal Nilesh
		32	Vernekar Simran Aishwarya Azad
		33	Saeel Naguesh Kamat
		34	Vivek Purushottam Khadilkar
		35	Rohan Rajendra Nayak

STUDENT'S CORNER

Workshops/Seminars/ Trainings

Workshop on “Antenna Design and Roadmap to 5G”

The Antenna Research Group in association with student satellite club (Parikrama) group organized a one day workshop for the students of TE ETC on 10th August 2019. The topics covered in the sessions includes basics of Antenna principles, parameters, design of micro strip patch antenna, literature review on the types of antenna used for different applications, antennas used for wireless applications, Roadmap to 5G, Antenna design for 5G. The Coordinator for the workshop was Prof. Mohini N. Naik.

Project Manager Musab Shaikh and Rahul Kotru member of Parikrama gave demonstration of crossed Yagi antenna to the students and explained its working, construction in detail. Crossed Yagi antenna can be used to track NOAA ISS satellites in the future.



Workshop on “Satellite Communication and Ground Station Development”

The Antenna Research Group in association with Parikrama-student satellite club organized workshop on satellite communication and ground station development for the students of First year ETC on 17/12/2019. In regards to this, Prof. Mohini N. Naik, Asst. Professor of ETC Engineering, DBCE, took sessions from basics to the design of satellite. Prof. Mohini Naik started the session with various projects under space technology and satellite missions. Various other topics which were addressed were Satellite communication using artificial intelligence (AI), earth station development, design of transmitter and receiver, and antenna system.



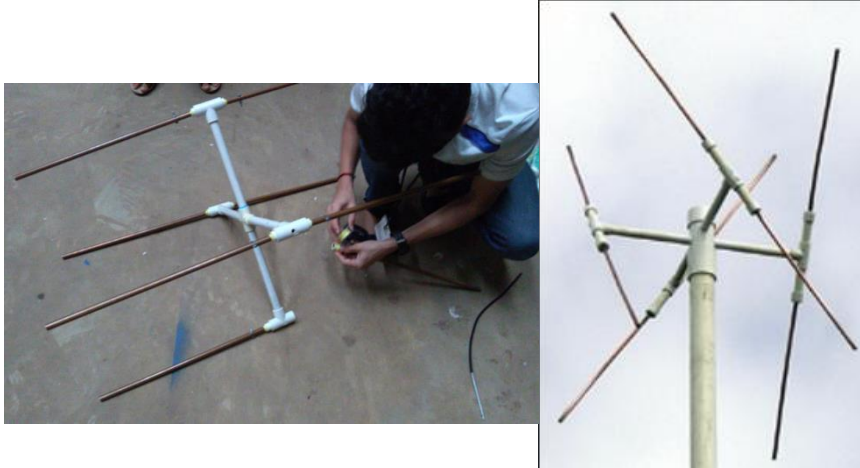
Workshop on “Roadmap to 5G Antenna”

The Antenna Research Group & Parikrama-student satellite club, conducted half day workshop on “Roadmap to 5G Antenna “for the second year ETC students, on 25th January 2020. With regards to this, Prof. Mohini N. Naik, Asst. Professor of ETC Engineering, DBCE, took sessions from basics of electromagnetic waves, to 5G antenna design. Sesssion1 started with basics of electromagnetics, spectrum and applications of each frequency. Relation between frequency and dimensions of the designed systems. In Session 2, Prof. Mohini Naik explained various antenna aspects, basics of 1G, 2G, 3G & 4G antenna and introduced 5G antenna design and requirements.



Projects

Design and Fabrication of Crossed Yagi Uda Antenna



Group Members: Vaishabh Jalmi
Musab Shaikh
Rahul Kotru
Saurabh Prabhu
Simran Vernekar

Project Titled: Cross Yagi Uda Antenna

Design and fabrication of crossed yagi antenna is done by the students to receive the satellite signals. This project was handled by ETC students lead by Musab Shaikh under the guidance of Prof. Mohini Naik. One beneficial aspect of this Double Cross antenna is that it is quite tolerant of construction variations. That is, an antenna in this configuration will almost always work well even when the dimensions are only close to the optimum design. The only thing critical is the proper connection of the harness to the dipoles.

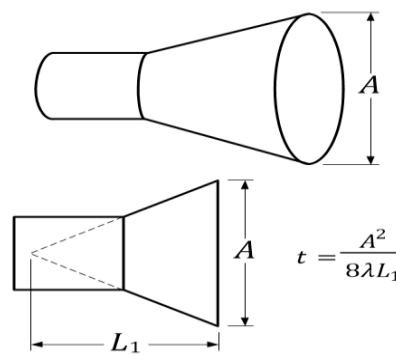
A Double Cross yagi antenna is built by constructing a dielectric support as shown in Figure and attaching the dipoles and harness to the dielectric support. Build four dipoles from a convenient conductor, each about 38 inches long, and attach them to the supports. The dipole supports numbers 1 and 2 are separated by about 20 inches. The dipoles number 3 and 4 are also separated by 20 inches. Each of the four dipole supports is tilted 30° from vertical. Dipoles 1 and 2 are fed in phase and with the proper polarity, so the upward pointing end of dipole #1 has the same polarity as the downward pointing end of dipole 2. The upward pointing end of dipole 3 has the same polarity as the downward pointing end of dipole 4.

Design of Horn Antenna

Group Members: Juella De oliveira
Pooja Phadatare

Project Titled: Design of Horn Antenna

Description: Design of a pyramidal horn is proposed at 2.45 GHz. The proposed antenna is designed using FR-4 substrate with a thickness of 0.5 mm, dielectric constant of 4.4 and a loss tangent of 0.004.



Design of Helical Antenna

Group Members: Velton D'Silva
Da Silva Stanford

Project Titled: Design of Helical Antenna

Description: The helical antenna is planned at 5 GHz frequency by using Paper material. The copper strip is printed on a substrate then rolled into a helix shape with a specific radius to realize the circular polarization.

