

Technova



EXTC
Departmental
Magazine

● **Year 2022-2023**

Terna Engineering College, Nerul



Terna Public Charitable Trust - Terna Engineering College is a well-known and finest technical institution with NBA and NAAC accredited from the Maharashtra Government. It has an ISO 9001 quality management system and is among the top colleges in Mumbai. This year we have also been accredited with a B++ grade from NAAC. Terna offers education of the highest quality with its curriculum and presents a broad array of exceptional offerings in Engineering and Technology studies. The Department of **Electronics & Telecommunication** is one of the most reputed in Mumbai University, well known for both its academic excellence and innovative approach. It has been successfully organizing seminars/workshops/industrial visits for the benefit of the students. The faculty forms the nerve of the department. In addition to the teaching assignments, some faculty members are engaged in research work which is actively supported by the college.

VISION:

To inspire young minds for innovative thinking & and creativity and to acquire knowledge and professional ethics essential for facing global challenges in rapidly changing technologies to serve society and industry effectively.

MISSION:

To create self-motivated quality Engineers and technocrats to contribute effectively to a value-based society and in the field of science and technology.

From the Mentor's Desk



Dr. Jyothi Digge **HOD, Electronics and Telecommunication**

The Department of Electronics & Telecommunication Engineering is offering technology oriented courses and creating manpower in the strategic areas well compatible with the industrial expectations. Keeping in mind that experiential learning is the ethos, we organise various Technical skill development programmes, Workshops, Industrial Visits, Guest Lectures of eminent personalities in the related field and Industrial experts . We also inspire our students to organize various activities through IETE Students' Forum and participate in various co-curricular, extra-curricular and sports activities.

Electronics and telecommunication engineering is a dynamic and exciting area that provides excellent career opportunities in various areas of technology. The department faculties are committed to teaching our students the fundamental concepts and the latest trends via smart teaching and learning processes. The students are also taught critical thinking and problem-solving skills as they accommodate their future with confidence. In addition to classroom teaching, the students are guided and motivated to practically implement the principles learned in classrooms through experimentation in the laboratories.

To top it all, the Department has 7 granted patents, many more published. A large contribution to the research publication of TEC is from this renowned Department. In a nutshell, every faculty, staff, and students strain their nerves to maintain the glory of this Dept, since its inception in 1991. DEPARTMENT is NBA accredited due to the immense contribution from faculty, staff and students.

From the Mentor's Desk

I've always believed in fostering an environment where students are not just learners but contributors. Our technical magazine serves as a platform for them to articulate their ideas, showcasing their intellectual prowess and practical insights. It's an exciting journey for us. We tirelessly work to curate content that reflects the depth of our department's expertise and also showcases the diverse ideas brewing within our students. It's a fulfilling experience, and we take pride in making our department shine.



**Prof.
Rupali Shekokar**
Faculty In-charge

I believe in the power of education to transform lives, and initiatives like the technical magazine play a pivotal role. It is heartening to see students actively engaging in such endeavors. Technical magazines are one of the finest ways to enhance students' cognition, it's understanding and practical applications.

As faculty in charge, I have always encouraged the students to put forth their ideas. My best wishes to all the contributors and the assiduous student members of the committee who are endlessly making the department proud. I'm also thankful to our principal Dr. L.K. Ragha and the HOD of Electronics and Telecom. Department Dr. Jyothi Digge for their unconditional support.

CONTENTS

- + **Departmental Committee**
- + **Committee Members**
- + **Events Organized**
- + **Student Project Corner**
- + **Startups**
- + **Faculty Achievement**
- + **Patented Research Paper**
- + **EXTC department Faculty**

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DEPARTMENTAL COMMITTEE

Year 2022-2023

The Institution of Electronics and Telecommunication Engineers (IETE)



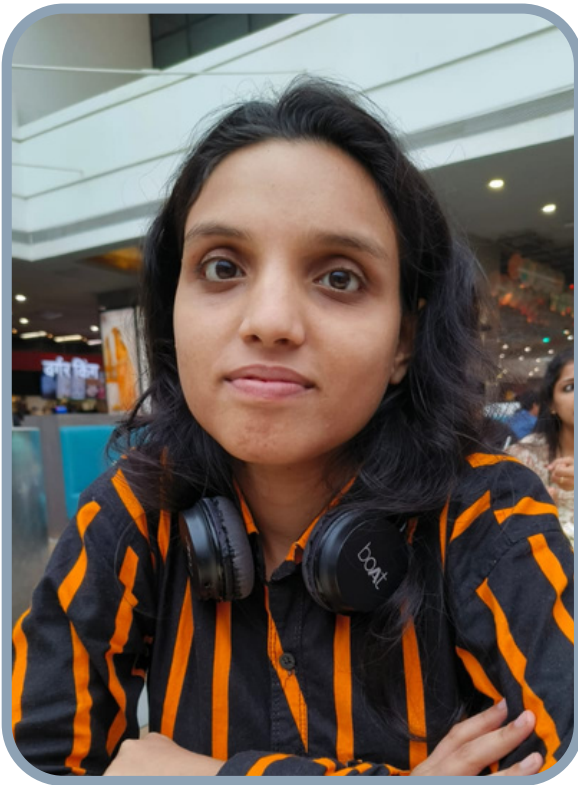
The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognized professional society devoted to the advancement of science, technology, electronics, telecommunication and information technology. Founded in 1953, it serves more than 70,000+members through 60+ centers/sub centers primarily located in India (3 abroad). The Institution provides leadership in scientific and technical areas of direct importance to the national development and economy. Association of Indian Universities (AIU), Union Public Service Commission (UPSC) has recognized AMIETE, ALCCS (Advanced Level Course in Computer Science). Government of India has recognized IETE as a Scientific and Industrial Research Organization (SIRO) and notified as an educational institution of national eminence. The IETE focuses on advancement of electronics and telecommunication technology. The IETE conducts and sponsors technical meetings, conferences, symposium, and exhibitions all over India, publishes technical and research journals and provides continuing education as well as career advancement opportunities to its members.



CORE COMMITTEE MEMBERS

Year 2022-2023

Charu Gupta President



Reflecting on my journey with this committee, it's been an incredible adventure of collaboration and growth. Together, we've navigated challenges, celebrated successes, and shaped the future of our institution. Each step has been a learning experience, and I'm grateful for the dedication and passion you all bring to our shared mission. Thank You, Prof. Rupali Shekokar Ma'am and Dr. Jyothi Digge Ma'am for your trust in me and for supporting our team on every step.

Akshata Kulkarni Secretary

"Leadership is not about being in charge. It's about taking care of those in your charge."

The Secretary plays a crucial role in facilitating the organization's objectives, promoting professional development, and ensuring the smooth functioning of the IETE. Mostly responsible for managing administrative tasks, coordinating activities, and fostering communication among members. This helps to build personality and quality.



Rohit kumar Bhagat

Creative & Magazine Head



My journey on this committee has been just like a rollercoaster ride! From finding wild ideas to bringing them to life, we have worked hard on bringing every innovation in our EXTC department to the limelight it deserves. The process has been as colorful as our imaginations, and the support we got from Prof. Rupali Shekokar Ma'am and Dr. Jyothi Digge Ma'am has sparked some truly unique initiatives. In the end, I want to thank every person involved with this committee for making my year in IETE an unforgettable memory.

Uday Mahajan

Membership & Documentation Head

LOTS OF GRATEFULNESS TO IETE coordinator Prof. Rupali ma'am and past core member. By joining this council, I learned multiple new skills other than academics like managing tasks, organizing events, working in a team, and improving myself. It strengthened my self-confidence, and I was able to interact with many people. IETE is a platform where each and everyone gains knowledge, learns new skills, and welcomes ideas for development in students as well as IETE. It has been amazing to work with this team and under the guidance of the IETE coordinator.



Siddhesh Mungekar

Treasurer & Logistics Head



My journey on this committee began with the responsibility of this post and more than that about how I bring credit to it, what helped me most through it were the seniors who guided me about my tasks and explained me things making it a lot easier for me throughout, we as a team organized events and conducted them successfully in our time with the committee, a huge part of this goes in thanking our coordinator ma'am prof Rupali Sheokar who stood with us guiding us in every aspect and my teammates who conducted them and made it succeed.

Shreya Patil

PR & Social Media Head

A dynamic and influential Social Media head who has made waves in the digital landscape over the past year. With a keen understanding of social media content, consumer behavior, and content creation. In the past year, she has worked tirelessly to create a powerful online presence for the IETE Social Media Accounts both on Instagram and LinkedIn. One of her notable achievements was her innovative use of video content to drive engagement. Recognizing the growing popularity of video-based platforms, she led the production of simple yet exciting videos that captivated audiences and boosted recognition.



VOLUNTEERS



The college committee volunteers are the unsung heroes working tirelessly on the ground, dedicating their time and efforts to enhance the college experience for everyone. Through their commitment and passion, they contribute to the smooth functioning of various events, initiatives, and community-building activities, fostering a vibrant and engaging campus environment.

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EVENTS ORGANIZED

Year 2022-2023

Industrial visit to CETTM (MTNL), POWAI

A batch of VI semester students from the Department of EXTC along with faculties members Prof. Vilas Moon, Prof. Saurabh Tejpal, and Prof. Ravindra Shelkikar visited the Center for Excellence in Telecom Technology and Management (CETTM). The Industrial visit was carried out on **22nd April 2022** with the total of 53 students.



Industrial visit to ISRO

A four-day Industrial visit to the Indian Space Research Organization (ISRO), Bangalore was organized by the Department of Electronics and Communication on **9th September 2022**. It was a half-day visit by 90 students of the 7th semester along with 6 faculty members.



Engineer's Day



On **16th September 2022**, students from SE, TE, and BE of EXTC & ELX united to organize an IETE orientation Ceremony on the occasion of ENGINEER'S DAY. This was important for the IETE Committee as the new core committee was formed. Farewell was given to old Committee members who shared their experiences and greeted newfound members. A quiz competition on Engineer's Day was held for students as well as faculty. Principal Sir also participated in this quiz competition.

Industrial Visit To “GMRT-Tata Institute of Fundamental Research

The Industrial visit was carried out at GMRT on **30th September 2022** for SEM V, Electronics and Telecommunication Engineering Students. Prof. Vilas Moon, Prof. Saurabh Tejpal, Prof. Anjali Rochkari, and Mrs. Nivedita Ohal along with 84 students visited GMRT.



Cyber Security Awareness

A 3 Day Workshop

A cybersecurity workshop was organized **from 7 October 2022 to 11 October 2022** by the IETE committee in association with *Telenetworks Technologies Private Limited*, Navi Mumbai. Ms. Prachi Mule talked about the "Basics of Cyber Security and its need". There was a count of 80 students who attended the whole 3 day workshop.

On the last day of the workshop a test was arranged for all the participants, which was based on all that was taught in workshop itself. All passing students were rewarded with certifiacates.



SECURE ACCESS MANAGEMENT USING IOT

IETE committee in collaboration with *Pranit E-learning*, Uran organized secure access management using an IOT seminar. This workshop was held on **19th January 2023** in Terna Engineering College. More than 60 students of third-year EXTC participated in the workshop.



IETE Day Celebration

On the completion of 70 years of IETE, the IETE committee of our Terna Engineering College celebrated IETE Day on **1st February 2023**.

An 'Ideathon' was organized to put forth the achievements attained by students in the EXTC department.

Mr. Vikas Gupta from 2nd Year, EXTC, shared his unique idea with students and teachers.

Later, the College magazine 'Avalanche' and EXTC departmental magazine 'Technova' for the year 2021-22 were launched.



Workshop on FPGA

(Hands-on)



On **2nd March 2023**, a workshop on FPGA (Field Programmable Gate Array) was held for 3rd-year EXTC students by Prof. Rupali Shekokar, Prof. Virendra Koli, and lab assistant Mrs. Lalita Patil. Small FPGA projects were taught using Xilinx Vivado software, along with tools and how encryption works. The FPGA kit was also provided to students so that they could practice their project.

Mini Project Workshop

(5 Day Workshop)

A hands-on project workshop was held for 2nd year EXTC students from **13th March 2023** to help with their “Mini Project”. Mr. Pranit Bhoir, the host of this workshop provided all the tools and technical knowledge to all 4 groups that partook in this workshop.



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STUDENT'S ACHIEVEMENT CORNER

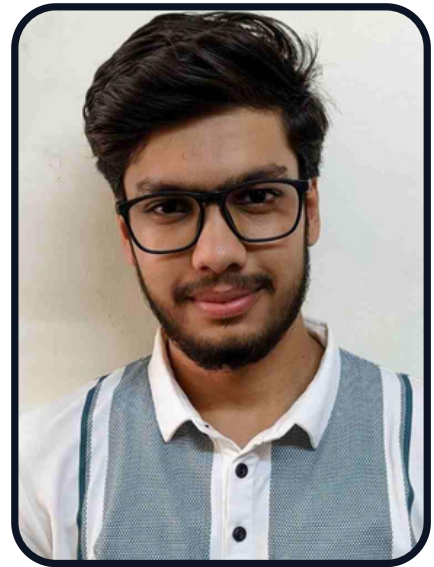
Year 2022-2023

Class Toppers

Suryansh Chourasia

(Second Year)

8.55 CGPA



Mihir Vijay Yadav

(Third Year)

8.33 CGPA

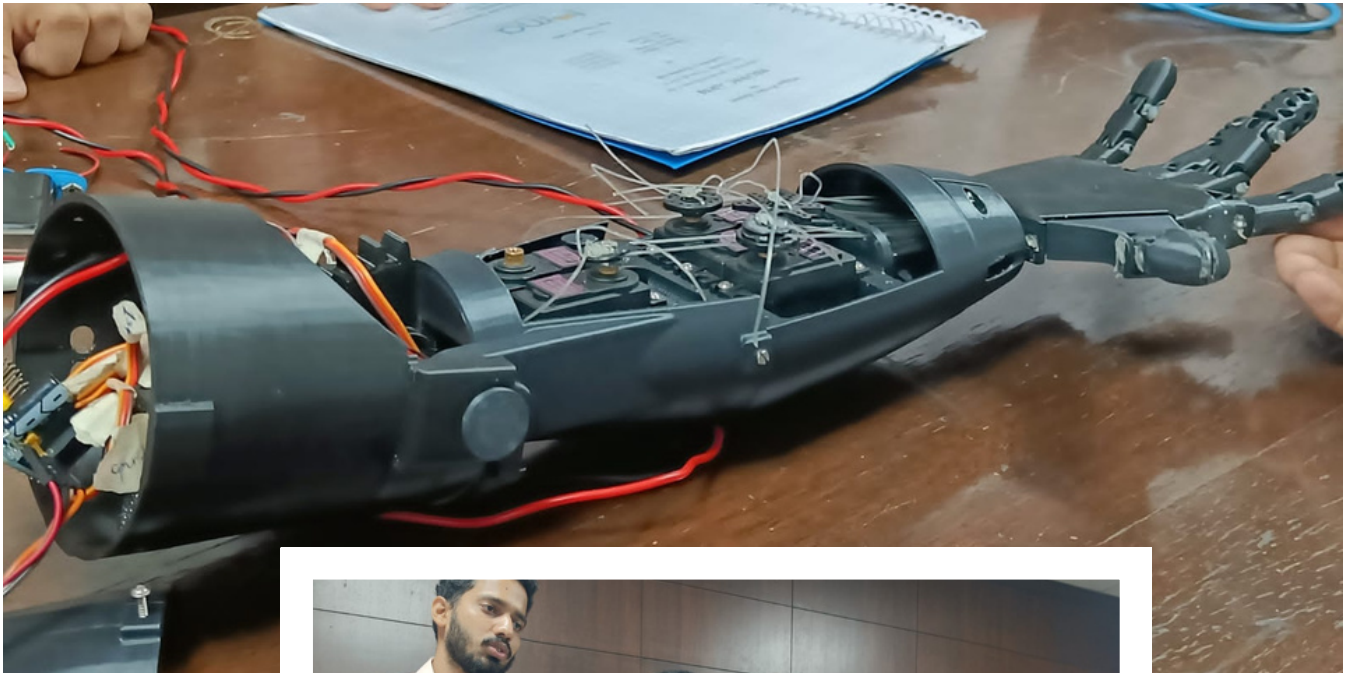
**AMISHA SHIVBAHADUR
YADAV**

(Fourth Year)

8.75 CGPA



FINAL YEAR PROJECT



BIONIC ARM

A 3D printable design of a Bionic arm. The arm is electronically actuated and controlled by a user flexing their muscles. The bionic arm presented has the potential to be used by an amputee person who is disabled or in need of one. The bionic arm does have its drawbacks but growth and development in the field will only head to improvements over a period. This topic covers a wide range of engineering aspects.

TABLE TENNIS TRAINING ROBOT

A low-cost table tennis robot with an automated table tennis launcher, a self-table tennis training kit prototype that is integrated with a microcontroller. This fabricated prototype can shoot the ball in three different directions and with adjustable spinning direction, which helps the user to practice almost all types of strokes in this sport.



WATER MANAGEMENT SYSTEM

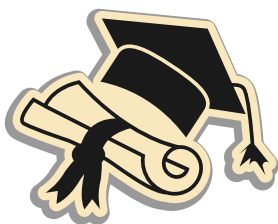


This system consists of two systems i.e., the Upper tank System and the Lower tank system. A Level sensor is attached to both tanks which will be used to measure the water level of the tank. An Rf wireless module is used to make a communication channel between the two systems. The modules will operate at a frequency of 433 Mhz. The ASK modulation technique is used to transmit and receive the message. The main reason behind implementing such a system is to avoid the overflowing of the tank in cooperative housing societies. The system will be completely automated hence the water supply will be turned off once the upper tank is full. One can also measure the flow rate of the water using a flow rate sensor which will be based on a Hall.

Taekwondo Championship

Ms. Aastha Chaudhari of the EXTC department participated in the inter-college Taekwondo Tournament 22-23, arranged by the Thane zone sports committee at S.S.T College of Arts & Commerce, Ulhasnagar. She won the Gold Medal and was selected for the inter-zonal Mumbai University taekwondo championship.





Higher Educations 2022-23

Aditi Anil Sathe

Degree - Master of Science in Business Analytics
Queen's University, Northern Ireland, UK.

Adwait Deshmukh

Degree - MSc
University of Birmingham, Edgbaston, England.

Vaniksha Chougule

Degree - MSc (Artificial)
Aston University, Birmingham, England.

Raj Upreti

Degree - MSc (ABT)
SKEME School of Business, Paris.

Omkar Sanjay

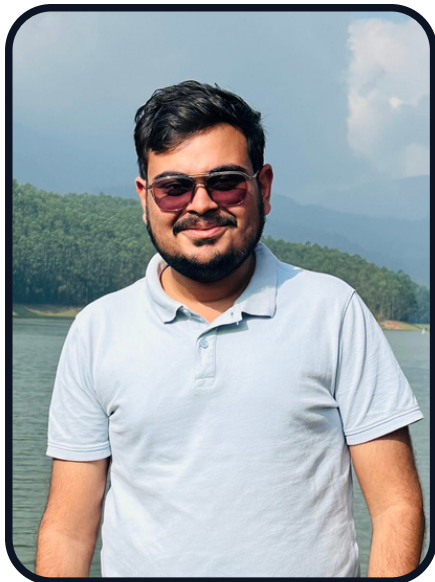
Degree - MSc (Applied Data science and Analysis)
SRH University Heidelberg, Germany.

Darshil Shah

(2019-2020)

Degree - MS

Northeastern University,
Boston



Siddhesh Wani

(2020-2021)

Degree - NME Embedded Systems

Manipal School of information
science

Varun Pasikanti

(2021-2022)

**Degree - MS Smart Energy and Built
Environment**

Bartlett School of
Environment. Energy and
Resources, London



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STARTUPS

Year 2022-2023

Your Coder Buddies

The IETE student chapter brings a YouTube channel to help students & and learners improve their skills and have an amazing coding journey. For college students and tech enthusiasts who are looking to master the most valuable art of coding, this platform proves to be an invaluable resource and guide, offering a wealth of knowledge.



Coding

Internships

Web Design

Web Hosting



yourcoderbuddies



Your Coder Buddies



@yourcoderbuddies

PEL Robotics

PEL Robotics, founded by Pranit Pradeep Bhoir, is a leading robotics company dedicated to driving technological advancements in the field. With a focus on research, development, and implementation, PEL Robotics offers cutting-edge training programs and develops innovative robotic solutions. Their services encompass comprehensive courses, practical learning experiences, and project development training, empowering individuals to apply their theoretical knowledge to real-world scenarios.



pelrobotics



pel_robotics

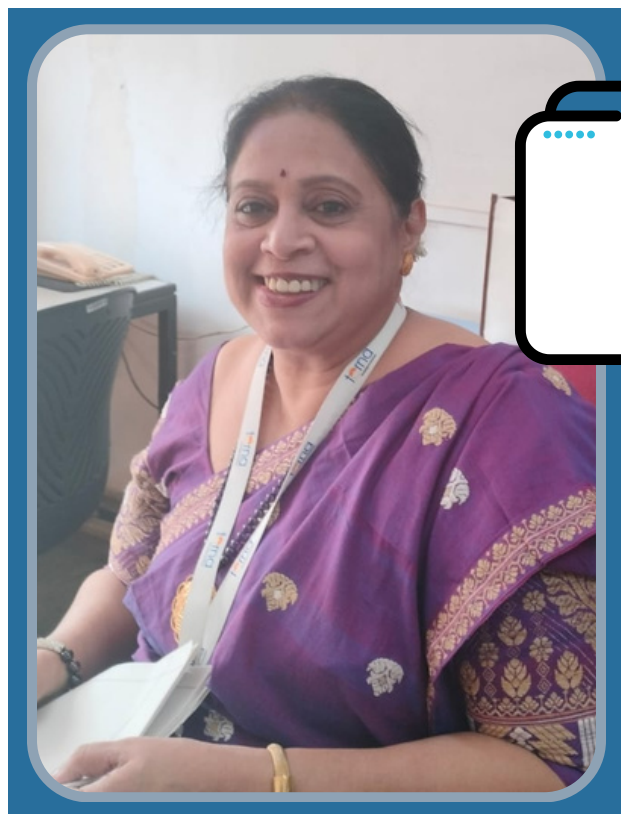


DEPARTMENT ACHIEVEMENTS

Year 2022-2023

Remote Centers Coordinator

iirs GOVERNMENT OF INDIA
INDIAN INSTITUTE OF REMOTE SENSING
Indian Space Research Organisation



Dr. Jyoti Digge

**HOD, Electronics and
Telecommunication**

Dr. Jyoti Digge is a coordinator in IIRS.

The Indian Institute of Remote Sensing is an institute for research, higher education and training in the field of remote sensing, geoinformatics and GPS technology for natural resources, environmental and disaster management. The institute was established in the year 1966 under the Indian Department of Space.

IIRS conduct its Training, Education and Research programmes with enhanced focus on Microwave Remote Sensing, Hyperspectral Remote Sensing and Climate studies. IIRS has collaborations with many reputed international organisations for capacity building, research and faculty exchange.

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FACULTY ACHIEVEMENTS

Year 2022-2023

Learnathon



Prof. Saurabh Tejpal

Learnathon is a young and dynamic organization, that believes in facilitating the needs of individuals, organizations & institutions across all verticals.

At Learnathon they believe that Soft skills are character traits and interpersonal skills that enable someone to interact effectively and harmoniously with other people.



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PATENTED RESEARCH PAPER

Year 2022-2023

"IOT Based Blood Disorder Disease Prediction and Detection System"



**Prof.
Saurabh Tejpal**

The new advancements in disease prediction and diagnosis are used dataset from patient Electronic health records (EHR), Internet of Things (IoT) sensor devices, wearable and mobile devices, and social media.



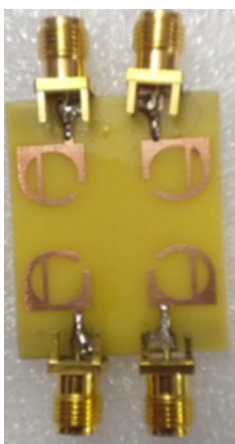
Quad element MIMO antenna for 5G sub-6 GHz Applications (Patent granted by Government of India)



Dr. Rajiv Gupta

TA compact four elements multiple-input multiple output (MIMO) antenna is designed for 5G sub-6 GHz applications. The antenna structure is designed from a rectangular and semicircular monopole antenna.

Fig. 1. Fabricated prototype



(a) Top-view



(b) Bottom-view

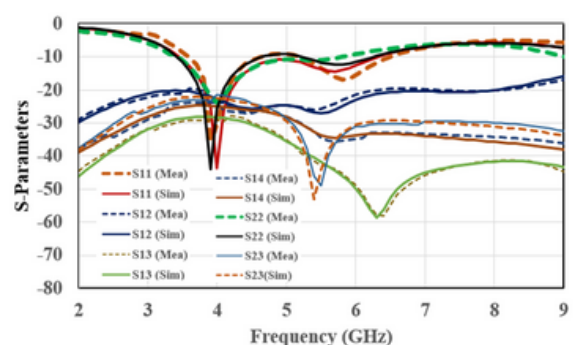


Fig. 2.

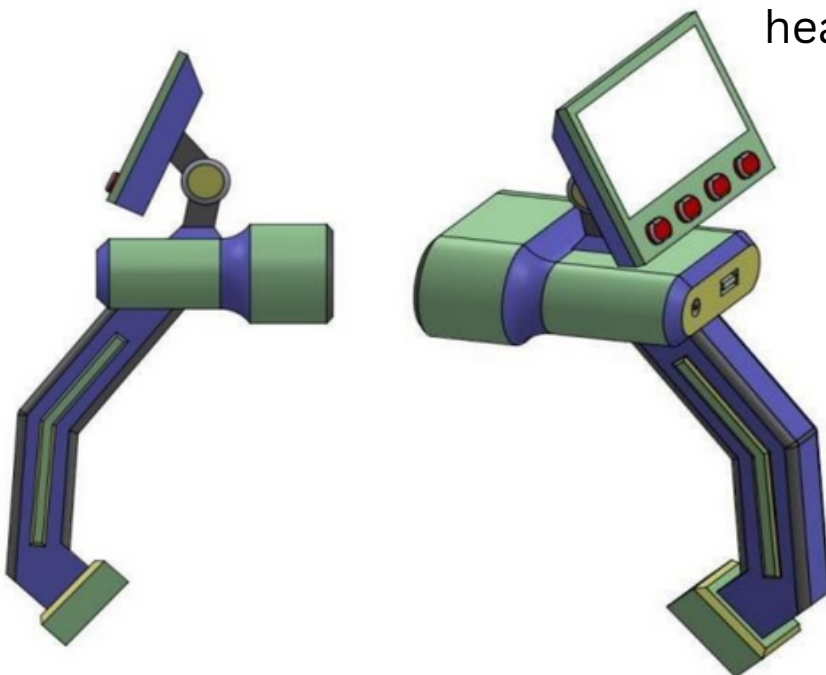
S-parameters of four elements MIMO antenna

IOT and AI based Cardiovascular Disease Detection device



**Prof.
Saurabh Tejpal**

Healthcare has always been one of the most important issues that people have cared about. Given the prevalence of diseases and their impact on people's lives, researchers are always looking for methods to improve medical services and promote public health. Cardiovascular diseases (CVDs) are the leading cause of death and are hence recognized as the most dangerous disease in the world.



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EXTC DEPARTMENT FACULTY

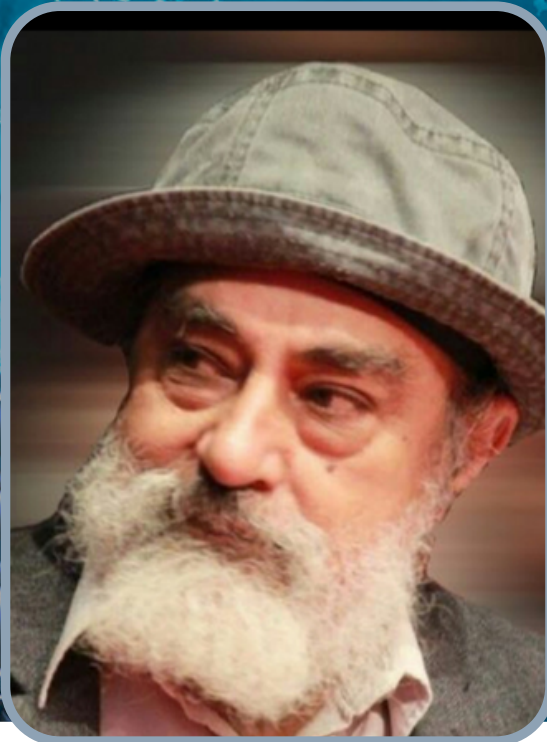
Year 2022-2023



Dr. Jyothi Digge
HOD



Dr. Rajiv K. Gupta
Professor



Dr. Manmohan N. Bhatia
Professor



Dr. Shilpa U. Kharche
Professor



**Mr. Ravindra P.
Shelkikar**

Associate Professor



**Dr. Mahadu A.
Trimukhe**

Associate Professor



Mr. Ashok P. Mane

Assitant Professor



**Mr. Mahesh M.
Kadam**

Assitant Professor



Mr. Pravin U. Dere

Assitant Professor



Mr. Vinod S. Chede

Assitant Professor



**Mr. Deepak S.
Kurule**

Assitant Professor



**Mrs. Rupali N.
Shekokar**

Assitant Professor



**Mr. Vilas N.
Moon**

Assitant Professor



**Mr. Virendra R.
Koli**

Assitant Professor



Mr. Atul S. Kadam

Assitant Professor



**Mr. Saurabh A.
Tejpal**

Assitant Professor

Technova



**Mrs. Anjali D.
Rochkari**

Assitant Professor



Mr. Vijaypal Yadav

Assitant Professor



**Dr. Vaibhav R.
Pandit**

Assitant Professor

Year 2022-2023



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Knowledge to Empower

Terna Engineering College

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