DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENINEERING (ECE)

VISION OF THE INSTITUTE

To be a unique Institution that enables students to become contributing Humans towards technology, business and sustainability of natural world.

MISSION OF THE INSTITUTE

Our mission is to facilitate students with harmonious teaching and experiential learning by integrating industrial and societal needs with curriculum, providing requisite infrastructure facilities and imbibing ethical values.

ABOUT THE DEPARTMENT:

Electronics and communication engineering synthesizes science, mathematics, technology, and application-oriented designs into world-class consumer products, timely microprocessors, state-of-the-art computers, advanced electronic components, and much more. From cutting-edge technology revolutions to real life applications, the innovations of electrical engineers continue to lead the future and elevate the standards in the marketplace. With a shortage of electrical engineering talent in the job market, the demand for graduates with an electrical engineering degree remains at an all-time high.

VISION:

➢ To be a centre for Excellence in Electronics and Communication Engineering by fostering professional competence with ethical values

MISSION:

➢ To embrace innovative teaching and learning methodologies that lead to the self-improvement of students.

➢ To embed contemporary technical knowledge and problem-solving skills in core and allied field by having collaboration with industry.

➢ To enhance the competency of students to meet the challenges posed in industry on employment through research and innovative ideas.

➢ To enlight our students with ethical, human values and leadership.

SRI RANGANATHAR
INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai)
(An ISO 9001:2015 Certified Institution)
Athipalayam, Coimbatore - 641 110. Web site: www.sriet.ac.in Ph: 0422 2697792

ISO 9001:2015

SRIET – ECE NEWSLETTER

ERNICKA July-December 2021

SRIET Profile:

Sri Ranganathar Institute of Engineering and Technology (SRIET) came into existence in 2011, out of an ardent desire of Dr. V. Narayanasamy to contribute manifold to the society that nurtured him. SRIET is an Innovative Educational Institution where the curiosity, creativity and intellectual joy of students all drive to academic excellence. Our Institution provides complex problem-solving skill and imbibes service to the public good. SRIET is defined by strong association and working in ways that excel in traditional boundaries.

LIST OF CONTENT:

➢ *Journals Publication (National/International)*

➢ *Conference Presented (National/International)*

➢ *Books Publication*

➢ *Programmes Organized*

➢ *Seminar/Workshop Attended*

➢ *FDP/STTP Attended*

➢ *Proposals submitted*

➢ *Extension Activity*

➢ *Interaction with outside world*

➢ *Student's Achievements*

Programmes Organized

- Ms.P.Jeyabharathi organized One day seminar on *"Importance of GATE Exam"* on 14.09.2021 by Mr.S.Sivakumar, Director, and gate forum.
- Dr.M.Meenakumari organized One day seminar on *"Roles of cryptographic algorithms in information security"* on 16.09.2021 by Dr.A.Kaleel Rahman.
- Mr.D.Silambarasan organised one day seminar on *"ADAS for Autonoums Vehicle"* on 21.10.2021 presented by Mr.T.SathyaNarayanan, Robert Bosch, and Coimbatore.

Seminar/Workshop Attended details:

- Attended Webinar series on *Machine learning for signal processing applications* from 22.7.21 to 24.07.21 at Kumaraguru college of technology
- Attended Webinar on *Secure data management on cloud computing* on 28.07.21 at Nehru group of Institutions
- Attended International Webinar on *How to identify right journal to publish* on 24-08-21 at Researcher Academy
- Attended 5 Days Online Workshop on *Internet of Things and its Applications* from 23-08-2021 to-27-08-2021 at CARE COLLEGE OF ENGINEERING
- Attended Two days seminar on *Recent Advancements in VLSI Signal Processing* from 17-09-2021 & 18-09-2021 at Mepco Schlenk Engineering College.
- Attended seminar on *Qualitative and Quantitative metrics in RAAF of NAAC* on 17-09-2021 at Rajalakshmi Engineering College.
- Attended seminar on *Patent opportunities in scientific research* on 04-09.2021 at Kumaraguru College of technology.
- Attended International webinar on *Financial Accounting and Enterprise Resourse Planning* on 03-09-2021 at Jayaraj Annapackiam College for Women.
- Attended Webinar on Webinar on "*AI on power system Compensation*" on 18.10.21 at RVS College of Engineering and Technology.
- Attended Webinar on *"WORLD SAVINGS DAY"* on 31.10.21 at Christ Nagar College, Maranallooor, and Trivandrum.

- Attended Online learning on *Digital Image Processing* on 05-10-2021 at Great Learning.
- Attended Online learning on *Application of Cloud Computing* on 12.10.21 at Great Learning.
- Attended Online learning on *Introduction to IoT* on 12-10-2021 at Great Learning.
- Online learning on *Introduction to K-Fold Cross Validation* on 22-10-2021 at Great Learning.
- Attended International webinar on *Applied Research* on 23.11.2021-24.11.2021 at Bharata Mata College, Thrikkakara.
- Attended Handson workshop on *Ethical hacking & cyber security* from 13.11.2021 to 14.11.2021 at Chaitanya Bharathi Institiue of Technology.
- Attended Workshop on *Application of Laser flow cytometry using optimized photo simulation of Bio active neurons for enhancement of personalized neuro prosthetics* from 25.11.2021-26.11.2021 at Dr.NGP Institute of Technology.

FED/STTP Attended

- Attended FDP on *Continuing Educational program on COMOS for Industry 4.0* at AVIT institute of Technology from 27.07.21 to 29.07.21.
- Attended 5 days FDP on *VLSI IP Design Approach to SRAM Compiler design* from 16.8.2021-20.8.21 at GM Institute of Technology
- Attended STTP on *Outcome based teaching Assesments and Evaluation* from 02-08-21 to 04-08-21 at Singhad school of Engineering Pune
- Attended 5 days STTP on *Block chain for digital Transformation* from 12-08-21 to 16-08-21 at Chaitanya Bharathi Institute of technology
- Two Days online Faculty Development Program on *National Education Policy 2020* from 26-08-2021 to 27-08-2021 at NEHRU INSTITUTE OF ENGINEERING & TECHNOLOGY
- Attended Three days FDP in *Embedded Writing skills* from 15-09-2021 to 17-09-2021 at SRM Engineering College.

- Attended Five days FDP on *Nuance of Research techniques* from 6-09-2021 to 10-09-2021 at Sri Krishna College of Engineering and Technology.
- Attended One day FDP on *Application of Image Processing in Health care* on 18-09-2021 at Solamalai College of Engineering.
- Attended Online FDP on *Integrated Circuits, FET and MOSFET using NPTEL* on 18-09-2021.
- Attended 5 Days FDP on *Data Science* from 25-10-2021 to 29-10.2021 at All India council Technical Education AICTE Training and Learning (ATAL).
- Attended Online FDP on *Flexible and wearable Antennas: recent advancements, Fabrication techniques and Applications* from 12.10.21 to 16.10.21 at National institute of Technical teachers Training and research.
- Attended FDP on *RF Applications using RFSoC devices* from 22.11.2021-26.11.2021 at Vel tech Rangarajan Sagunthala R&D Institute of Science and Technology.
- Attended FDP on *Remote Access to Intel FPGAs & SoCs for Embedded System Design* from 11.11.2021-13.11.2021 at Sastra Deemed to be University.

Books Publication

- Mrs P.Jeyabharathi Published Book chapter in Coordination of Facts Controller

Extension Activity

- Dr.M.Meenakumari Registered Digital Electronics and microprocessor and Analog communication course.
- Ms.P.Jeyabharathi Registered Introduction to semiconductor devices (12 weeks) and Principles of communication systems (8 weeks).
- Mrs.R.Tamilselvi, Mr.A.Periyanan, Mr.D.Silambarasan, & Mr.P.Dhilipkumar Registered Digital Image Processing (12 weeks).
- Ms.S.Pavithra Registered Principles of communication systems (8 weeks).
- Attended National Sports Day - GK & current affairs Quiz Program on 29-08-2021 at Dr.RADHAKRISHNAN HISTORY TEACHERS GROUP

Proposals submitted

- Submitted Project Proposal Topic on "Design and implementation on BPSK Modulator for VLSI Design" on 16-08-2021 at ISRO-Research Centre by Mr.D.Silambarasan, Mr.A.Periyanan and P.Dhilipkumar.

- Dr.M.Meenakumari submitted Iot Based **Industrial Automation and Iot Based Real Time Human Motion Detection and Tracking** on 11.09.2021 at TNSCST.

- Ms.P.Jeyabharathi submitted **Iot Assisted MQTT for Segregation and Monitoring Waste for Smart Cities and Iot Based Coal Mine Safety Monitoring and Alerting System** on 11.09.2021 at TNSCST.

- Mr.A.Periyanan submitted **An Embedded Based a Non-Contact Integrated Body – Ambient Temperature Sensor System Using Bluetooth and Rfid** on 11.09.2021 at TNSCST.

- Mrs.R.Tamilselvi submitted **Hand Gesture Operated Smart Walker Instrumentation and Health Assessment System** on 11.09.2021 at TNSCST.

- Mr.V.R.Mani submitted **Iot Based Crop Protection System against Birds and Wild Animal Attacks** on 11.09.2021 at TNSCST.

- Mr.D.Silambarasan submitted **Advanced Garbage Management for Detecting Non Bio Degradable Wastage Using Embedded System and Iot Based Ambulance Drone for Medical Emergencies** on 11.09.2021 at TNSCST.

- Mr.J.R.Nishanth submitted **Voice Controlled Autonomous Vehicle Using Arduino** on 11.09.2021 at TNSCST.

- Mr.P.Dhilipkumar submitted **Smart Drainage Monitoring System Using Iot** on 11.09.2021 at TNSCST.

- Ms.S.Pavithra submitted **Automation of Street Lights for Smart Cities Using Iot** on 11.09.2021 at TNSCST.

- Mr.D.Silambarasan & Mr.P.Dhilipkumar submitted proposal for **IMPACT OF INDUSTRY 5.0** on 24.10.2021 by TNSCST.

Student's Achievements

- Sasikala R attended webinar on Complete Beginners Course to Master Microsoft Excel on 25-08-2021.

- Dhanusha R attended 7 days Boot camp on Python &Data Analytics from 03-08-2021 to 09-08-2021 at Developer students clubs.

- Kalaiselvi. S & Anitha A attended National Sports Day - GK & current affairs Quiz Program on 29-08-2021at Dr.RADHAKRISHNAN HISTORY TEACHERS GROUP.

- Balaganapathi P, Sakthi Nalayini S, Praveen Kumar B, Santhana Krishnan S attended Quiz on Ancient and Mediaval India on 18-09-2021 at KURIAKOSE GREGORIOS COLLEGE.

- Arun C.V , Harish P, Sanjai Vaiko M.P, Gomathi R, Karthikeyini K, Chiranjeevi S attended Quiz on Series on Electric Vehicles-Xxii on 25-09-2021 at KPR Institute Of Engineering and Technology.

- Janani. V and Karthikeyini attended seminar on Digital Signal Processing on 23-09-2021 by Mc Graw Hill.

- K.Karthikeyini, S.Karthika, Venuprasad S, Sanjai Vaiko M P, Vidhya R, Saran T, and Balaganapathi.P attended seminar on Artificial Intelligence on Power System Compensation at RVS College of Engineering and Technology on 18-10-2021.

- J.Divya, and G Vinitha attended Test your Knowledge in Reasoning at VHNSN College of Arts and Science on 17-10-2021.

- J.Deepika, S.Reshma, K.Tamilselvi attended A National Level Technical Symposium at Er.Perumal Manimegalai College of Engineering on 21-10-2021.

- J.Deepika, S.Reshma & K.Tamilselvi attended Project Presentation at Er.Perumal Manimegalai College of Engineering on 21-10-2021.

- J.Deepika, S.Reshma & K.Tamilselvi attended Technical Quiz and Technical Hunt at Er.Perumal Manimegalai College of Engineering on 21-10-2021.

- Santhana Krishnan S, Vidhya R, & S.Sakthi nalayini attended National Level Youth Awakening Day Online Quiz at Parvathy's Arts and Science College on 16-10-2021.

- Gopinath N, S.Sakthi nalayini, & Santhosh.M attended World Student's Day quiz program at TRP Study circle on 22-10-2021.

➢ Janani V attended IoT Master Class at Pantech e-Learning from 19-09-2021 to 18-10-2021.

➢ Gopinath N, S.Sakthi nalayini, & Santhosh.M attended Gandhi Jayanti quiz program on 02-10-2021at TRP Study circle.

Interaction with outside world

➢ Mr.A.Periyanan, Mr.P.Dhilipkumar, and Ms.S.Pavithra visited ARK Automation for Industrial Visit on 25.10.2021

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Mrs.P.Jeyabharathi

HoD/ECE

Mr A.Periyanan

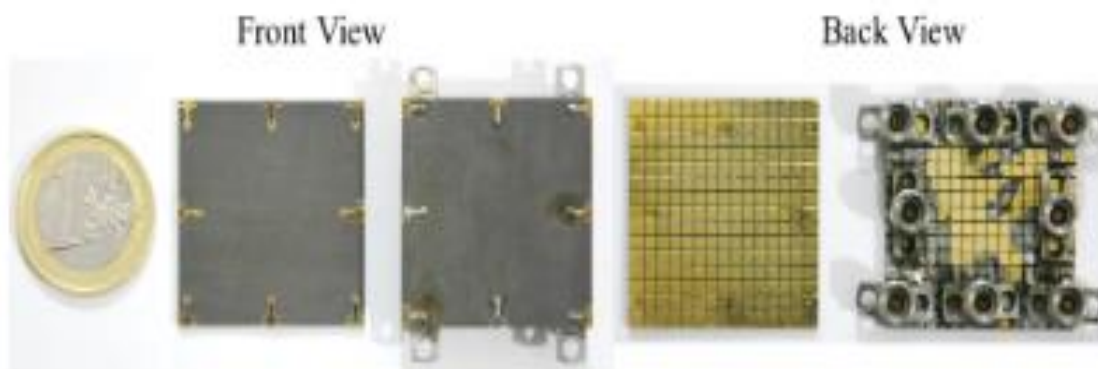**AP/ECE**

Mr V.R.Mani

AP/ECE

Students Team

M. Praveen-IV Year

Aswin-III Year

MIMO Antennas for Smart 5G Devices

Fabricated prototype of the 5G MIMO antennas.

- ❖ Multiple Input Multiple Output (MIMO) and/or array antennas can be a better solution especially when dealing with compact battery powered devices ew designs of compact 5G antennas have been presented.

- ❖ It has been observed from the review that the antennas presented are mostly single antennas and few array antennas as it is very difficult to achieve high gain using a single antenna.

- ❖ The array antennas, however, being fed through single port have the same capacity performance as that of single antennas.

- ❖ Due to this reason, the frequency channel is busy most of the time thus reducing data transfer rate. Also, the proposed antennas possess poor bandwidth thus limiting the number of frequency channels.

- ❖ Another issue associated with the 5G designs, presented in the literature, is that the antennas are mostly not in MIMO configuration which makes them un-suitable for devices demanding a high data rate and through-put performance. An H-shaped antenna is presented by Kuo and Wong for WLAN frequencies.

- ❖ The design covers dual band. However, it is not MIMO antenna, thus not suitable for high date rate smart devices.

- ❖ It is therefore a strong need to develop the MIMO antennas for 5G devices so that a higher data rate and a wider bandwidth can be made possible.