Centre for Communication Technologies

Centurion University
Shaping Lives...
Empowering Communities...

RC Coordinator: Mr. Prabhat K. Patnaik
Mentor: Prof. G.S.N. Raju

Centurion University of Technology and Management, Odisha, India

www.cutm.ac.in

Version: 1/2023

Message from the RC Coordinator

I am thrilled to present to you the Research Centre for Communication Technologies, an innovative hub that is reshaping the landscape of traditional communication models and embracing the future of connectivity. Our mission is to drive inclusive and equitable access to cutting-edge communication technologies, with a focus on advancing Sustainable Development Goal 9.

In today's digital era, communication technologies play a pivotal role in shaping the way we connect and exchange information. That's why we are at the forefront of integrating emerging technologies and trends into our research and development efforts. By doing so, we ensure that our work contributes to the advancement of communication systems that are efficient, reliable, and sustainable.

One of the areas we are actively exploring is the utilization of the ISM band in wireless communication. This frequency range presents vast opportunities for various applications and holds great potential for revolutionizing industries such as healthcare, manufacturing, and agriculture. By delving into the intricacies of the ISM band, we aim to uncover novel ways to leverage this spectrum for enhanced connectivity and improved efficiency.

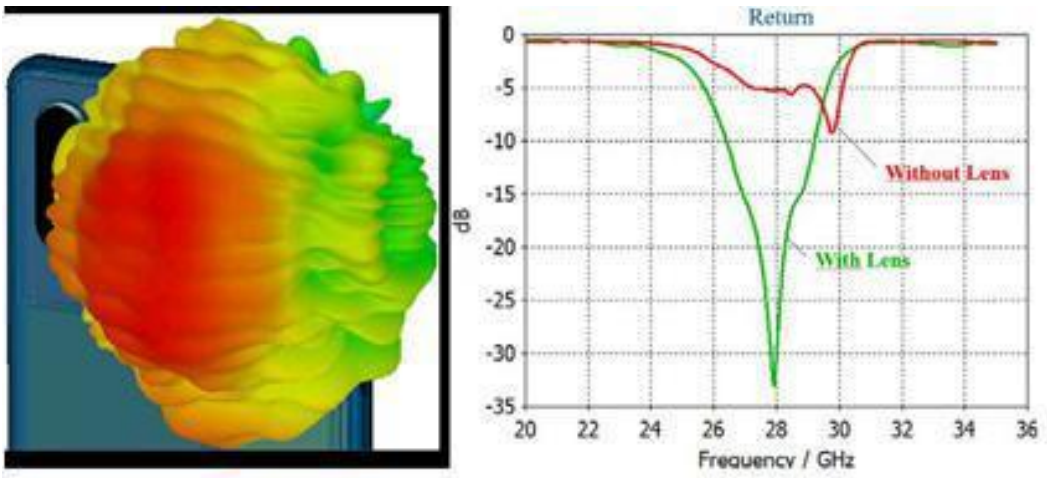
Additionally, we are deeply engaged in the study of 5G technology, which promises to usher in a new era of high-speed, low-latency wireless communication. Our team of researchers is dedicated to exploring the potential of 5G networks in transforming industries like autonomous vehicles, remote surgery, and smart cities. Through our investigations, we aim to unlock the full potential of 5G and contribute to its seamless integration into various sectors.

At the Research Centre for Communication Technologies, we are committed to staying at the forefront of technological advancements and adapting to the rapidly changing communication landscape. We believe in empowering individuals and industries by harnessing the transformative power of communication technologies. Join us on this exciting journey as we push the boundaries of communication research and embark on a path towards a more connected and technologically advanced future.

Prof. Prabhat K. Patnaik
Coordinator
Research Centre for Communication Technologies

About the Research & Application Centre

The Centre for Communication Technologies (CCT) inaugurated on 15th August 2020 with focus on research and development of antennas for application in the medical, military, day-to-day applications, and 5G systems. The targeted application areas are wearable antenna, antennas for 5G/6G and Study of 5G communication technologies. The focus of the research centre encompasses the sustainable development goal number, 9 (Industry, Innovation and Infrastructure).
The research centre collaborates with other in-house research centres and external Institutes for enriching the research capabilities.



Patents/Publications

Patents:04
Journal Publication:23
Conference Publications:04

Some selected list of Papers

1.Varma, D.R., Murali, M., Krishna, M.V. (2022). Design of Wearable Microstrip Patch Antenna for Biomedical Application with a Metamaterial. In: Chowdary, P.S.R., Anguera, J., Satapathy, S.C., Bhateja, V. (eds) Evolution in Signal Processing and Telecommunication Networks. Lecture Notes in Electrical Engineering, vol 839. Springer, Singapore. https://doi.org/10.1007/978-981-16-8554-5_40

2.Srikala, E.V.S.D.S.N.S.L.K., Murali, M., Vamshi Krishna, M., Raju, G.S.N. (2022). Array Thinning Using Social Modified Social Group Optimization Algorithm. In: Satapathy, S.C., Peer, P., Tang, J., Bhateja, V., Ghosh, A. (eds) Intelligent Data Engineering and Analytics. Smart Innovation, Systems and Technologies, vol 266. Springer, Singapore. https://doi.org/10.1007/978-981-16-6624-7_38

3.P. K. Patnaik, M. Malijeddi and D. C. Panda, "Wearable Microstrip Patch Antenna for Disease Detection and WiMAX Application," 2021 2nd International Conference on Range Technology (ICORT), 2021, pp. 1-4, doi: 10.1109/ICORT52730.2021.9582104.

4.Srikala EVSDSNSLK, M.Murali, M. Vamshi Krishna, GSN Raju, “Optimization of linear array using modified social group optimization algorithm”, Journal of Scientific and Industrial Research (JSIR),Vol. 80, April 2021, pp. 354-359

5.P. K. Patnaik, M.V,Krishna and D. C. Panda Design and Investigation of Hexagonal Shaped Wearable Antenna for Body Centric Wireless Communication” solid state technology, Volume: 63 Issue: 6, 2020.

6. K Ramya, PA Sunny Dayal, G S N Raju, "Comprehensive Background of Antennas for Modern & State of Art Applications" , Solid State Technology,Volume: 63 Issue: 5Publication Year: 2020

7. K Satyanarayana Raju, Prof. GSN Raju, Dr. M. Murali,“Implementation Of Corner Sliced Circularly Polarized Square Patch Antenna” Solid State Technology 63 No. 4 (2020).

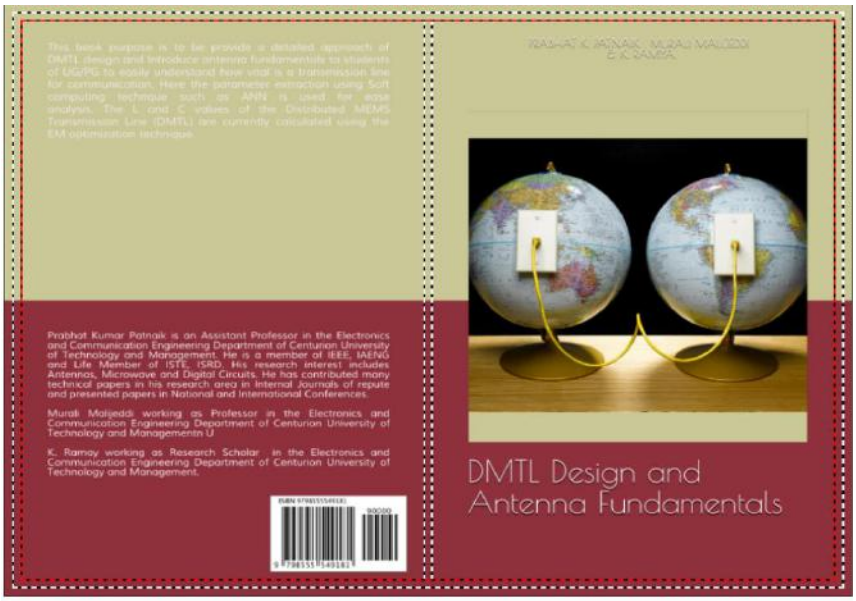
8.D Ramesh Varma, Dr.M.Murali, Dr.M.Vamshi Krishna, ”Review of wearable antennas and design of microstrip antenna with metamaterial”, Springer book chapter ICMEET 2021

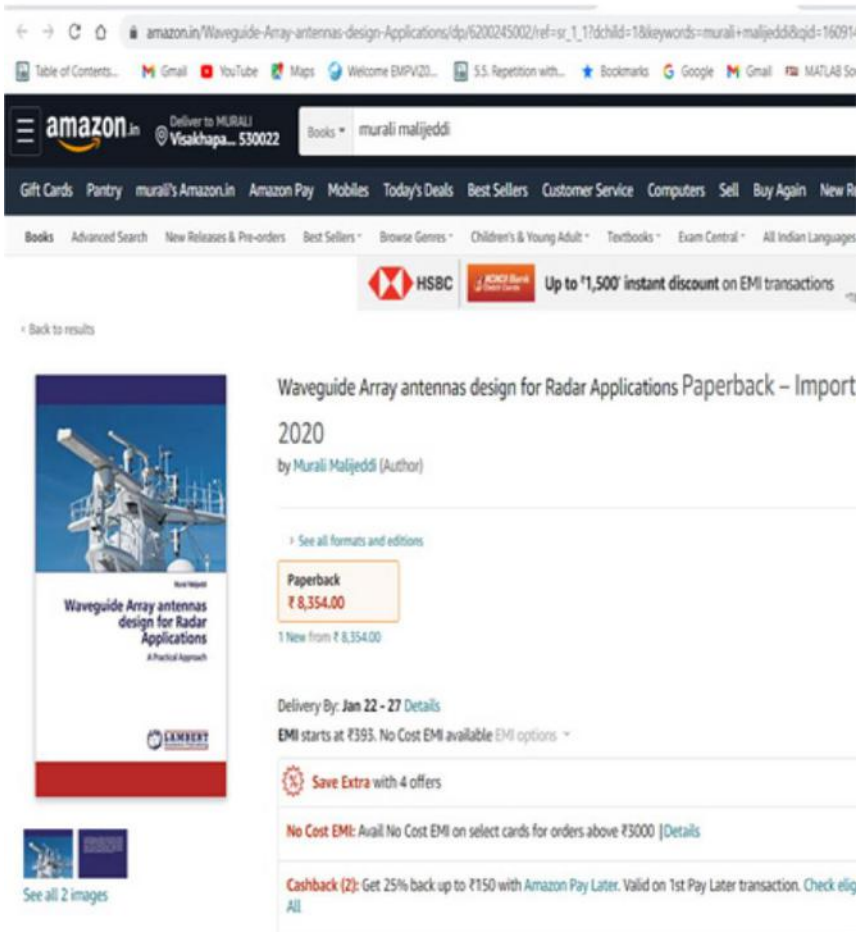
9.Ramesh Varma Dr.M.Murali, Dr.M.Vamshi Krishna, “ Sidelobe reduction in an Antenna Array using natured inspired Genetic Algorithm”, High Technology Letters, Volume 26, Issue 8, 2020ISSN NO : 1006-6748.

10.Ramesh Varma, Dr.M.Murali, Dr.M.Vamshi Krishna,“ A Survey on Synthesis of Linear antenna arrays, circular antenna arrays, conformal arrays and Beamforming Techniques, Solid state Technology” ,Solid State Technology ,Volume: 63 Issue: 4 ,2020.

11.K Satyanarayana Raju, Prof. GSN Raju, Dr. M. Murali “ Implementation Of Corner Sliced Circularly Polarized Square Patch Antenna K “, solid state technology, Volume: 63 Issue: 4 Publication Year: 2020, pages: 1321 to 1328.
12.V.S.D.S.N.S.L.K.Srikala, Dr.M.Murali ,M.Vamsi Krishna, GSN Raju, “Correction Techniques of Linear Array Antenna- A Short Review, TEST Engineering & Management 2020,ISSN: 0193-4120 Page No. 14182 – 14187.
13.Ramesh Varma, Dr.M.Murali , Dr.T.Sudeer Kumar “ A Survey Of Antenna ArrayOptimization Using Meta-HeuristicAlgorithm” International Journal Of Creative Research Thoughts (IJCRT) ,Volume 8, Issue 5 May 2020 | ISSN: 2320-2882
14. Prabhat K. Patnaik, Dhruba C. Panda, M. Vamshi Krishna,” Different Fractal Antenna Structure Analysis using ANN”, International Journal of Innovative Technology and Exploring Engineering (IJITEE), Vol.: 9 Issue:3 Page No.: 1787-1791 ,2020.
15. Prabhat K. Patnaik, Deepak Kumar Barik, Shibashis Pradhan, Subhraraj panda and Chandra Sekhar Dash “Parameter Analysis and Different Geometrical Approach for Ultra-Wideband Planar Antenna", Indian Journal of Natural Sciences, Vol 10, Issue 60, pp 19973-19980, 2020
16. Deepak Kumar Barik, Prabhat K Patnaik, Subhraraj panda and Shibashis Pradhan, “Analysis and Report Generation of 4G LTE Drive Test: A Case Studies ”, Indian Journal of Natural Sciences, Vol 10, Issue 60, pp 23379-23382, 2020
17. Deepak Kumar Barik, Subhraraj Panda, Shibashis Pradhan and Prabhat K Patnaik,” Drive test Analysis for a 3rd Generation of GSM System and its EMF Survey ”, Indian Journal of Natural Sciences, Vol 10, Issue 60, pp 23372-23377, 2020.

BOOKS/ BOOK CHAPTERS





FDP/Workshop Details

The team members participated in number of workshops/online courses/FDPs/Webinars on antennas, wearable devices, wireless communication etc.
Number of FDPs/Workshops Participated: 18

A few certificates snaps

Awards/Recognitions

Dr. Murali Malijeddi awarded with bestpaper award in FICTA-2021 , ICMEET-2021

9th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2021)
June 25 - 26, 2021

Springer

Jointly organized by the Departments of Computer Science & Engineering and Electronics & Communication Engineering.
National Institute of Technology Mizoram, India

CERTIFICATE OF MERIT

This is to certify that Malijeddi Murali of Centurion University of Technology and Management, Vizianagaram, AP, India. received "Best Paper Award" for presenting a paper titled "Array Thinning using Social Modified Social Group Optimization Algorithm" in FICTA-2021 held at National Institute of Technology Mizoram, India.

Springer

6th International Conference on
MICRO-ELECTRONICS, ELECTROMAGNETICS AND TELECOMMUNICATIONS
27th & 28th August, 2021
Organized by
Bhubaneswar Engineering College
Bhubaneswar, Odisha, India

BEST PAPER AWARD

For the paper titled
"Design of Wearable Microstrip Patch Antenna for Bio-medical Application with a Metamaterial"
Authored By

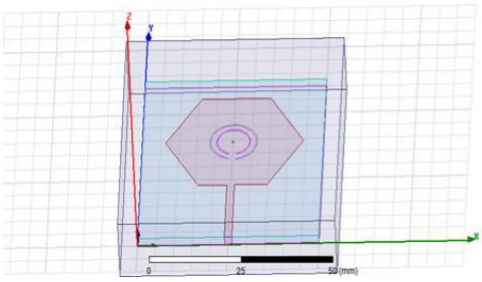
D.Ramesh Varma — Sri Vishnu Engineering College for Women(SVECW), Bhimavaram, AP
M.Murali — Centurion University of Technology and Management, Andhra Pradesh
M.Vamshi Krishna — Dhanekula Institute of Engineering and Technology, Vijayawada

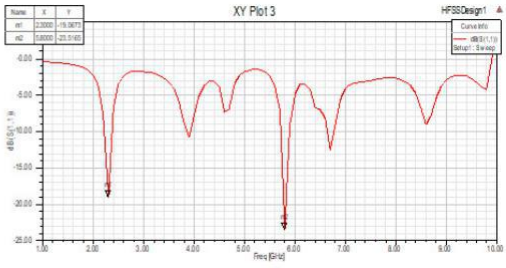
which was presented at ICMEET-2021.

Prof. (Dr.) P.Satish Rama Chowdary
Prof. (Dr.) Suresh Chandra Satapathy
Prof. (Dr.) B.N Biswal

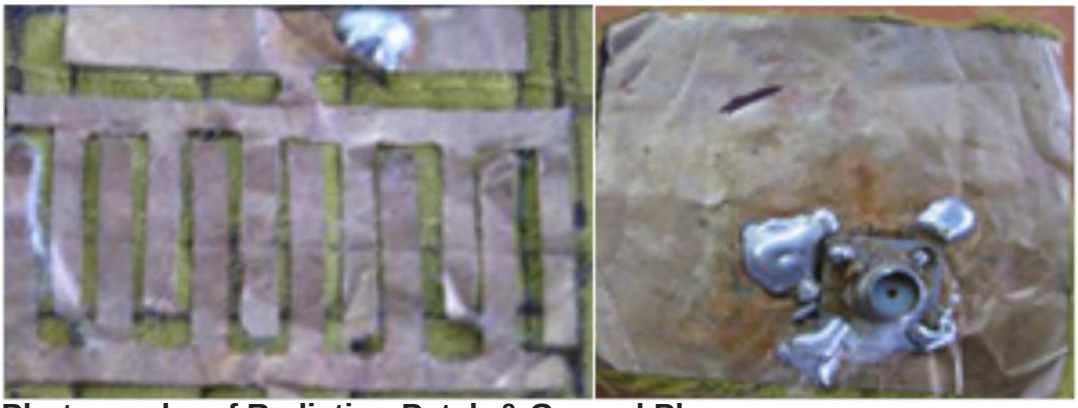
Ongoing Work

- Back radiation optimized Wearable Antenna
- Antenna Array Optimization
- Study of 5G using MATLAB



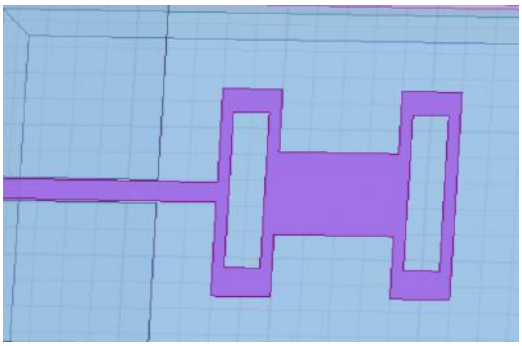


Hexagonal Antenna for Wi-Max Applications

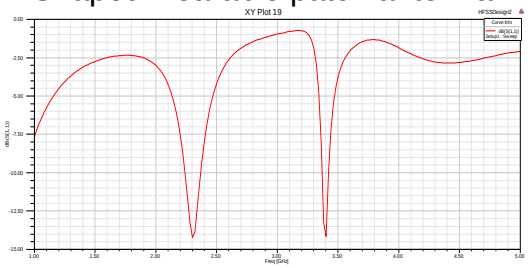


Photographs of Radiating Patch & Ground Plane

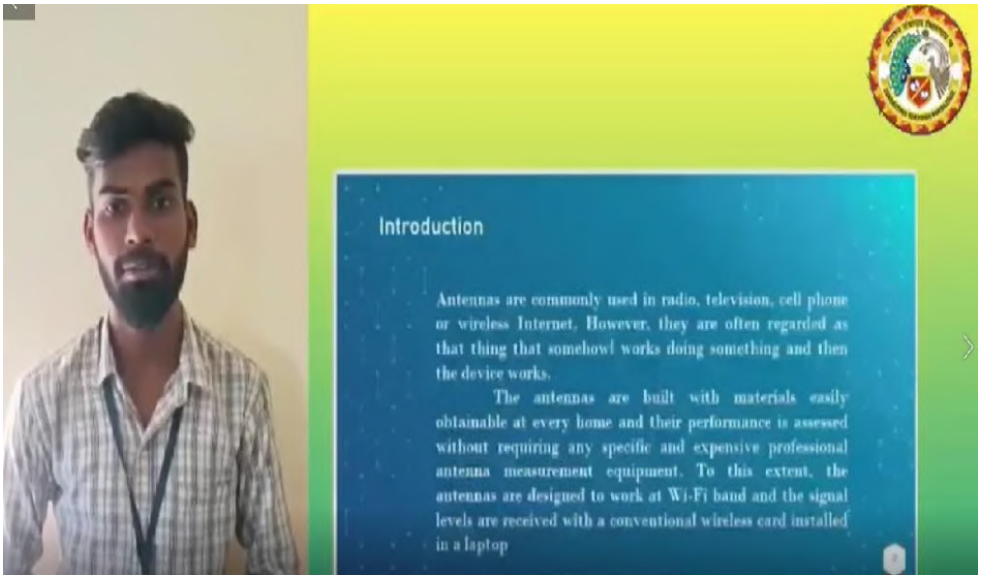
Photograph of H-Shaped wearable Antenna



H-Shaped wearable patch antenna



Simulation result of S11



Screenshots of a student presenting work during Internship

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