

FACULTY PROFILE



Dr.AL.VALLIKANNU, M.E, Ph.D

Professor & HoD

Department of Electronics and Communication Engineering

Hindustan Institute of Technology and Science

Email ID: ece@hindustanuniv.ac.in, vallikannu@hindustanuniv.ac.in

EXPERIENCE: 23 years

RESEARCH INTERESTS:

Mobile Adhoc Networks, Wireless Sensor Networks, Wireless Embedded Networking, IoT

Publications

Articles in National and International Journals:

1. Binu R and **Vallikannu R** “Thermal management in high-power Erbium Ytterbium doped fiber amplifiers for optimum efficiency” Microwave and Optical Technology Letters, SCIE, 2022.
2. Nayagam, V.S., Geetha, K., **Vallikannu, R.**, Mohanavel, V., Sathyamurthy, R. “Energy efficient tubular solar still for augmented yield using electrical heater” Energy Reports, 2022, 8, pp. 959–964, , IF: 3.56, SCIE and Scopus indexed
3. Jayanthi E and **Vallikannu R**, “Enhancing the performance of asymmetric architectures and workload characterization using LSTM learning algorithm”, Advances in Engineering Software, Volume 173, November 2022, 103266. SCI
4. **AL Vallikannu** et al., An IoT and Machine Learning-Based Model to Monitor Perishable Food towards Improving Food Safety and Quality, Journal of Food Quality, Hindawi&Wiely, 2022, IF: 3.16, SCI and Scopus indexed, 2022.

5. **Vallikannu Ret al.**, Investigating Rotor Conditions on wind Turbines using integrated Tree classifiers, *International Journal of Photo Energy*, Hindawi, 2022, IF: 2.11, SCI and Scopus indexed, online published, 2022.
6. **Vallikannu Ret.al.**, “Air Pollution Prediction Model For Estimating And Forecasting Particulate Matter Pm2.5 Concentrations Using SoSE-RMLP Approach” *International Journal of Global Warming*, accepted, published online 2022.
7. P.Mahalakshmi, **R Vallikannu**, “**New Miniature Dual Mode Rat-race Coupler Design for Autonomous Vehicles**” *International Journal of Engineering Trends and Technology* 2022, 70(1), pp. 212–215
8. Vinoth, M., **Vallikannu, R.**, Allen, S “**A disk-shaped complementary split ring resonator antenna for 5G mid-band applications**”*International Journal of Engineering Trends and Technology* 2021, 69(11), pp. 187–191
9. Vinoth, M., **Vallikannu, R.**“**Performance analysis of integrated array headed for 5G mid-band frequencies**”*International Journal of Engineering Trends and Technology*2021, 69(8), pp. 185–189
10. M Vinoth, **R Vallikannu**, “**A compact Inset Fed Microstrip Patch Antenna with Defected Ground Structure for Sub-6 GHz / 5G applications**”, *Solid State Technology*, Vol.63, No.5, 2020.
11. M Vinoth, **R Vallikannu**, “**CSRR Based Low profile Antenna for Wireless-5 and Wireless-6 Devices**”, *Solid State Technology*, Vol.63, No.5, 2020.
12. P.Mahalakshmi, **R Vallikannu**, “**A Planar Rat-Race Coupler based Retrodirective Analysis**” ,*Solid State Technology*, Vol.63, No.6, 2020.
13. K.Sakthidasan, Aby K Thomas, P ThirumaraiSelvan, **Vallikannu R**, “ **Autonomous prediction of Hazardous Gas Leakage using Machine Learning Technique and Wireless Sensor Networks**” *Journal of Green Engineering*, Vol.10, Issue: 7, July 2020.
14. P.Mahalakshmi, **Vallikannu R**, “**Design of Rat-Race based Retro-directive Arrays For sub 6GHzband**” *Journal of Critical Reviews*, Vol.7, Issue-5, pp. 1503-1512, 2020
15. Meenakshi B, S Shrividya, **Vallikannu R** and Anukumari “ **Design of safety control for Gas turbine using PLC and SCADA**” *Journal of Test Engineering and Management*, Vol. 83, pp. 12653 – 12662, April 2020.
16. **Vallikannu R**,VenkateshKanna T, Vimala Rani G, Sakthidasan K, “**An optimized assistive Epileptic seizure detection system for human environmental conscientiousness**” *Journal of Green Engineering*, Vol.10, Issue: 1, February 2020.

17. BC.Kavitha, **Vallikannu R**, Sakthidasan K, “**Delay-aware concurrent data management method for IoT collaborative Edge Computing Environment**” *Journal of Microprocessor and Systems*, Vol.9 , Issue.2, pp. 167-174, January 2020, <https://doi.org/10.1016/j.micpro.2020.103021>.
18. V. Kanpur Rani, **Vallikannu R**, K.Sakthidasan, “**Effect of Vehicle Pollution on Urban Areas and Various Corrective Measures**” *Journal of Green Engineering (JGE)*, Vol.9 , Issue.2, pp. 167-174, August 2019.
19. **Vallikannu R**, VenkateshKanna, Punithavathy T, “**Epileptic Seizure detection from EEG signals by adaptive wavelet support machines**” *International Journal of Engineering & Technology (UAE)*, 2018, 7, 4.36 Special Issue, Pp: 247-253.
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24. V.kanpur Rani and **AL.Vallikannu**, “**A pollution monitoring system for Vehicles in smart city**” *International Journal of Civil Engineering and Technology (IJCIET)*, Volume 9, Issue 11, November 2018, pp. 3059–3065, November 2018.
25. VenkateshKanna T, **Vallikannu R** , “**Analysis of Translation Invariant Wavelet Transform for Epileptic Seizure Detection Using Support Vector Machine**” *Indian Journal of Public Health Research & Development*, Vo.9(8), pp.No.1609 – 1611, August 2018, DOI: 10.5958/0976-5506.2018.00763.5.
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31. **Vallikannu R**, A George, S.K.Srivatsa, “**Performance Analysis of Autonomous Location Based Energy Efficient ACO Routing Protocol with dissimilar MANET Mobility Models**” *ARPN Journal of Engineering and Applied Sciences*, VOL. 10, NO. 4, MARCH 2015, pp.no.1804-1809.
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35. Punithavathy Mohan, **AL Vallikannu**,B.R.Shyamala Devi, B.C.Kavitha, “**Intelligent based brain tumor detection using ACO**”*International Journal of Innovative Research in Computer and Communication Engineering* , Vol.1, Issue 9, November 2013, ISSN(Online): 2320-9801
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38. HariKrishnan R and **AL Vallikannu**, “**EkInBot- A Humanoid Platform for Human Robot Interaction using Finger Gesture Identification**” *International Journal of Computer applications*, Vol.46, Issue 7, May 2012, (ISSN: 90975-8887).
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41. HariKrishnan R and **AL.Vallikannu**, “**Humanoid Locomotion Manipulated Using Dynamic Finger Gestures**” *International Journal of Image Processing and Vision Sciences (IJIPVS)*, Vol.1 Issue -2, pp. 82-85, ISSN(Print): 2278 – 1110.
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44. Santhosh Krishna BV , **AL Vallikannu**, Punithavathy Mohan, E.S.Karthik Kumar “**Satellite Image Classification using Wavelet Transform**” *International Journal of Electronics and Communication Engineering & Technology (IFECET)*, ISSN 0976 – 6464 (Print), ISSN 0976 – 6472(Online) Vol.1, Issue-1, Sep – Oct (2010), pp.117-124.
45. Santhosh Krishna BV , **AL Vallikannu**, “**Detecting Malicious nodes for secure routing in MANETs using Reputation based mechanism**” *International Journal of Scientific and Engineering research*, Vol.1, Issue 3, pp.1-8, December 2010, ISSN No. 229-5518.
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Paper Presentation in International and National Conferences:

1. **Vallikannu, R.**, Vinoth, M., Koushick, V., Ali, E.A.M. “**A Miniaturized Defected Ground Patch Antenna for ITS 5G-V2x-C Applications**” *International Conference on Computer Communication and Informatics, ICCCI, 2022*
2. **Vallikannu, R.**, Kiruthika, V., Kaviya, M., “**Recognition and Counting of an Object Using Yolo and CNN**”, *Lecture Notes in Networks and Systems, 2022, 373, pp. 289–296*
3. **Vallikannu, R.**, kanth, K., Kumar, L.S.P., Monisha, Karthik, “**Vehicle Entry Management System Using Image Processing**”, *Intelligent Systems Reference Library, 2022, 215, pp. 199–210*
4. Kavitha B.C, **R Vallikannu** “**IoT Assisted Predictive Maintenance and Worker Safety: An Initiative**” *Lecture Notes in Networks and Systems, 2022, 191, pp. 719–727*
5. [Binu, R.](#) and [Vallikannu, R.](#) “**Characterization of Microsecond Pulsed Amplification in a Core Pumped Erbium Doped Fiber Amplifier**”, *TENSYMP 2021 - 2021 IEEE Region 10 Symposium, 2021*
6. Vinoth, M. and **Vallikannu, R.** “**A Fractal Miniaturized Compact Antenna for V2X-5G Communication**” *5th International Conference on Computer, Communication, and Signal Processing, 2021, pp. 29–32.*
7. Jayanthi, E and **Vallikannu, AL**, “**A Review on Workload Characteristics For Multi Core Embedded Architectures Using Machine Learning And Deep Learning Techniques**”, *International Conference On Wireless Communications, Signal Processing And Networking, WISPNET 2021, PP. 456–461.*
8. Kanpurrani, V. and **Vallikannu, AL**, “**Emission Analysis Of Combustion Process From The Transportation In Smart City**”, *AIP Conference Proceedings, 2021.*
9. Vinoth, M. and Vallikannu, R, “**Design and Analysis of Metamaterial Patch Antenna 5G And X Band Applications**”, *International Conference On Computer Communication And Informatics, 2021.*
10. Mahalakshmi, P. and **Vallikannu R**, “**Compact Planar Retrodirective Antenna with a Rat-Race Coupler for Autonomous Car Applications**” *Lecture Notes in Electrical Engineering, 2021, 355, pp. 145–155*
11. **Vallikannu, R.**, Meenakshi, B., Subhash, V., Basha,, KiranKumar, C., “**Automated Rocker Rover for Terrain Surface Surveillance**” *Lecture Notes in Networks and Systems, 2021, 179 LNNS, pp. 225–235*

12. V Kanpur Rani, A L Vallikannu “**An Analysis of Air Quality by Vehicular Exhausts**” **Lecture notes in Electrical Engineering**”, *LNEE*, Pp-653-661.
13. Mahalakshmi, P. and Vallikannu, R, “**Design of Retrodirective Arrays Using Hybrid Couplers For Autonomous Car**”, *Lecture Notes On Data Engineering And Communications Technologies*,2021, 55, Pp. 295–304
14. V Kanpur Rani, A L Vallikannu. “**Air Pollution Monitoring System using Internet of Vehicles and Pollution Sensors**” in proceedings of 2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA), Dec 2020, 10.1109/ICECA49313.2020.9297372.
15. Binu R, Vallikannu R, “**Thermal Management Approach in Erbium Ytterbium Doped Fiber Amplifiers for Improved Efficiency**” in proceedings of *IEEE 2nd PhD Colloquium on Ethically Driven Innovation and Technology for Society (PhD EDITS)*, 10.1109/PhDEDITS51180.2020.9315317
16. M Vinoth, R Vallikannu, “**A compact triple slotted Rectangular Microstrip Patch Antenna with Metamaterial ground for Sub-6 GHz/5G communication**” in proceedings of IEEE Fifth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN), 2020, DOI:10.1109/ICRCICN50933. 2020. 9296184.
17. Kavitha B.C, R Vallikannu, “**IoT Assisted Predictive Maintenance& Worker Safety: An Initiative**”, in proceedings of Information and Communication Technology for Competitive Strategies (ICTCS 2020), published in Lecture Notes in Networks and Systems.
18. Kavitha.B.C and Valikannu R,“**IoT Based Intelligent Industry Monitoring System using Raspberry-Pi**”, in proceedings of 6th International Conference on Signal Processing and Integrated Networks SPIN 2019, March 2019, Amity University, Noida.
19. Vallikannu R,Punithavathy Mohan, Kavitha BC, SaiAdvait Narayanan, “**Reviewing the performance and quality of service of Satellite Communication and proposing the use of Multi Carrier CDMA and Speed Tracking Feature**” in proceedings of International Conference on Robotics, Automation and Non-destructive evaluation (RANE 2018), July 19 & 20 2018.
20. Kavitha BC, Deepa Jose, Vallikannu R, “**IoT Based Pollution Monitoring System Using Raspberry–Pi**” in proceedings of International Conference on Innovations and discoveries in Science, Engineering and Technology, April 2018, KCG college of Technology, Chennai.

21. Babu I .DeepaJose ,**Vallikannu R**, “ **Novel steganography system using MIMO for remote voice data interchanges**” in proceedings of International Conference on Innovations and discoveries in Science, Engineering and Technology, 17th & 18th April 2018.
22. Punithavathy K, **Vallikannu R**,Mithilesh , “**Bone tumor detection using Segmentation technique**” in proceedings of International Conference on Robotics, Automation and Non-destructive evaluation (RANE 2018), July 19 & 20 2018.
23. BC Kavitha, **Vallikannu R** “**IoT Assisted worker safety: An Initiative**”, in proceedings of 12th International Conference on Intelligent Systems and Control (ISCO’18), January 2018, Karpagam College of Engineering, Coimbatore.
24. BC.Kavitha and **Vallikannu R** “**The Internet of Things Model Architectures for Customized Applications: A Review**”, in proceedings of IETE 60th Annual Convention, 2017, Cochin. (Best paper Award- 3rd Prize).
25. Binu R, Samuel Verghese and **Vallikannu R**, “**Performance Optimization of Erbium Ytterbium Co Doped Fiber for High Power Amplifiers**” in proceedings of IETE 60th Annual Convention, 2017, Cochin (Best Paper Award – 2nd Prize) submitted to IETE Journal of Research.
26. **Vallikannu R**, BC.Kavitha, Punithavathy Mohan, “**Mobile Cluster Based Relay Reconfiguration Routing Protocol for Mobile Adhoc Networks**” in proceedings of National Conference on Intelligent Information Systems, February 2017.
27. Punithavathy K, **Vallikannu AL** “**Advanced Automobile Security System using IoT**” National Conference on Intelligent Information Systems, pp. 3, February 2017.
28. BC Kavitha, **Vallikannu R** “**Enhancement of Industrial Safety Using IoT**”, in proceedings of 1st International Conference on Advanced Technologies in Engineering, Management and Sciences-(ICATEMS’17), November 2017, Golden Valley Integrated Campus, Madanapalle, AP.
29. . RincyJuliet, **R. Vallikannu**and B. C. Kavitha, “**A novel design of hybrid microwave bandpass filter using lumped element and microstrip line technology**,” 2017 IEEE International Conference on Intelligent Computing and Control (I2C2), Coimbatore, India, 2017, pp. 1-4. doi: 10.1109/I2C2.2017.8321876. (Scopus Indexed)
30. Krishna Chaitanya, Lohith, Sheetal, **AL. Vallikannu** “**IoT based wireless display using Wi-Fi IEEE 802.11**” in proceedings of National Conference on Intelligent Information Systems, pp. 23, February 2017.

31. **Vallikannu R, A. George and S.K.Srivatsa, “Routing and Charging Scheme with Ferry Nodes in Mobile Adhoc Networks”**, in proceedings of 3rd IEEE sponsored International conference on Innovations in Information, Embedded and Communication Systems, Coimbatore, March 2016, Vol.5, pp.127-129. (Scopus Indexed)
32. **BenniloFernandes and AL.Vallikannu “Advanced Energy Balanced Routing Method with Energy Optimization for Wireless Sensor Networks”**, in proceedings of IEEE Sponsored 2nd International conference on Innovations in Information, Embedded and Communication Systems (ICIIECS'15), Coimbatore, March, 2015.
33. **KolusuNagesh and AL.Vallikannu, “Observation Robot with Automatic Docking System in Industrial Security”** in proceedings of International Conference on Computing, Renewable Energy & Communication (CESCON), Chennai, April 2015.
34. **Vallikannu R, A. George and S.K.Srivatsa, “A Novel Energy Consumption Model using Residual Energy Based Mobile Agent Selection Scheme (REMA) in MANETs”**, in proceedings of 2nd IEEE International Conference on Signal Processing and Integrated Networks (SPIN), Noida, New Delhi, pp. 334-339, February 2015, DOI: 10.1109/ SPIN.2015.7095410. (Scopus Indexed).
35. **Vallikannu R, A. George and S.K.Srivatsa, “Performance Analysis of Energy Efficient Location Based ACO Routing Algorithm for Mobile Ad Hoc Networks using BonnMotion Mobility Models”**, in proceedings of IEEE Sponsored 9th International Conference on Intelligent Systems and Control (ISCO), Coimbatore, Vol.3, pp. 816-821, 2015.
36. **VR.Prakash and AL.Vallikannu, “Survey in Image Processing”** in proceedings of National Conference on Signal & Image Processing, Kannur, Kerala, 2014.
37. **M.E.Sundaravel, AL.Vallikannu and PH.Rao, “Compact Slot Loaded Koch fractal Microstrip patch Antenna”** in proceedings of IEEE applied Electromagnetics Conference, Bhubaneswar, 2013.
38. **Jubin Sebastian and AL.Vallikannu “A Location Based ACO routing for MANETs using RSSI”** in proceedings of 2nd IEEE International Conference on Communication & Signal Processing, Melmaruvathur, Tamilnadu, 2013.
39. **R.Devanathan, Elizabeth Rani Jenius, AL.Vallikannu, “Simulation of Diffusion based Molecular Communication”** in proceedings of International Conference on Materials For Energy & Nano Convergence, Chennai, 2013.

40. Rebecca Lucy Eapen and **AL.Vallikannu**, “**Enhanced Power adaptive Source dependent Broadcasting Protocols for MANETs**” in proceedings of International Conference on Advances in Electrical & Electronics Engineering, Cochin, 2013.
41. **Vallikannu R**, A.George and S.K.Srivatsa, **A Review on Routing Protocols for Mobile Adhoc Networks**. Proc. International Conference on Mathematics in Engineering and Business Management, Chennai, 2012, Vol.2.
42. Naveen Kolla, Vamsi Krishna and **AL.Vallikannu** “**SeCtrl Algorithm Design for two wheeler**” International Conference on Digital Convergence ICDC, Chennai, 2011.
43. Naveen Kolla, Vamsi Krishna and **AL.Vallikannu**, “**Smart Puter Based SeCtrl for Two Wheeler**”, in the proceeding of International Conference on Electronics Systems, at NIT Rourkela, on 7-9th Jan 2011.
44. Punithavathy K and **AL Vallikannu**, “**Automatic Lung Segmentation in CT Images using watershed and wavelet transforms**” in proceedings of National Conference on NCBEBI’09, Chennai, 2009.
45. **Vallikannu AL**, “**ECC Based threshold cryptography for MANET**” in proceedings of National Conference on Emerging trends in Communication, Computing & Networks 2006.
46. S.Kathiravan and **AL.Vallikannu**, “**Adaptive Computing on Reconfigurable Network Processors**” in proceedings of International Conference on Communication and Networks, Chennai, 2011.
47. **Vallikannu R** and V.Jayaraman, “**VSPT in Diabetic Patients with Neurothesiometer**” in proceedings of CONET, Salem, 2005.

Patents

1. **Vallikannu R.**, M Vinoth, V Kanpur Rani, P Kumaraguru Diderot, ThangaPandi, KoushickVenkatesh, E. A. MOHAMMAD ALI “**COMPACT PLANAR STRIPLINE BOWTYPE ANTENNA FOR SUB-7GHz / Vo5G APPLICATIONS**” German Patent, Application No: 202022102758
2. **Vallikannu R.**, V Kanpur Rani “**AIR POLLUTION MONITORING SYSTEM USING INTERNET OF VEHICLES AND POLLUTION SENSORS**” Australian Patent, Application No: 2021102486
3. **Vallikannu R.**, P T SudalaiMuthu, Kumaraguru Diderot, B.C.Kavitha, “**ANALYSIS OF MAMMOGRAM IMAGES FOR ORGAN CANCER DETECTION USING SHAPE DESCRIPTORS**” Australian Patent, Application No: 2021106861
4. **Vallikannu R.**, M Vinoth., P. Kumaraguru Diderot “**A LOW-PROFILE DESIRED BEAM ANTENNA DEVICE FOR V2X-5G COMMUNICATION**”., Australian Patent., Application No: 2021105341

5. **Vallikannu R.,B.C.Kavitha., V Kiruthika, G.Vimala Rani** “A SYSTEM AND METHOD FOR DELAY-AWARE CONCURRENT DATA MANAGEMENT FOR INDUSTRIAL IOT: Australian Patent, Application No: 2021106046

PUBLICATIONS OF BOOKS

“Measurements and Instrumentation “-Charulatha Publications, December2003.

“Transmission Lines and Networks “- CharulathaPublications, July2004.

HONORS AND AWARDS

- **Encouragement Award** – Hindustan University.
- **Dr.APJ Abdul Kalam Award for Innovative Research-** by SEEE society.