




# TAGORE ENGINEERING COLLEGE

(A Member of Tagore Group of Institutions Chennai)

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai

ACCREDITED BY IQAC-NAAC WITH 'A' GRADE

## FACULTY PROFILE

PERSONAL DETAILS			
Name & Qualification	Dr B. Vijayalakshmi, M.E., Ph.D		
Designation	Professor & Head		
Department	ECE		
Total Teaching Experience	21 Years 10 months		
Total Research Experience	10 Years		
Total Industry Experience	2 Years		
Area of Specialization	Digital Image Processing, Optical Communication		
AICTE Faculty ID			
Email ID	usharanivijayalakshmi@gmail.com		
EDUCATIONAL DETAILS			
Degree	Branch/ Specialization	University	Year
Ph.D.	Digital Image Processing	Others – Sathyabama University	2011
M.E.	Optical Communication	CEG – Anna University, Chennai	January 2003
AMIETE	Electronics and Telecommunication Engineering	Institute of Electronics and Telecommunication Engineering	2000
RESEARCH / PUBLICATION DETAILS			
Publications in Journal			
<ul style="list-style-type: none"><li>Kalaivani Subbaian, Hayder M. A. Ghanimi, Vijayalakshmi Baba, S. Venkatesh, S. Lavanya, Sudhakar Sengan, “A non-invasive smart healthcare monitoring system based on the Internet of things”, Journal of Autonomous Intelligence (2024) Volume 7 Issue 6. doi: 10.32629/jai.v7i6.1571</li><li>R. Arshath Raja and B. Vijayalakshmi, "Design and Implementation of an Optimized Stochastic Vector Precoder to improve the Spectral Efficiency in Ultra-Dense Massive MIMO Networks," in International Journal of Mobile Network Design and Innovation, 200X Inderscience Enterprises Ltd., Accepted for Publication, Paper ID-164273.</li></ul>			

- R.Arshath Raja, B.Vijayalakshmi, “Improved spectral efficiency in massive MIMO ultra-dense networks through optimal pilot-based vector perturbation precoding”, Optik- International Journal for Light and Electron Optics, Vol. 273, 2023, 170370.
- R. Iniyavan and B. Vijayalakshmi, “Design and Development of Improved Coyote Optimization-based Adaptive Equalization Technique for ECG Signal Transmission”, “ECTI Transactions on Electrical Engineering, Electronics, and Communications”, ECTI Association, (ISSN: 1685-9545), Vol 21, No.1, pp. 1-14. 2023.
- Dr.S.Kalaivani, Syed Mohammed Omeir Hussain,Tharun, Aadi, Sayed Mohammed Thariq, B.Vijayalakshmi, “A Study on Modern Techniques (ICT) in Non Invasive Health Monitoring”, European Chemical Bulletin, Section A-Research paper, 2023,12 (Special Issue 1, Part-B), pp.3920-3928. ISSN 2063-5346.
- R. Iniyavan and B. Vijayalakshmi, “Efficient Hybrid Channel Estimation and Adaptive Equalization Framework in Wireless Communication System” International Conference on Sustainable Communication Networks and Application (ICSCNA), 2023.
- Sivashanmugavalli,B., B. Vijayalakshmi, and S. Samiullah. "CSRR-Loaded Crescent Slot Circular Antenna for WLAN/Wi-Fi Application", Journal of Circuits, Systems and Computers 31, no. 02 (2022): 2250025.
- R. Iniyavan and B. Vijayalakshmi, “A novel channel estimation model for broadband wireless communication system using hybrid heuristic-based invariable step-size zero-attracting NLMS algorithm”, International Journal of Intelligent Robotics and Applications, Springer publications pp. 1-15, August 2022. DOI:10.1007/s41315-022-00251-1
- R.Anitha, B. Vijayalakshmi, “Image Encryption Using Multi-Scroll Attractor and Chaotic Logistic Map”, Computers Materials & Continua, Vol.72, No.2, 2022, pp.3447-3463, doi:10.32604/cmc.2022.021519
- Sindhubala Kadirvelu, Walter D. Leon-Salas, Xiaozhe Fan, Jongseok Kim, Borja Peleato-Inarrea, Saeed Mohammadi and B. Vijayalakshmi, "A Circuit for Simultaneous Reception of Data and Power using a Solar Cell”, “IEEE Transactions on Green Communications and Networking, pp. 1-11, Print ISSN: 2473-2400, Online ISSN: 2473-2400, Digital Object Identifier: 10.1109/TGCN.2021.3087008, June 2021.
- B.Sivashanmugavalli, B. Vijayalaksmi, L.BadhreeRao, S.Samiulla.” Design of 4X4 CSRR Metasurface Loaded Patch Antenna”, TEST Engineering And Management, ISSN: 0193-4120, pp: 25245-25248, March-April 2020.

- R.Anitha, B.Vijayalakshmi, "Energy-Efficient Arithmetic & Logic Unit in Quantum Cellular Automata & CMOS Technology", Journal of Green Engineering (GEC), Vol.10, issue-7, pp. 3575-3596, July 2020. [Impact factor 0.55]
- S.Sadhish Prabhu , B.Vijayalakshmi,S.S.M Abdul Majeed, "Microstrip Patch Antenna Using Graphene As Super substrate", Journal of Advanced Research in Dynamical and Control Systems, ISSN 1943-023X, March 2019.
- R.Anitha, Dr.B.Vijayalakshmi , "Design of Arithmetic Unit in QCA Technology using Reversible Gates", International Journal of Pure and Applied Mathematics (ISSN Online: 1314- 3395), Academic Publications, Volume 119 No. 15 2018, pp.1041-1045, ISSN 1311-8080.
- K.Sindhubala and B.Vijayalakshmi, "Visible light communication using LED as receiver with the effect of ambient light" Optical and Quantum Electronics, vol.50 (1), pp.1-11, ISSN: 0306-8919, Jan 2018 (Scopus and Web of science indexed, Impact factor: 1.055).
- K. Sindhubala and B. Vijayalakshmi, "Design and implementation of optical receiver for visible light communication to reduce ambient light noise", Light & Engineering, Vol. 25, No. 2, June 2017, ISSN 0236-2945, pp.139-146. Impact factor 0.193, Scopus, Web of science indexed
- Iqra Muntaha, B.Vijayalakshmi, "Design of an Antenna for Medradio Band", International Journal of Science And Innovative Engineering & Technology, volume 1, May 2017 issue, ISBN 978-81-904760-9-6.
- K. Sindhubala and B. Vijayalakshmi, "Receiver Intend to Reduce Ambient Light Noise in Visible-Light Communication using Solar Panels", Journal of Engineering Science and Technology Review10 (1), pp.84- 90, April 2017, ISSN: 1791-2377
- Sindhubala Kadirvelu and Vijayalakshmi Baba, "Temperature Data Transfer Using Visible Light Communication", © Springer Nature Singapore Pvt. Ltd. 2017, Computer Communication, Networking and Internet Security, Lecture Notes in Networks and Systems 5, Edition 3, Chapter23, DOI 10.1007/978-981-10-3226-4\_3-pp23-33.
- K. Sindhubala and B. Vijayalakshmi, "Survey on Noise Sources and Restrained Techniques in Visible-Light Communication," International Journal of Light & Engineering, Vol. 24, No. 2, June 2016, ISSN 0236-2945, pp.107-117.
- K. Sindhubala and B.Vijayalakshmi, "Experimental Indoor Visible-Light Communication System Using Solar Panel Receiver in the Presence of Ambient Light Noise", International Journal of Light & Engineering, Vol. 24, No. 2, June 2016, ISSN 0236-2945, pp.96-106.

- K. Sindhubala and B. Vijayalakshmi, “Review on impact of ambient light noise sources and applications in optical wireless communication using LED”, International Journal of Applied Engineering Research, vol.10(12), ISSN 0973-4562, pp. 31115-31130, Aug.2015.
- K.Sindhubala and B.Vijayalakshmi, “Design and Implementation of Visible Light Communication System in Indoor Environment”, Asian Research Publishing Network (ARPN) Journal of Engineering and Applied Sciences, ISSN 1819-6608, Vol.10, No.7, April 2015, pp2882-2886.
- Mrs.R.Anitha, P.Sai lalith rohit and Dr.B.Vijaya Lakshmi, “Simulation of Quantum Circuits using QCAD”, International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 10 No.26, pp.21596-21600, April 2015.
- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Development of an Adaptive Triangulation Algorithm to Estimate Obstacle Distance from Stereo Images”, National Journal of Technology, NJT, March 2011, Volume 7, Number 1, ISSN 0973-1334, pp.84-89.
- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Evaluation of Dense Two Frame Stereo Correspondence Algorithm to define the Depth Cues from Imaging Sensors”, Journal of Computer Science and Applications, JCSA, International Research Publication House Volume 2, Number 1, July-December 2010, pp. 45-54.
- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Distinctive Feature Detection Algorithm through Clustered Mask of Stereo Images” CIIT International Journal of Digital Image processing, May 2010, Volume 2, No.5, ISSN 0974-9691, pp.141-146. [IF.0.65]
- B.Vijayalakshmi, B.sheelarani, N.Manoharan, “Normalized Cut and Pair Wise Clustering Image Segmentation for Obstacle Detection from 2D Images”, International Journal of Electrical Systems and Control (IJESC), July-December 2010, Volume 2, Number 2, ISSN 0975-3508 pp. 97–101
- B.Vijayalakshmi, B.sheelarani, N.Manoharan, “Surface Reconstruction of Stereo Images using Feature Extraction Algorithm”, International Journal of Mechanics Structural, International Research Publication House, Volume 1, Number 1 (2010), pp.17-27.
- B.Vijayalakshmi, Manoharan.N., sheelarani.B., “Real\_time Image Rectification of Stereo Images”, International Journal on Information Sciences and computing, 2007, Volume 1, Number 1, ISSN 0973-9092, pp.42-46.
- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Development of an Adaptive Triangulation Algorithm to Estimate Obstacle Distance from Stereo Images”, National Journal of Technology, NJT, March 2011, Volume 7, Number 1, ISSN 0973-1334, pp.84-89.

- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Evaluation of Dense Two Frame Stereo Correspondence Algorithm to define the Depth Cues from Imaging Sensors”, Journal of Computer Science and Applications, JCSA, International Research Publication House Volume 2, Number 1, July-December 2010, pp. 45-54.

### **Conference Proceedings**

- R. Arshath Raja and B. Vijayalakshmi, “Performance Analysis of Optimal Perturbing Vector with Double Decomposition Precoding in Massive MIMO Systems”, 2022 International Conference on Computer Power and Communications (ICSCC), Dec 2022.
- R.Anitha, B.Vijayalakshmi, “Simulation of Quantum Encoder & Decoder with Flip Bit Error Correction Using Reversible Quantum Gates”, in IEEE International Conference on “Recent trends in Electrical, Control and Communications” (RTECC ’18), March 20<sup>th</sup>-22<sup>nd</sup> 2018 at B.S.Abdur Rahman Crescent Institute of Science and Technology, pp.99-102.
- B. Sivashanmugavalli, B. Vijayalakshmi, “Performance Measures of Vivaldi Antenna with Parasitic Elements”, IEEE WiSPNET 2017 conference on 22-24 March 2017, pp.25-28. DOI: 10.1109/WiSPNET.2017.8299712, Chennai, India.
- S.Divya, B.Vijayalakshmi and K.Sindhubala, “Visible light communication based Heart beat rate, Blood pressure and Patient information transmission”, International Conference on Adaptive Technologies for sustainable growth [ICATS-2016], Namakkal, 13-14 May 2016, pp52-56.
- K.Sindhubala and B.Vijayalakshmi, “Simulation of VLC system under the influence of optical background noise using filtering technique”, International Conference on Computing, Communication, Nanophotonics, Nanoscience, Nanomaterials and Nanotechnology (12C4N-2K16), Mala, Thrissur, Kerala, 7-8 April, 2016
- M.Mayuri, B.Vijayalakshmi, “Biomedical Data Transmission Using Visible Light Communication”, IEEE Sponsored 2nd International Conference on Innovations in Information Embedded and Communication Systems ICIECS’15, Coimbatore, March19-20, 2015, volume 6, pp.18056-18060.
- K.Sindhubala and B.Vijayalakshmi, “Design and performance analysis of Visible Light Communication system through simulation”, 2015 IEEE International Conference on Computing and Communications Technologies, ICCCT’15, Chennai, Feb. 26-27, 2015, pp.215-220, ISBN:978-1-4799-7623-2/15/2015 IEEE.
- K.Sindhubala and B.Vijayalakshmi, “Ecofriendly Data Transmission in Visible Light Communication”, International Conference on Computer, Communication, Control and Information Technology”, C3IT 2015, Hoogly, Feb.7-8, 2015, PID 78, 978-1-4799-4445-3/15/2015 IEEE.

- K.Sindhubala and B.Vijayalakshmi, “Study of Visible Light Communication using RZ Modulation through Simulation”, International conference on Micro-electronics, Communication and Computation – 2015, hosted at San Diego, USA through virtual participation, 27-28 Feb.2015, pp.MC027-036.
- B.Vijayalakshmi, M.R.Ebenazar Jebarani, Sahaya Anselin Nisha, “Prevention from Dynamic Issues Owing to Surface Reflection Persuade the Climate Change”, International Conference on “Space Technology Services and Climate Change”, RSTSCC 2010, Chennai, Nov. 13-15, 2010, pp.464-468. 978-1-4244-9183-4/10-2010IEEE.
- B.Vijayalakshmi, sheela Rani.B., Manoharan.N., “Modeling and Rendering the 3D reconstruction from Stereo images”, Proceedings of 3<sup>rd</sup> National Conference on Recent trends in instrumentations Applications, RETINA 09, Kovilpatti, March 2009, pp. 214-220.
- B.Vijayalakshmi, B.sheela Rani, N.Manoharan, “Coordinate Estimation for 3D Reconstruction of a Stereo Image to the Obstacles for AGV Navigation”, A National Seminar & Examination on Non-Destructive Evaluation, NDE 2009, Trichy, Dec.2009, pp.37
- B.Vijayalakshmi, sheela Rani.B., Manoharan.N., “Qualitative analysis on the Baseline Parameter for Detection of Obstacle using 3D Scene Generation of Stereo Images”, TEAM TECH 2008, an International Conference on Total Engineering, Analysis and Manufacturing Technologies, Bangalore, Dec.2008, pp.134-135.
- B.Vijayalakshmi, sheela Rani.B., Manoharan.N., “Framework of 3D Scene Reconstruction from Two 2D images for Navigation and collaboration”, Proceedings of an International Conference on Emerging Scenarios in Space Science and Technological Applications, ESSTA 2008, Chennai, Nov.2008, pp.557-561.
- B.Vijayalakshmi, Kavipriya, Chitra.P, “Multiband PCB Etched Microstrip Antenna Design for Wireless System”, Proceedings of an International Conference on Emerging Scenarios in Space Science and Technological Applications, ESSTA 2008, Chennai, Nov.2008, pp.169-172.
- B.Vijayalakshmi, N.Manoharan, B.sheela Rani, “A Comparative study and analysis on the performance of cameras during image acquisition of stereovision”, an international workshop on Imaging NDE 2007,INDE 2007, Kalpakkam, April 2007, pp.17.
- B.Vijayalakshmi, Manoharan.N., sheela Rani.B., “Real time Image Rectification of Stereo Images”, TISC 2007, Proceedings of an International Conference on “Trendz in information Sciences and computing”, TISC 2007, Dec.2007, Chennai, Volume II, pp.887-890.

<ul style="list-style-type: none"> <li>B.Vijayalakshmi, N.Manoharan, B.sheela Rani, “Area based algorithm to detect obstacles in static and dynamic environment for autonomous ground vehicle”, Proc.of International Conference on Intelligent Systems and Control, ISCO 2006, Aug. 2006,CD Proceedings, pp. 485-489.</li> <li>B.Vijayalakshmi, N.Manoharan, B.sheela Rani, “A Simple Image Rectification Algorithm For Fast Stereovision Analysis”, National Symposium on Instrumentation, NSI-31, Oct.2006, Gwalior, Abstract no: 85, pp.60.</li> </ul>		
<b>Books / Chapters Published</b>		
<ul style="list-style-type: none"> <li>R.Anitha, B. Vijayalakshmi, S. Anusooya, V. Jean Shilpa, ““Bernstein Vazirani and Deutsch Algorithm:Made Easy in Qiskit”, Frontiers in Quantum Computing: New Research, Nova Publishers, June 2022.</li> </ul>		
<b>Fund Received</b>		
<ul style="list-style-type: none"> <li>Sponsored Research on “Design and development of noise reduction techniques for optical communications through solar cell to transmit and receive information”, carried under SERB-OVDF Scheme (Science and Engineering Research Board (SERB) Overseas Visiting Doctoral Fellowship) in association with Purdue University, USA, funded with RS.24.23 Lakhs by SERB, Department of science and Technology. Sanctioned by SERB vide secretary Dy.No./4831/S.E.R.B.</li> </ul>		
<b>Patent Applied / Published/Granted</b>		
<ul style="list-style-type: none"> <li>“Image Processing and Deep Learning Based Smart Tracking and Counting Vehicle”, 202241002464 A, 04/02/2022.</li> <li>“A complementary split ring resonator layer loaded circular microstrip patch antenna system with non-geometrical pattern of slots”, 202241040717 A, 22/07/2022.</li> </ul>		
CITATIONS	207	6
H-INDEX	8	
i10 index	7	
<b>RESEARCH GUIDANCE DETAILS</b>		
Sl.No	University	Supervisor ID / Reference
1	B S Abdur Rahman Crescent Institute of Science and Technology, Chennai	EC/13/06
2	Number of UG Scholars Guided	more than 62
3	Number of PG Scholars Guided	more than 30
4	Number of Ph.D. Scholars Guided	4

5	Number of Ph.D. Scholars Pursuing	2
<b>PROFESSIONAL SOCIETY MEMBERSHIP</b>		
Sl.No	Professional Society Name	Member ID
1	Institution of Electronics and Telecommunication Engineers	M063069
2	The Indian Society for Technical Education	LM83368
3	Computer Society of India	I1174332
4	Institution of Engineers	F1300085 Fellow member