

Faculty Profile

Personal Information

- **Name:** Dr. Premananda B.S.
- **Designation:** Associate Professor
- **Department:** Electronics and Telecommunication Engineering
- **Email:** premanandabs@rvce.edu.in
- **Phone:** +91-8068188434



Google Scholar / Research Gate / LinkedIn:

<https://www.scopus.com/authid/detail.uri?authorId=37091407700>

<https://publons.com/researcher/1621554/dr-premananda-bs/>

<https://www.researchgate.net/profile/Premananda-Bs-2>

<https://orcid.org/0000-0001-7740-7659>

<https://scholar.google.com/citations?user=9ufwpqUAAAAJ&hl=en&authuser=2>

<https://www.linkedin.com/in/dr-premananda-b-s-b1a54021/>

Domain of Expertise: VLSI Design and Signal Processing

Research Focus

- **Primary Area:** VLSI Design, ASIC/FPGA, Signal Processing
- **Allied Areas:**
 - Digital low-power VLSI design, Memory cell, Quantum-dot Cellular Automata (QCA)

Academic Qualifications

- **Ph.D.:** Electrical Engineering, Visvesvaraya Technological University, 2017
- **M.Tech:** Digital Electronics, Visvesvaraya Technological University, 2004
- **B.E.:** Electronics and Communication, Bangalore University, 2000

Professional Experience

Experience			
Sl. No.	Institute/College/Industry	Job Title	Duration (From-To)
1.	RV College of Engineering	Associate Professor	Nov. 2017 till date
2.	RV College of Engineering	Assistant Professor	Jan. 2012 to Oct. 2017

3.	East Point College of Engineering and Technology	Assistant Professor	Jan. 2007 to Jan. 2012
4.	East Point College of Engineering and Technology	Senior Lecturer	July 2005 to Dec. 2006
5.	Acharya Institute of Technology	Lecturer	Aug. 2004 to July 2005
6.	Kalpataru Institute of Technology	Lecturer	Nov. 2000 to Aug. 2002

Publications & Patents

Journal Publications

1. B.S. Premananda and V.C. Dheeraj, "Performance Analysis of Low-Power Multi-Threshold CMOS-based 10T SRAM Cell," *Journal of Electrical Engineering*, vol. 76, no. 3, <https://doi.org/10.2478/jee-2025-0030>, pp. 300-306, 2025.
2. P. Megha, B.S. Premananda, and Nagavika Kamat, "Area and Energy Optimized Hamming Encoder and Decoder for Nano-communication," *Journal of Electrical Engineering*, vol. 75, no. 3, pp. 229-236, 2024.
3. B.S. Premananda, Abdur Rehman, and P. Megha, "Area and Power Efficient AVLS-TSPC-Based Diffused Bit Generator for Key Generation," *Springer Circuits, Systems, and Signal Processing*, vol. 43, pp. 3103-3117, 2024.
4. B.S. Premananda, Shaswat Valivati, and Abdur Rehman, "TSPC-AVLS Based Low-Power 16/17 Dual Modulus Prescaler Design," *IETE Journal of Research*, vol. 70, issue 4, pp. 4149-4158, 2024.
5. B.S. Premananda, Sahithi Narsepalli, Sanya Mittal, and Abdur Rehman, "Area and Power Efficient Divide-By-32/33 Dual-Modulus Pre-Scaler using Split-path TSPC with AVLS for Frequency Divider," *Journal of Electrical Engineering*, vol. 74, no. 5, pp. 403-412, 2023.
6. B.S. Premananda, Megha Puttaswamy, and Nagavika Kamat, "Compact and Energy Efficient QCA Based Hamming Encoder for Error Detection and Correction," *Advances in Electrical and Electronic Engineering, Theoretical and Applied Electrical Engineering*, vol. 21, no. 2, pp. 120-126, June 2023.
7. B.S. Premananda, N. Sahithi, and Sanya Mittal, "AVLS-based 32/33 Pre-scaler for Frequency Dividers," *e-Prime - Advances in Electrical Engineering, Electronics and Energy*, vol. 4, pp. 1-5, June 2023, 100168, (<https://www.sciencedirect.com/science/article/pii/S2772671123000633>).
8. B.S. Premananda and Srivaths Sreedhar, "Low-Power Phase Frequency Detector Using Hybrid AVLS and LECTOR Techniques for Low-Power PLL," *Advances in Electrical and Electronic Engineering, Theoretical and Applied Electrical Engineering*, vol. 20, no. 3, pp. 294-303, September 2022.
9. B.S. Premananda, T.N. Dhanush, and Vaishnavi S. Parashar, "Area and Energy Efficient QCA Based Compact Serial Concatenated Convolutional Code Encoder," *Journal of Physics: Conference Series*, vol. 2161 (2022) 012025, pp. 1-11, 2022.

10. B.S. Premananda, K.J. Nikhil, and S.H. Managoli, "Low Power Square Root Carry Select Adder using AVLS-TSPC-based D Flip-flop," *Electrica Journal*, vol. 22, issue 1, pp. 109-118, January 2022.
11. B.S. Premananda, Samana H. Manalogoli, and K.J. Nikhil, "Area and Energy Optimized QCA Based Shuffle-Exchange Network with Multicast and Broadcast Configuration," *Advances in Electrical and Electronic Engineering, Theoretical and Applied Electrical Engineering*, vol. 19, no. 4, pp. 322-332, December 2021.
12. B.S. Premananda, T.N. Dhanush, Vaishnavi S. Parashar, and D. Aneesh Bharadwaj, "Design and Implementation of High Frequency and Low-Power Phase-Locked Loop," *U. Porto Journal of Engineering*, vol. 7, no. 4, pp. 70-86, November 2021.
13. B.S. Premananda, A. Bajpai, G. Shakthivel, and A.R. Anurag, "Low Power Add-One Circuit IPGL Based High-Speed Square Root Carry Select Adder," *Indian Journal of Science and Technology, IJST*, vol. 14, issue 9, pp. 776-786, March 2021.
14. B.S. Premananda, Nupur K. Neti, K.P. Ashwin, and Shreya V. Basu, "An Energy-Efficient, Coalition Game Theory based Hierarchical Routing Protocol for WSNs," *International Journal of Computers and Applications, TJCA*, vol. 43, issue 3, pp. 246-256, 2021.
15. S. Shreevalli and B.S. Premananda, "Estimation of Reverberation Time by Performing Acoustic Echo Cancellation Considering Near-end and Far-end Speech Signals," *International Journal of Emerging Trends in Engineering Research, IJETER*, vol. 8, no. 9, pp. 6351-6356, September 2020.
16. S. Sharath, Ramu Muthangi, and B.S. Premananda, "Development of Self-Assisted Voice Module for Visually Impaired," *International Journal of Emerging Trends in Engineering Research, IJETER*, vol. 8, no. 9, doi.org/10.30534/ijeter/2020/216892020, pp. 6247-6253, September 2020.
17. B.S. Premananda, U.K. Bhargav, and Kaza Sai Vineeth, "Compact QCA based Serial-Parallel Multiplier for Signal Processing Applications," *International Journal of Scientific and Technology Research, IJSTR*, vol. 09, issue 03, pp. 31-38, March 2020.
18. Anirvinnan P., Vaishnavi S. Parashar, D. Aneesh Bharadwaj, and B.S. Premananda, "Low Power AVLS-TSPC based 2/3 Pre-Scaler," *International Journal of Engineering and Advanced Technology, IJEAT*, ISSN: 2249-8958, vol. 9, issue 1, pp. 6687-6693, October 2019.
19. S. Harshitha, T.N. Dhanush, and B.S. Premananda, "A Novel QCA based Compact Scan Flip-flop for Digital Design Testing," *International Journal of Engineering and Advanced Technology, IJEAT*, ISSN: 2249-8958, vol. 9, issue 1, pp. 6681-6686, October 2019.
20. B.S. Premananda, S. Soundarya, and K.S. Chaitra Dechamma, "Compact QCA based JK Flip-Flop for Digital System," *International Journal of Innovative Technology and Exploring Engineering, IJITEE*, vol. 8, issue 12, pp. 3182-3185, October 2019.
21. B.S. Premananda and M.G. Ganavi, "Performance Analysis of Low Power 8-tap FIR Filter using PFAL," *International Journal of Innovative Technology and Exploring Engineering, IJITEE*, vol. 8, issue 8, pp. 365-374, June 2019.
22. B.S. Premananda and K.L. Sindhudhar, "Development of Hybrid Approach for Receiver Location Privacy in WSN," *International Journal of Engineering and Technology, IJET*, vol. 7, issue 4.39, pp. 123-127, December 2018.
23. B.S. Premananda, Nagesh Nazare, Pradeep S. Bhat, and Nayana R.J., "Design and Analysis of Adiabatic Vedic Multipliers," *International Journal of Pure and Applied Mathematics, IJPAM*, vol. 119, issue no. 14d, pp. 59-65, October 2018.

24. Shashank S. Bhat and B.S. Premananda, "Hardware Implementation of Block-Cipher Scalable Encryption Algorithm," *International Journal of Research in Engineering and Applied Sciences*, IRJEAS, vol. 6, issue 11, pp. 80-93, November 2016.
25. H.N. Sathvik and B.S. Premananda, "Exposing Digital Image Forgeries by Illumination Color Classification," *International Journal of Innovative Research in Science, Engineering and Technology*, IJIRSET, vol. 4, issue 8, pp. 7443-7449, August 2015.
26. C.S. Chetan, Vinay B. Biradar, P.G. Vishwas, and B.S. Premananda, "Performance Enhancement of 32-bit Carry Select Adder by Employing RTL Optimization Techniques," *International Research Journal of Engineering and Technology*, IRJET, vol. 2, issue 3, pp. 2273-2277, June 2015.
27. B.S. Premananda and B.V. Uma, "Dominant Frequency Enhancement of Speech Signals to Improve Intelligibility and Quality," *International Journal of Image, Graphics and Signal Processing*, IJIGSP, vol. 7, no. 6, pp. 29-37, May 2015.
28. B.S. Premananda and B.V. Uma, "Selective Frequency Enhancement of Speech Signal for Intelligibility Improvement in Presence of Near-end Noise," *Elsevier Procedia Computer Science* (ScienceDirect), vol. 49C, pp. 244-252, April 2015.
29. B.S. Premananda and B.V. Uma, "Speech Enhancement in Presence of Near-end Noise by Incorporating Auditory Masking in Frequency Domain," *International Journal of Scientific & Engineering Research*, IJSER, vol. 5, issue 11, pp. 621-627, Nov. 2014.
30. B.S. Premananda and B.V. Uma, "Incorporating Auditory Masking Properties for Speech Enhancement in Presence of Near-end Noise," *International Journal of Computer Applications*, IJCA, vol. 106, no. 15, pp. 1-6, November 2014.
31. B.S. Premananda and B. Ravisha, "Listening Enhancement in Near End Noisy Environment for Intelligibility Improvement," *International Journal of Computer Networks and Wireless Communications*, IJCNWC, vol. 4, no. 3, pp. 221-225, June 2014.
32. B.S. Premananda, Manoj, and B.V. Uma, "Near-End Perception Enhancement using Dominant Frequency Extraction," *International Journal of Advanced Engineering and Research Development*, IJAERD, vol. 1, no. 6, pp. 411-417, June 2014.
33. M. Sunil, R.D. Ankith, G.D. Manjunatha, and B.S. Premananda, "Design and Implementation of Faster Parallel Prefix Kogge Stone Adder," *International Journal of Electrical and Electronic Engineering and Telecommunications*, IJEETC, vol. 3, no. 1, pp. 116-121, January 2014.
34. B.S. Premananda, Samarth S. Pai, B. Shashank, and Shashank S. Bhat, "Design and Implementation of 8-Bit Vedic Multiplier", *International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering*, IJAREEIE, vol. 2, issue 12, pp. 5877-5882, December 2013.
35. B.S. Premananda and Y.M. Ravindranath, "Design and Synthesis of 16-bit ALU using Reversible Logic Gates," *International Journal of Advanced Research in Computer and Communication Engineering*, IJARCCCE, vol. 2, issue 10, pp. 4137-4141, October 2013.
36. A.N. Kavan and B.S. Premananda, "Implementation of Simplified AES algorithm for Wireless Sensor Nodes on FPGA," *International Journal of Scientific and Engineering Research*, IJSER, vol. 4, issue 8, pp. 2154-2159, August 2013.
37. B.S. Premananda and B.V. Uma, "Speech Enhancement Algorithm to Reduce the Effect of Background Noise in Mobile Phones," *International Journal of Wireless and Mobile Networks*, IJWMN, vol. 5(1), pp. 177-189, February 2013.

38. S. Rakhi, B.S. Premananda, and Mihir Narayan Mohanty, "Synthesis of DSP Systems using Data Flow Graphs for Silicon Area Reduction," *International Journal of Computer Science and Information Technologies*, IJCSIT, vol. 1, no. 5, pp. 337-341, 2010.

Conference Papers

1. N. Sukrutha, K. Ligade, P.R. Patil and P.B. Siddaih, "Performance Analysis of 4-Bit Hybrid Low Power Carry Select Adder using FinFET Technology," *Proceedings of 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES)*, Tumakuru, India, 21st and 22nd March 2025, pp. 1-6.
2. B. Ajay Sabareesh, P.K. Moulya, M.A. Hussain, and B.S. Premananda, "Performance Evaluation of Adder Topologies Integrated into MAC Units and MLP Model for Digit Recognition," *Proceedings of 5th International Conference on Circuits, Control, Communication and Computing (I4C)*, Bengaluru, India, 4th and 5th October 2024, pp. 276-281.
3. K. Jayasurya, R. Ajith, and B.S. Premananda, "Area and Power Optimized RTL to GDS II Flow of a Telecommunication Receiver Core," *Proceedings of 5th International Conference on Circuits, Control, Communication and Computing (I4C)*, Bengaluru, India, 4th and 5th 2024, pp. 207-212.
4. A. Dhakad, S. Singh, and B.S. Premananda, "QRS Peak Detection Using Statistical False Peak Elimination and Derivative Search Back," *Proceedings of Second International Conference on Networks, Multimedia and Information Technology (NMITCON)*, Bengaluru, India, 9th and 10th August 2024, pp. 1-6.
5. S. Nipun, H. Raghuram, and B.S. Premananda, "8T-based Low-power CAM cell for Binary CAM Arrays," *Proceedings of Second International Conference on Networks, Multimedia and Information Technology (NMITCON)*, Bengaluru, India, 9th and 10th August 2024, pp. 1-6.
6. A. Rehman, P. Megha, and B.S. Premananda, "FPGA-Based Efficient MLP Neural Network for Digit Recognition," *Proceedings of International Conference on Integration of Computational Intelligent System (ICICIS)*, Pune, India, 1st to 4th November 2023, pp. 1-7.
7. H. Raghuram, Vishnu, B. Vaishak, and B.S. Premananda, "Design and Analysis of Power and Area Efficient 4-2 Compressor Circuit for Tree Multiplier," *Proceedings of 7th IEEE International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS)*, Bengaluru, India, 2nd to 4th November 2023, pp. 1-6.
8. Shaswat Valivati, Sumanjay Dutta, Shashi Jain, and B.S. Premananda, "PCA and MLE-Based Statistical Factor Models for Asset Pricing," *Proceedings of IEEE International Conference on Network, Multimedia and Information Technology (NMITCON)*, Bengaluru, India, 1st and 2nd September 2023, pp. 1-7.
9. Sushma Bennur, Madhav Pai, Tiptur Shivaiah Raghu, and B.S. Premananda, "Automated Triaging of Gate Run Test Results using Humio Tool," *Proceedings of IEEE North Karnataka Subsection Flagship International Conference (NKCon)*, Vijaypur, India, 21st and 22nd November 2022, pp. 1-8.
10. Dhanyaa Bharadwaj and B.S. Premananda, "Transition of Cloud Computing from Traditional Applications to the Cloud Native Approach," *Proceedings of IEEE North Karnataka Subsection Flagship International Conference (NKCon)*, Vijaypur, India, 21st and 22nd November 2022, pp. 1-8.

11. C. Skanda, B. Srivatsa, and B.S. Premananda, "Secure Hashing using BCrypt for Cryptographic Applications," *Proceedings of IEEE North Karnataka Subsection Flagship International Conference (NKCon)*, Vijaypur, India, 21st and 22nd November 2022, pp. 1-5.
12. Piyush Anand and B.S. Premananda, "Secure Bootloader for Connectivity MCU," *Proceedings of IEEE 2nd Mysore Sub Section International Conference (MysuruCon)*, Mysuru, India, 16th and 17th October 2022, pp. 1-7.
13. Sushma Bennur, Dhanyaa Bharadwaj, Piyush Anand, and B.S. Premananda, "Face Mask Detection and Face Recognition of Unmasked People in Organizations," *Proceedings of IEEE 3rd International Conference on Electronics and Sustainable Communication Systems (ICESC)*, Coimbatore, India, 17th to 19th August 2022, pp. 1212-1218.
14. K.J. Nikhil and B.S. Premananda, "Area and Energy Optimized QCA-Based Binary to Gray Code Converter", *Advances in Intelligent Computing and Communication. Springer Lecture Notes in Networks and Systems*, vol. 430, pp. 197-205, 2022.
15. N.S. Srihari, S. Amruth Kumar, and B.S. Premananda, "Design and Simulation of a Direct-PSK Based Telecommand Receiver for Small Satellite", *Evolutionary Computing and Mobile Sustainable Networks. Springer Lecture Notes on Data Engineering and Communications Technologies*, vol. 116, pp. 849-863, 2022.
16. Mahesh Kurtkoti, B.S. Premananda, and Vishwavardhan Reddy Karna, "Performance Analysis of Machine Learning Algorithms in Detecting and Mitigating Black and Gray Hole Attacks", *Innovative Data Communication Technologies and Applications. Springer Lecture Notes on Data Engineering and Communications Technologies*, vol. 96, pp. 945-961, 2022.
17. T.N. Dhanush, V.S. Parashar, and B.S. Premananda, "Analysis of QCA-Based Serial Concatenated Convolution Coding Encoder for Error Correction", *Recent Trends in Electronics and Communication, Springer Lecture Notes in Electrical Engineering*, vol. 777, pp. 393–403, 2022.
18. D. Aneesh Bharadwaj, V.S. Parashar, T.N. Dhanush, and B.S. Premananda, "Design and Implementation of Phase Frequency Detectors for Low-Power PLL", *Recent Trends in Electronics and Communication, Springer Lecture Notes in Electrical Engineering*, vol. 777, pp. 381–391, 2022.
19. P. Anirvinnan and B.S. Premananda, "Data and Bandwidth Analysis of CAN Bus in a System Using MATLAB", *Recent Trends in Electronics and Communication, Springer Lecture Notes in Electrical Engineering*, vol. 777, pp. 225–234, 2022.
20. D.A. Bharadwaj, P. Anirvinnan, and B.S. Premananda, "A Low Power Diffused Bit Generator as a TRNG for Cryptographic Key Generation," *Proceedings of IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER)*, 2021, pp. 187-192, 19th and 20th Nov. 2021.
21. C. Skanda, B. Srivatsa, and B.S. Premananda, "Design of Compact and Energy Efficient Banyan Network for Nano Communication," *Proceedings of IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER)*, Nitte, India, 19th and 20th Nov. 2021, pp. 135-140.
22. K.J. Nikhil and B.S. Premananda, "Generation of Flash Containers in PDX Format for Automotive Secure Gateway," *Proceedings of IEEE Mysore Sub Section International Conference (MysuruCon)*, Hassan, India, 24th and 25th Oct. 2021, pp. 272-278.

23. S.R. Prasanna, M. Beney, and B.S. Premananda, "Design and Implementation of Power and Area Efficient Phase Frequency Detector," *Proceedings of IEEE Mysore Sub Section International Conference (MysuruCon)*, Hassan, India, 24th and 25th Oct. 2021, pp. 154-158.
24. S.R. Prasanna and B.S. Premananda, "Performance Analysis of MD5 and SHA-256 Algorithms to Maintain Data Integrity," *Proceedings of 6th IEEE International Conference on Recent Trends on Electronics, Information, Communication & Technology (RTEICT)*, 27th and 28th August 2021, Bangalore, India, pp. 246-250.
25. Maria Bency, S.R. Prasanna, G.P. Shreya, and B.S. Premananda, "PFD with Dead zone based Low Power Modified Phase Lock Loop using AVLS Technique," *Proceedings of 6th IEEE International Conference on Communication and Electronics Systems (ICCES)*, Coimbatore, India, 8th to 10th July 2021, pp. 212-217.
26. B.S. Premananda, C. Skanda, and B. Srivatsa, "Area and Energy Efficient QCA based Decoder," *Proceedings of 6th IEEE International Conference on Communication and Electronics Systems (ICCES)*, Coimbatore, India, 8th to 10th July 2021, pp. 117-122.
27. A. Peddireddy, B.S. Sachin, H.R. Rohit, and B.S. Premananda, "Adaptive Beamforming Using LMS Algorithm for Planar Arrays and Subarrays", *Lecture Notes in Networks and Systems*, vol. 202, doi.org/10.1007/978-981-16-0695-3_34, pp. 347-356, 25th and 26th November 2020.
28. B.S. Premananda, K.J. Nikhil, and Nirmal Jain, "MEC S-box based PRESENT Lightweight Cipher for Enhanced Security and Throughput", *Proceedings of IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics, DISCOVER-2020*, Udupi, India, 30th and 31st October 2020, pp. 212-217.
29. B.S. Premananda and T.N. Dhanush, "Design and Analysis of QCA based Area Efficient 4×8 SRAM Array", *Proceedings of IEEE International Conference on Advances in Computing, Communication and Materials (ICACCM)*, Dehradun, India, 21st and 22nd August 2020, pp. 283-288.
30. T.N. Dhanush, S. Harshitha, and B.S. Premananda, "Design of QCA based Three-Stage Pseudo Random Number Generator", *Proceedings of IEEE International Conference on Advances in Computing, Communication, and Materials (ICACCM)*, Dehradun, India, 21st and 22nd August 2020, pp. 233-238.
31. H.R. Rohit, B.S. Sachin, P. Aditya, Bhishm Tripathi, and B.S. Premananda, "Performance Evaluation of Various Beamforming Techniques for Phased Array Antennas," *Proceedings of IEEE 11th International Conference on Computing, Communication and Networking Technologies, ICCCNT-2020*, IIT Kharagpur, India, 1st to 3rd July 2020, pp. 1-6.
32. Nagesh N. Nazare and B.S. Premananda, "Low-Power PFAL based Speculative Han-Carlson Adder for Signal Processing Applications," *Springer Lecture series, System Reliability, Quality Control, Safety, Maintenance and Management, Applications to Electrical, Electronics and Computer Science and Engineering*, pp. 646-654, 2020.
33. Nagesh N. Nazare, B.S. Premananda, Pradeep Bhat, and Nayana Jambhe, "Low-Power 8-Bit Adiabatic Barrel Shifter for DSP Applications," *Springer Advances in Intelligent Systems and Computing book series*, vol. 1089, pp. 151-163, 22nd to 24th December 2018.
34. M.G. Ganavi and B.S. Premananda, "Design of Low Power Reduced Complexity Wallace Tree Multiplier using Positive Feedback Adiabatic Logic," *Springer Advances in Intelligent Systems and Computing book series*, vol. 1089, pp. 139-150, 22nd to 24th December 2018.

35. B.S. Premananda, U.K. Bhargav, and Kaza Sai Vineeth, "Design and Analysis of Compact QCA Based 4-Bit Serial-Parallel Multiplier," *Proceedings of 3rd IEEE International Conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Techniques (ICEECCOT)*, Mysuru, India, 14th and 15th Dec. 2018, pp. 1014-1018.
36. A. Bajpai, A.R. Anurag, G. Shakthivel, and B.S. Premananda, "Design of Low Power and High-Speed 16-bit Square Root Carry Select Adder using AL," *Proceedings of 3rd IEEE International Conference on Circuits, Control, Communication and Computing (I4C)*, Bengaluru, India, 3rd to 5th October 2018, pp. 1-4.
37. M.G. Ganavi and B.S. Premananda, "Design of Low-Power Square Root Carry Select Adder and Wallace Tree Multiplier using Adiabatic Logic," *Springer Lecture Notes in Electrical Engineering*, vol. 545, pp. 767-781, 23rd and 24th August 2018.
38. K.L. Sindhudhar and B.S. Premananda, "Development of Hybrid Algorithm for Masquerading Sink Node Location in WSN," *Springer Lecture Notes in Electrical Engineering*, vol. 545, pp. 139-148, 23rd and 24th August 2018.
39. V.G. Pooja, B.S. Premanada, and Gouthaami S. Ramesh, "Design of Compact Vedic Multiplier for High-Performance Circuits," *Proceedings of 3rd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology (RTEICT)*, Bengaluru, India, 18th and 19th May 2018, pp. 1168-1172.
40. Nagesh N. Nazare, Pradeep S. Bhat, R.J. Nayana, and B.S. Premananda, "Design and Analysis of Low-power 16-bit Parallel-Prefix Adiabatic Adders," *Proceedings of 3rd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology (RTEICT)*, Bengaluru, India, 18th and 19th May 2018, pp. 524-529.
41. Vinay B. Biradar, Vishwas P.G., C.S. Chetan, and B.S. Premananda, "Design and Performance Analysis of Modified Unsigned Braun and Signed Baugh-Wooley Multiplier," *Proceedings of 2nd IEEE International Conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Techniques (ICEECCOT)*, Mysuru, India, 15th and 16th December 2017, pp. 791-796.
42. R. Usha, B.S. Premananda, and Viswavardhan Reddy Karna, "Performance Analysis of MANET Routing Protocols for Military Applications," *Proceedings of IEEE International Conference on Intelligent Computing and Control Systems (ICICS)*, Madurai, India, 15th and 16th June 2017, pp. 1063-1068.
43. Shreya V. Basu, K.P. Ashwin, Nupur K. Neti, and B.S. Premananda, "Improving the Network Lifetime of a Wireless Sensor Network using Clustering Techniques," *Proceedings of 2nd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology (RTEICT)*, Bengaluru, India, 19th and 20th May 2017, pp. 1872-1877.
44. R. Usha, B.S. Premananda, and Viswavardhan Reddy Karna, "Network Performance Analysis of MANET Routing Protocols with various Mobility Models," *Proceedings of 2nd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology (RTEICT)*, Bengaluru, India, 19th and 20th May 2017, pp. 511-515.
45. G.V. Nikhil, A.M. Keerthi, and B.S. Premananda, "Impact of ERB and Bark scales on Perceptual Distortion based Near-end Speech Enhancement," *Proceedings of IEEE International Conference on Trends in Electronics and Informatics (ICEI)*, Tirunelveli, India, 11th and 12th May 2017, pp. 364-370.

46. K. Suchitha, B.S. Premananda, and Arvind Kumar Singh, "High Spatial Resolution Hyperspectral Image using Fusion Technique," *Proceedings of IEEE International Conference on Trends in Electronics and Informatics (ICEI)*, Tirunelveli, India, 11th and 12th May 2017, pp. 348-353.
47. K. Arvind, B.S. Premananda, and S. Yellampalli, "Hardware Validation for Intelligibility Improvement of NELE on DSP Processor," *Proceedings of 3rd IEEE International Conference on Sensing, Signal Processing and Security*, ICSSS 2017, Chennai, India, 4th and 5th May 2017, pp. 108-113.
48. G.V. Nikil, B.P. Vaibhav, Vishnu G. Naik, and B.S. Premananda, "Design of Low Power Barrel Shifter and Vedic Multiplier with Kogge-Stone Adder using Reversible Logic Gates," *Proceedings of 6th IEEE International Conference on Communication and Signal Processing (ICCSP)*, Memaruvathur, India, 6th to 8th April 2017, pp. 1690-1694.
49. B.S. Premananda, M.K. Chandana, K.P. Shree Lakshmi, and A.M. Keerthi, "Design of Low Power 8-bit Carry Select Adder using Adiabatic Logic," *Proceedings of 6th IEEE International Conference on Communication and Signal Processing (ICCSP)*, Memaruvathur, India, 6th to 8th April 2017, pp. 1764-1768.
50. P.G. Vishwas and B.S. Premananda, "Development of LIN 2.1 Driver with SAE Standards for RL78 Microcontroller," *Springer Progress in Intelligent Computing Techniques: Theory, Practice, and Applications. Advances in Intelligent Systems and Computing*, vol. 518, Springer, 22nd to 24th September 2016.
51. M. Shivakumar, B.S. Premananda, and Anil Keste, "Automation of Device Validation using Digital Power Technology and PMBus Communication," *Proceedings of 2nd IEEE International Conference on Cognitive Computing and Information Processing (CCIP)*, Mysuru, India, 12th and 13th August 2016, pp. 1-6.
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53. C.S. Arvinda Kumar, B.S. Premananda, and K.J. Kumar, "Design and Development of High-speed Data Acquisition System with Cyclone FPGA," *Proceedings of ACM 7th International Conference on Computing, Communication and Networking Technologies*, ICCCNT-2016, Dallas, New York, USA, pp. 1-5, 6th to 8th July 2016.
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62. M. Ashwath and B.S. Premananda, "Signed Fixed-Point Multiplier for DSP using Vertically and Crosswise Algorithm," *Proceedings of Fourth IEEE International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, Tiruchengode, India, IEEE-31661, 4th to 6th July 2013, pp. 1-6.
63. A.N. Kavan and B.S. Premananda, "A Simplified AES Approach for Wireless Sensor Networks," *Proceedings of Second International Conference on Recent Trends in Computer Science and Engineering, ICRTCS-2013*, Bengaluru, pp. 107-111, 26th May 2013.
64. B.S. Premananda and B.V. Uma, "Low Complexity Speech Enhancement Algorithm for Improved Perception in Mobile Devices," *Springer Lecture Notes in Electrical Engineering*, vol. 131, pp. 699-707, 22nd to 24th December 2012.
65. S. Ajaya Kumar, P. Cyril Prasanna Raj, and B.S. Premananda, "Design and Analysis of RF CMOS Transceivers for Wireless Applications in 0.18- μ m CMOS Technology," *Proceedings of IEEE International Conference on Communication and Computational Intelligence (INCOCCI)*, Erode, India, 27th to 29th December 2010, pp. 147-151.

Book Chapters

1. B.S. Premananda and R. Ajith, "Design and Analysis of Optimized Area and Energy-Efficient QCA-based 8×8 Butterfly Switching Network," *Book-Titled-Circuit Design for Modern Applications*, CRC Press, Chapter 7, PP. 103-119, February 2025.
2. Reddy K. Viswavardhan, B. Hemapriya, B. Roja Reddy, and B.S. Premananda, "Performance Evaluation of ML Algorithms for Disease Prediction Using DWT and EMD Techniques", *Book Titled-Computational Intelligence and Machine Learning Approaches in Biomedical Engineering and Health Care Systems*, Bentham Science Publishers, Chapter-15, pp. 96-112, October 2022.

3. B.S. Premananda, Maria Bency, Shwetha R. Prasanna, and G.P. Shreya, "Low-power Modified Phase-locked Loop using AVLS Technique for Biomedical Applications", Book Titled-*Advances in Image and Data Processing using VLSI Design*, IOP Publishing Ltd. 2021, vol. 01, Chapter 12, pp. 12-1 to 12-13, December 2021.

Professional Memberships

- Senior IEEE Member: 92328975
- ISTE Life membership: LM 105897

Awards & Recognitions

- Felicitated by RSST-RVCE, Bengaluru, for the Research Excellence Award 2023 by IEEE ITS Bangalore Chapter on 26th Jan. 2025.
- Research Excellence Award 2023 by IEEE ITS Bangalore Chapter.
- R10 Ethics Champion 2023 by IEEE Ethics Awareness and Advancement Committee (EAAC) Team.
- NPTEL-AICTE FDP for the Course "CMOS Digital VLSI Design", February to April 2019, Top 1 %.
- Felicitated by RSST, Bengaluru, for publishing research articles in Scopus-indexed Journals on 26th Jan. 2018 and 26th Jan. 2019.
- Felicitated by RSST, Bengaluru, for obtaining Top 1 % in NPTEL- Course "CMOS Digital VLSI Design", February to April 2019.
- Dr. Veerendra Heggade Pattabhisheka Award 2005 for securing the rank in M.Tech. by Sri. Dharmastha Manjunatheshwara Trust.

Student Supervision

- **Ph.D. Candidates:** 01
- **M.Tech/M.Sc. Students:** 20
- **Undergraduate Research Mentees:** 57

Professional Roles

- Chair IEEE ITS Bangalore Chapter for 2025
- EXECOM IEEE CEDA Bangalore Chapter for 2025
- Track Chair IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)-2025
- Chair-elect IEEE ITS Bangalore Chapter for 2024
- EXECOM IEEE ITS Bangalore Chapter for 2022 and 2023
- Reviewer for SCI/WoS/Scopus indexed Journals

Teaching

Core Courses:

- ET365TBD Advanced VLSI Systems
- ET355BTD Digital VLSI Systems
- IS234AT Logic Design and Computer Organization

Advanced/Lab Courses:

- Communication Engineering Lab
- Discrete-Time Signal Processing Lab

Professional Roles

Responsibilities

- **Academic:** UG Program Coordinator, NBA Coordinator, Counsellor, [Internship Coordinator, Minor and Major Project Coordinator]
- **Administrative:** Compliance Coordinator, Alumni Coordinator, I year Skill Lab In charge [National Conference Coordinator, Time Table Coordinator, Autonomous Exam Coordinator]

External Connect

- **Member of BoS:** Dept. of E&C, Nitte Meenakshi Institute of Technology, Bengaluru
- **Member of BoE:**
 - Dept. of E&C, Cambridge Institute of Technology, Bengaluru
 - Dept. of E&C, Ramaiah Institute of Technology, Bengaluru
 - Dept. of E&C, Siddaganga Institute of Technology, Tumakuru
 - Dept. of E&C, Nitte Meenakshi Institute of Technology, Bengaluru
 - School of Electronics and Communication, Reva University, Bengaluru
- **Member of Ph.D. Doctoral Committee:**
 - Dept. of E&C, Ramaiah Institute of Technology, Bengaluru
 - Dept. of E&C, Jyothi Institute of Technology, Bengaluru
 - Dept. of ETE, Siddaganga Institute of Technology, Tumakuru
 - Dept. of E&C, Dayanand Sagar College of Engineering, Bengaluru
 - School of Electronics and Communication, Reva University, Bengaluru
 - Dept. of E&C, JSS Academy of Technical Education, Bengaluru
 - Dept. of E&C, SJB Institute of Technology, Bengaluru