Name	Dr.R.SORNALATHA
Contact (office)	Assistant Professor (SL. Gr) Department of Electronics and Communication Engineering M.I.E.T. Engineering College Trichy – 620007
Email	sornalatha.r@miet.edu

Educational Qualifications	DEGREE	EDUCATIONAL INSTITUTION	BOARD/ UNIVERSITY	YEAR OF PASSING
	Ph.D. Information and Communication Engineering	K.L.N. College of Engineering	Anna University, Chennai	2021
	M.E. VLSI DESIGN	Kings College of Engineering	Anna University, Trichy	2010
	B.E. Instrumentation and Control Engineering	Arulmigu Kalasalingam College of Engineering	M.K.University, Madurai	1996

Professional Career Profile	Organization	Designation	Date of Joining	Duration of work
	M.I.E.T. Engineering college	Assistant Professor (SL. Gr)	18.03.2024	Till date
	Shanmuganathan Engineering College, Pudukkottai	Associate Professor& Head	01.03.2022 to 29.05.2023	1 year, 2 months and 24 days
		Assistant Professor& Head	01.07.2010 to 28.02.2022	11 years and 8 months
		Lecturer	21.06.2006 to 31.08.2022	2 years, 2 months and 10 days
	Srinivasa Polytechnic, Kalamavur	Lecturer	03.12.1998 to 18.01.2022	3 years,1 month and 16 days
	CECRI, Karaikudi	Project Assistant-II	20.03.1997 to 31.08.1998	1 year, 5 months and 13 days

Awards & Recognitions	Received Appreciation as Best Teacher for 10 years of Excellence in Teaching and 100% Result produced in various UG and PG subjects.
Academic Areas of Interest	Optical Communication, VLSI Design, Electronic Devices

Professional Activities:

1. Life Member of Indian Society of Technical Education (MISTE) (LM 91256)
2. Life Member of International Association of Engineering & Technology for Skill Development (IAETSD140066)
3. Member of ORCID (0009-0006-5736-6558)
4. Scopus ID (57201880514)
5. Web of Science Researcher ID: (JRW-2604-2023)
6. Vidwan-ID (459854)

Publications – Research Papers:

1) **R. Sornalatha,** Ravindran and Janakiraman Nithiyanantham, "Security improved duobinary Optical Communication Scheme through Bio-Inspired Chaos Masking Scheme", IET Optoelectronics, Vol. 14, No. 5, pp. 296-305, September 2020. (SCI–Impact Factor–1.636) (DOI: 10.1049/iet-opt.2018.5080) (E-ISSN 1751-8776)

2) **R. Sornalatha,** N.Janakiraman, K.Balamurugan, Arun Kumar Sivaraman, Rajiv Vincent and A. Muralidhar, "FPGA implementation of protected compact AES S–Box using CQCG for embedded applications", Advances in Parallel Computing, Vol. 38, Smart Intelligent Computing and Communication Technology, pp. 396-401, October 2021. (DOI: 10.3233/APC210073) (E-ISSN: 1879-808X)

3) **R. Sornalatha,** N.Janakiraman and T.Balasharmitha, "A Novel Energy Methodical Digital Self-Interference Cancellation Technique for 5G Applications", Advances in Natural and Applied Sciences, Vol. 11, No. 7, pp. 7-14, May 2017. (E-ISSN: 1998-1090)

Publications – Conference Presentations:

1) **R. Sornalatha** and N.Janakiraman, "Multiuser Visible Light Communication System for Reliable Wireless Communication", 2017 IEEE International Conference on Computational Intelligence and Computing Research (ICCIC), Coimbatore, 15th December 2017, pp. 1 - 6. (**DOI**: 10.1109/ICCIC.2017.8524159) (E-**ISBN**: 978-1-5090-6621-6) (14 – 16 December) (Tamil Nadu College of Engineering)

2) **R. Sornalatha,** N.Janakiraman and T.Balasharmitha, "Modeling of Widely Linear Digitally Controlled Self-Interference Canceller for Full-Duplex Transceiver", 2017 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), Chennai, 22nd March 2017, pp. 229-235. (**DOI:** 10.1109/WiSPNET.2017.8299753) (E-**ISBN:** 978-1-5090-4442-9) (22 – 24 March) (SSN College of Engineering)

List of Publications – National/Inter National Journals:

1. Title: Intensifying Redundant Technique for Extenuation of Single Event Upset Sensitivity
   Journal Name: International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE)
   Publication Details: Volume 2, Issue 10, October 2013
   ISSN (Online): 2278-8875
   ISSN (Print): 2320-3765
   URL: www.ijareeie.com
   C/o: A Unit of S&S Publications

2. Title: FPGA Based Retinal Oxygen Saturation Mapping Using Multispectral Images
   Journal Name: International Journal of Multidisciplinary Educational Research
   Publication Details: Volume 3, Issue 8(4), Page No.:66, August 2014
   ISSN: 2277-7881
   Impact factor: 2.735
   Index Copernicus value:5.16
   URL: www.ijmer.in
   C/o: Suchithra Publications

3. Title: High Speed and Efficient Power Reduction in Pulse Triggered Flip Flop Based on Signal Reduction through Scheme
   Journal Name: International Journal of Advanced Research in Engineering and Management
   Publication Details: Volume 01, Issue 01, April 2015
   Impact factor: 1.34

4. Title: A Modern Approach for Low Power Dynamic Double Tail Comparator
   Journal Name: IOSR Journal of VLSI and Signal Processing
   Publication Details: Volume5, Issue 3, May - June 2015
   e-ISSN: 2319-4200
   p-ISSN :2319-4197
   Impact factor: 1.86
   URL: www.ane.us

5. Title: High Speed and Efficient Power Reduction in Pulse Triggered Flip Flop Based on Signal Feed through Scheme
   Journal Name: International Journal for Research in Applied Science & Engineering Technology
   Publication Details: Volume 3, Special Issue I, May 2015
   Paper ID: IJRASET 2522
   ISSN: 2321-9653
   IC Value :13.98
   Impact factor: 5.011

Website: www.ijraset.com

6. Title: FPGA Design of High Throughput STBC-OFDM Systems for Low Power Applications
   Journal Name: International Journal of Engineering and Computer Science (IJECS)
   Publication Details: Volume 4, Issue 6, 2015, pp: 12486-12491
   ISSN: 2319-7242.

7. Title: FPGA Implementation of Successive Cancellation Polar Decoder Architecture
   Journal Name: International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
   Publication Details: Volume 2 – Issue 6, June 2015
   ISSN: 2394-3777(Print) & 2394-3785(Online)
   URL: www.ijartet.com

8. Title: Design Of Block Ciphers and Stream Ciphers Using Cryptographic Algorithm
   Journal Name: International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE)
   Publication Details: Volume 6 – Issue 5, May 2017
   ISSN: 2320-3765(Print) & 2278-8875(Online)
   URL: www.ijareeie.com

9. Title: Design And Implementation of RNS Reverse Converter Using Parallel Prefix Adders
   Journal Name: International Journal of Computer Applications (0975 – 8887)
   Publication Details: Volume 117 – No. 6, May 2015

10. Title: Low Power and High-Performance SRAM-based Architecture for TCAM
    Journal Name: Indian Journal of Research in Applied Sciences Engineering (IJRASE)
    Publication Details: Volume 3 – Issue 1, Pages 1-4, 2015

11. Title: Low Power Cache Memory Architecture Using Bandwidth Scalable Controller
    Journal Name: International Journal of Wireless Sensor Networks
    Publication Details: Volume7, Issue3 (2015)
    Impact factor: 2.85
    C/o: International Research India Publication House

Papers presented in International Conference:

1. "Detection of Architectural Distortion in prior Mammograms is using Enhanced Texture Features" in the International Conference on Computational Intelligence and its Applications (ICCIA) held at Vivekananda Institute of Engineering and Technology for Women, Elayampalayam Tiruchengode on 1st Mar to 3rd Mar 2012.

2. "Test Data Compression Based on Hybrid Difference Method" in the International Conference on Devices, Information, Signal Processing and Communication (DISC) held at Coimbatore Institute of Engineering and Technology, on 16th Apr 2014.

3. "FPGA Based Retinal Blood Oxygen Saturation Mapping Using Multi Spectral Images" in the International Conference on Current Trends in Engineering Research (ICCTER), During 10-11 August 2014 held at Liberty Park Hotel, Kodambakkam, Chennai.

4. "FPGA Design of High Throughput STBC-OFDM System for Low Power Applications" at International Conference on Power, Circuits & Communication held at Mahath Amma Institute of Engineering & Technology, Pudukkottai on 4th April 2014.

5. "Design of high-performance pipelined radix-2 FFT Architecture" in the International Conference on electrical, electronics & computer engineering (ICEECE 2015) held at Vivekananda Institute of Engineering and Technology for Women, Elayampalayam, Tiruchengode during 11th& 12th March 2015.

6. "An Efficient Design of Optimized Low Power Dual Mode Logic Circuits using VLSI technology" in the International Conference on Recent Computing and Communication Technologies - 2015 (ICRCCT) held at St. Michael college of Engineering & Technology, Kalayarkovil, on 20^{th}March 2015.

7. "An Effective raid controller for solid-state disk" in the 2nd International Conference on Recent Trends in Engineering and Technology (ICRTET 2015) Organized by Mount Zion College of Engineering and Technology, Pudukkottai during March 23rd and 24th 2015.

8. "Low Complexity Architecture for Error Correcting Codes with Butterfly formed Weight Accumulator" in the 2nd International Conference on Recent Trends in Engineering and Technology (ICRTET 2015) Organized by Mount Zion College of Engineering and Technology, Pudukkottai during March 23rd and 24th 2015.

9. "FPGA Implementation of Input Vector Monitoring Concurrent Built in Self Repair Diagnosis" in the 2nd International Conference on Recent Trends in Engineering and Technology (ICRTET 2015) Organized by Mount Zion College of Engineering and Technology, Pudukkottai during March 23rd and 24th 2015.

10. "Performance Analysis of Successive Cancellation Decoder for Polar Codes with Two Stages Channel Estimator" in the 3rd international Conference on Innovative Research in Engineering and Technology (ICIRET 2015) Organized by Park College of Engineering and Technology, Coimbatore during 9th ,10th&11th April 2015.

11. "FPGA Design of Effective Detection Low Power Architecture for Recycled IC's" in the 3rd International Conference on Innovative Research in Engineering and Technology (ICIRET 2015) Organized by Park College of Engineering and Technology, Coimbatore during 9th ,10th&11th April 2015.

12. "High Speed and Efficient Power Reduction in Pulse Triggered Flip flop Based on Signal Feed Through Scheme" in the International Conference on Research Methods in Engineering and Technology held at Hotel Chennai Gateway, Chennai on 3rd May, 2015.

13. "Design and Implementation of RNS Reverse Converter Using Parallel Prefix Adders" in the International Conference on Engineering, Management and Applied Sciences Organized by MNSK College of Engineering, Pudukkottai during 9th & 10th April 2015.

14. "Low Power Cache Memory Architecture Using Bandwidth Scalable Controller" in the International Conference on Engineering, Management and Applied Sciences Organized by MNSK College of Engineering, Pudukkottai during 9th& 10th April 2015.

15. "Low power High Performance SRAM-Based Architecture for TCAM" in the International Conference on Engineering, Management and Applied Sciences Organized by MNSK College of Engineering, Pudukkottai during 9th& 10th April 2015.

16. "A VLSI Implementation of Low Power FAP Based Adaptive Filter with Lower Adaptation Delay" in the International Conference on Technology Developments in Engineering (ICTDE 15') at Chendhuran College of Engineering and Technology, Pudukkottai during 9th& 10th April 2015.

17. "FPGA Implementation of Photonic Network on Chip Using Cross Layer Approach" in the International Conference on "Advances in Engineering Science and Technology" (ICAEST' 16) held at SBM College of Engineering and Technology, Dindigul during 3rd and 4th March 2016.

18. "Design and Implementation of Microstrip Patch Antenna for 5G Applications" in the International Conference on "Advanced Communication Control and Computing Technologies" (ICACCCT'16) held at Syed Ammal Engineering College, Ramanathapuram-623502 during 25th to 27th May 2016.

19. "Performance Analysis of Hybrid WDM-FSO System Under Various Weather Conditions" in the International Conference on Chip, Circuitry, Current, Coding, Combustion & Composites (i7C-2016) held at Sri Sairam College of Engineering, Anika, Bengaluru on 10th-11th November, 2016.

20. "Design of Effective PCFICH Transceiver Architecture for LTE Downlink Control Channel" in the Fifth International Conference on Design and Applications of Structures, Drives, Communicational and Computing Systems-ICDASDC'16 held at K.L.N. College of Information Technology, Pottapalayam-630612, Sivagangai District during 16th and 17th December,2016.

Papers Presentedin NationalConference:

1. "Back Propagation neural networks based smart charging of batteries" at a National Conference on Signals, Systems and Security (NCSSS-2010) held at Bannari Amman Institute of Technology, Sathyamangalam on 27th Feb 2010.

2. "Detecting the optic disc boundary and candidate Micro-Aneury SMS in digital fundus images" at a National Conference on Microwave and Optical Communication (NCMOC 2011) held at Alagappa Chettiar college of Engineering and Technology, Karaikudi on 30th March 2011.

3. "Performance Analysis of PSSK modulation scheme for high data rate implantable medical devices" at a National Conference on Microwave and Optical Communication (NCMOC 2011) held at Alagappa Chettiar college of Engineering and Technology, Karaikudi on 2nd April 2012.

4. "Fixed Innovative bandwidth utilization in TDM EPON" at a National Conference on Recent Trends in Engineering and Technology held at Sri Raaja Raajan college of Engineering and Technology, Karaikudi on 4th February 2013.

5. "FPGA Design of high Throughput FDM system for Wireless Application" at a National Conference on Recent Advancements in Technologies (RAT) held at Mother Terasa college of Engineering and Technology Pudukkottai on 16th and 17th Feb 2013.

6. "Lung Tumor Detection in Thoracic Images Using ANFIS" at a National Conference on Recent Trends in Engineering and Technology held at Mount Zion College of Engineering and Technology, Pudukkottai on 1st April 2013.

7. "Low power and area efficient carry select adder" at a National Conference on Emerging Technologies held at Mahath Amma Institute of Engineering & Technology, Pudukkottai on 24th April 2013.

8. "FPGA Implementation of Multiple SIC Vectors in BIST Application" at a National Conference on Recent Advancements in Technologies (RAT) held at Mother Terasa college of Engineering and Technology Pudukkottai on 22nd and 23rd Feb 2014.

9. "FPGA Design of a Low Power High Performance Architecture for Motion Estimation" at a National Conference on Recent Trends in Electrical, Electronics and Soft Computing - 2014 held at MNSK College of Engineering, Pudukkottai on 14th March 2014.

10. "A Power Efficient CAM Design Using Modified Parity Bit Matching Technique" at a National Conference on "Intelligent Computing and Communications" held at Sasurie Academy of Engineering, Coimbatore on 21st and 22nd March 2014.

11. "FPGA Implementation of High-Performance Network on Chip Router Design using shared Buffer Architecture" at a National Conference on Microwave and Optical Communication (NCMOC' 2015) held at Alagappa Chettiar college of Engineering and Technology, Karaikudi on 20th March 2015.

12. "Design of Low Power MIMO Decoding Accelerator Using an Euclidean orthogonal Architecture" at a National Conference on Recent Trends and Innovations in Engg & Tech (RTIET' 2015) held at Trichy Engineering College, Trichy on 20th March 2015.

13. "High Throughput Low Energy Self-Timed CAM based on RWOS and POP Approaches" at a National Conference on Microwave and Optical Communication (NCMOC' 2015) held at Alagappa Chettiar college of Engineering and Technology, Karaikudi on 20th March 2015.

14. "Design of Low Power Dynamic Double Tail Comparator" at a National Conference on Microwave and Optical Communication (NCMOC' 2015) held at Alagappa Chettiar college of Engineering and Technology, Karaikudi on 20th March 2015.

15. "Intelligent Transportation System using Integrated Plate Recognition Technique" at 2nd National Conference on "Recent Advances in Communicative Electronics (NCRACE 2023) held at SRM TRP Engineering College, Tiruchirappalli, during March 2023.

Publications - Books:

1) **R. Sornalatha**, Author, "**Optical Communication Networks**", Meenambegai Publication, 2013. (ISBN**:978-93-5104-349-2**)

2) **R. Sornalatha**, Author, "**DSP Integrated Circuits**", Meenambegai Publication, 2015. (ISBN:**978-93-5137-247-9**)

3) **R. Sornalatha,** Author, **"Microwave Integrated Circuits",** Meenambegai Publication,2013**.** (ISBN:**978-81-928683-9-4**)

Patent:

1) Published a patent under the title "**SPACE-BASED QUANTUM COMMUNICATION SYSTEM AND WORKING METHOD THEREOF**" Indian Patent, Application No:202341060739, Publication Date: 06/10/2023.

Academic Positions Served:

1. Head of the Department (Dec 2021 to May 2023).

2. Training and Placement Co-Ordinator (From 2018 to 2023).

3. Skill development Centre Co-Ordinator (From 2022 to 2023).

4. Instrumental in getting NAAC (2021).

5. SSR preparation committee lead.

6. Convener for Conferences and Symposiums (2010-2023)

7. Acted as CAUR/AUR.

8. Anti-Ragging Committee member for ten years.

MOOC Certificate Courses:

1) **Course**: Evolution of Air Interface Towards 5G
   - **Platform**: SWAYAM - NPTEL
   - **Completion Date**: February-April 2023
   - **Grade**: Elite
   -
2) **Course**: CMOS Digital VLSI Design
   - **Platform**: SWAYAM - NPTEL
   - **Completion Date**: January-March 2020
   - **Grade**: 95%

National Symposium/Conference/Workshop Organized:

1) Member of Technical Program Committee/Advisory Committee in Technical Symposium "SPECTRA'11"
2) Member of Technical Program Committee/Advisory Committee in Technical Symposium "SPECTRA'12"
3) Member of Technical Program Committee/Advisory Committee in   association Inaugural function
   "Engineers Day-September-2015".
4) Member of Technical Program Committee/Advisory Committee in First National Conference on Emerging Trends in Electronics and Communication Engineering (ETECE- 2K15).
5) Convener in National level technical symposium SPECTRA'22
6) Two Workshops are organized in the topic of Internet of Things
7) Conducted 2 Guest lectures in the department in the year 2022
8) Arranged a Value-Added Course in Embedded Real Time applications

Invited Talks / Session Chair / Chief Guest:

1) A guest lecture on "VLSI Design Methodologies, Applications and Recent Trends" was conducted at Chendhuran College of Engineering and Technology, Pudukkottai on 19-04-2023.

National Workshop/Seminar/SDP/FDP Attended:

1. One day National Seminar on "Research Methodology" held at Anna University of technology Tiruchirappalli, Tiruchirappalli-620024 on 27th August 2011.

2. AICTE Sponsored Three-days National Seminar on "Recent Trends in Optical and Wireless Networks" held at Sudharsan Engineering College on 26th to 28th March 2013.

3. "One day ISF (IETE Students Forum) sponsored seminar on RF Amplifier and Matching Networks Design" organized by department of ECE, held on 16th September at K. Ramakrishnan College of Technology, Samaya Puram, Trichirappali-621112.

4. AICTE Recognized Short Term Course on "Effective Curriculum Implementation through ICT" Certified by National Institute of Technical Teachers Training and Research Chandigarh, Ministry of Human Resource Development, Government of India Conducted by Curriculum Development Centre held at Shanmuganathan Engineering College, Pudukkottai from 19th to 23rd September 2016.

5. One-day Workshop on "Recent Trends in MATLAB for Signal Processing, Simulink, Sim power systems and control Systems" held at MNSK College of Engineering and Technology Trichy on 11th August 2010.

6. One-day Technical Workshop on "Mobile Application Development Android 4.0" Organized by Computer Society of India at Shanmuganathan Engineering College, Pudukkottai on 24th Sep 2012.

7. Three-days National Workshop on "Emerging Trends on High- end FPGAs" Conducted by Department of Electronics and Communication Engineering of Anna university of technology Tiruchirappalli, Tiruchirappalli-620024, during 10th to12th December 2010.

8. Three-days National Workshop on "NS2" Conducted by Department of Electronics and Communication Engineering of Mount Zion college of Engineering and Technology, Pilivalam, during 3rd,4thand 5th Oct 2012.

9. One day National Workshop on "Analog and mixed signal IC design" held at Sudharsan Engineering College on 11th Feb 2012.

10. Two-days National Workshop on "Microwave antenna, Filters & Measurement Techniques" Conducted by Department of Electronics and Communication Engineering of Mount Zion college of Engineering and Technology, Pilivalam, during 27th and 28th Feb 2013.

11. Two-day Workshop on" MICROSTRIP PATCH ANTENNA:DESIGN AND ITS FABRICATION" Under Student Chapter of SEC Organized by the Department of Electronics and Communication Engineering on 14th -15th March, 2014.

12. One day workshop on "RF & Microwave Design" held at TRP Engineering College, Trichy on 19th June 2015.

13. Quality Improbement Programme on "Instructional Design and Delivery" Certified by National Institute of Technical Teachers Training and Research, Chennai, Ministry of Human Resource Development, Government of India held at Shanmuganathan Engineering College, Pudukkottai from 05th to 07th February 2009.

14. Fourteen days AICTE Sponsored Staff Development Programme on "Evolving Trends in Optical Communication Networks" From 08-05-13 to 21-05-13 held at Sudharsan Engineering College Pudukkottai.

15. Two-day FDP on "Wavelet and Sparse Signal Processing" held at KLN College of Information technology, Madurai on 27th and 28th Feb 2014.

16. Three days Value Added Course on "Project Based Learning using MATLAB" Conducted by Enthu Technology Solutions India Pvt Ltd from 17th August to 19th August 2015, at Shanmuganathan Engineering College, Arasampatti.

17. Two- day Workshop on "Optical and Microwave Lab (EC 6712)" Organized by Department of Electronics and Communication Engineering, KLN College of Engineering Pottapalayam - 630612, during 4th-5th August 2016.

18. Faculty Development Programme on "Instructional Model for Outcome Based Education" Certified by National Institute of Technical Teachers Training and Research, Chennai, Ministry of Human Resource Development, Government of

India held at Shanmuganathan Engineering College, Pudukkottai from 28th November to 03rd December 2016.

19. One day Workshop on "PCB Design" held on 11th January, 2017 at Shanmuganathan Engineering College Arasampatti, Thirumayam (Tk), Pudukkottai.

20. ISF Sponsored Two day's National Workshop on "Design and Simulation of RF & Microwave Devices: HFSS & ADS Tool" Organized by Department of Electronics and Communication Engineering, K. Ramakrishnan College of Technology Samayapuram, Tiruchirappalli - 621112, on 3rd & 4th February 2017.

21. One day Workshop on "Planar Antenna Design Using HFSS" Organized by Department of Electronics and Communication Engineering, TRP engineering college, Irungalur, Tiruchirappalli -621105, conducted on 3rd March 2017.

22. One day National level Seminar on "Metamaterial & Its Applications in Antenna Design" Organized by Department of Electronics and Communication Engineering, K. Ramakrishnan College of Technology held during 11th August 2017.

23. IIPC Sponsored Workshop on "Research Problem Identification and Technical Paper Writing" in K.L.N. College of Engineering Organized by the Department of Computer Science and Engineering from 22.09.2017 to 23.09.2017.

24. IEEE(AP-S), Madras Chapter Sponsored One-day National Seminar on "Advanced Topics in Antenna Design & Measurements" held at K. Ramakrishnan College of Technology, Trichy-621112 on 27th April, 2018.

25. Seven days Faculty Development Training Programme on "EC 6502- Principles of Digital Signal Processing" held at Shanmuganathan Engineering College, Arasampatti, Pudukkottai during 20th to 26th June 2018.

26. One day National Workshop on "Analysis and Design of Microstrip Antenna using CST Software, ADMA-2018" Conducted by Department of Electronics and

Communication Engineering of K. Ramakrishnan College of Engineering & Technology, Trichy on 24th August,2018.

27. One day Workshop on "Design of Microstrip Antenna, DMA- 2019" Conducted by Department of Electronics and Communication Engineering of K. Ramakrishnan College of Technology, Trichy on 19th September,2019.

28. One day Workshop on "Innovative Hands-on Training in Antenna Design & Simulation" held at Pantech ProEd on 16th February 2020.