

Faculty Profile



Dr. T. N. Suresh Babu, M.E., Ph.D
Associate Professor/ECE

HIGHLIGHTS:

- Number of Journal Publications: 10
- H-Index: 07
- Project Funding Received: 02
- Patents Published: 01
- Patents Granted: 02

PROFESSIONAL LINKS:

- Scopus ID: 57277492800
- Scopus Link: <https://www.scopus.com/pages/authors/57277492800>
- Google Scholar ID: H4SBLJoAAAAJ
- Anna University Faculty ID: 4204070
- AICTE Faculty ID: 493024647
- Anna University Supervisor ID: 4590001
- LinkedIn: <https://www.linkedin.com/in/t-n-suresh-babu-41a7b74b/>

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 28 Years
- Industrial Experience: -

INTERNATIONAL EXPOSURE:

Nil

AREA OF SPECIALIZATION:

- Antenna Design
- Wireless Communication
- Power Electronics, Green Energy (Solar Cell)
- Artificial Intelligence, Data Science

Ph.Ds AWARDED WITH DETAILS: Nil

Ph.Ds GUIDING:

- **Full Time Scholars:** Nil
- **Part Time Scholars:** 01

SPONSORED RESEARCH / FUNDING APPLIED / CONSULTANCY:

- Received a Grant of Rs.10,000 from Tamil Nadu State Council for Science and Technology (TNSCST) under scheme of Students Project Proposal to conduct project on “Stepped slot microstrip patch antenna integrated on solar cells for stand-alone communication systems” for the year 2016-2017.
- Received a Grant of Rs.7,500 from Tamil Nadu State Council for Science and Technology (TNSCST) under scheme of Students Project Proposal to conduct project on “Super-Solar integrated Antenna for 5G Green Wireless Applications” for the year 2021-2022.

PATENTS PUBLISHED/GRANTED:

- A patent titled "Stepped Slot Patch Antenna with Copper and Solar Cell Ground Structure" (Application No. 201841015731) was filed on 26 April 2018 and published under Section 11A on 04 May 2018. The patent was **granted** on 21 November 2023 with Patent No. 470850.
- A patent titled "Multi-Band Center Fed Microstrip Patch Antenna on AMC Surface with Copper Ground and PV Cell Ground" (Application No. 201841035834) was filed on 24 September 2018 and published under Section 11A on 05 October 2018. The patent was **granted** on 04 July 2023 with Patent No. 437150.
- A patent application titled "Flexible Solar Cell Integrated Patch Antenna" (Application No. 202541115107) was filed on 21 November 2025 and **published** under Section 11A on 23 January 2026. The application is currently **under examination**.

COURSES CERTIFIED:

- Successfully completed the NPTEL course "A Brief Introduction of Micro-Sensors", a 4-week certification program conducted during January–February 2024.
- Successfully completed the NPTEL course "Python for Data Science", a 4-week certification program conducted during July–August 2024.
- Successfully completed the NPTEL course "Simulation of Communication Systems using MATLAB", a 12-week certification program conducted during July–October 2024.
- Successfully completed the NPTEL course "Data Science for Engineers", an 8-week certification program conducted during January–March 2025.
- Successfully completed the NPTEL course "Experimental Robotics", a 4-week certification program conducted during February–March 2025.
- Successfully completed the NPTEL course "5G Wireless Standard Design", a 12-week certification program conducted during July–October 2025.
- Successfully completed the NPTEL course "Artificial Intelligence: Concepts and Techniques", a 12-week certification program conducted during July–October 2025.

- Successfully completed the NPTEL course "Probability for Computer Science", an 8-week certification program conducted during February–April 2026.
- Successfully completed the NPTEL course "Introduction to Machine Learning", a 12-week certification program conducted during January–April 2026.
- Successfully completed the NPTEL course "Data Mining for Decision Making", a 4-week certification program conducted during February–March 2026.
- Successfully completed the NPTEL course "Deep Learning" offered by IIT Ropar, a 12-week certification program conducted during January–April 2026.

ACHIEVEMENTS AND AWARDS:

- Received Certificate of appreciation for guiding the project titled “Planer Inverter F antenna for wireless communication” at the 13th ISTE Tamilnadu and Puducherry Section Annual Convention for Engineering Students 2014.
- Received Best Paper Presenter Award at AICTE sponsored International Virtual Conference Antenna Innovations, 5G Communications and Network Technologies-ICA5NT, was held on 6th and 7th November, 2020 at Velammal Institute of Technology, Chennai.

SPECIAL SESSIONS DELIVERED:

- Delivered an expert seminar on “Intelligent Signal Processing Innovations in Massive MIMO Networks” at Jeppiaar Institute of Technology’s ECE Department on January 7, 2026.

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

- Attended a Faculty Development Programme (FDP) on "IC Chip Design and Verification" conducted at the University College of Engineering, Tindivanam, from 29 July 2024 to 01 August 2024.
- Attended a Faculty Development Programme (FDP) on "Powering IoT Using ARDUINO-Raspberry Pi" conducted at the MIT Campus, Anna University, Chennai, from 19 September 2022 to 23 September 2022.
- Attended a Faculty Development Programme (FDP) on "Design and Development of Photovoltaic Modules for PV Generation" conducted at Lendi Institute of Engineering and Technology, Kakinada, from 25 May 2020 to 30 May 2020.
- Attended a Faculty Development Programme (FDP) on "Principles of Modern RADAR" conducted at RISE Krishna Sai Prakasam Group of Institutions, Vallur, Andhra Pradesh, from 03 June 2020 to 07 June 2020.
- Attended a Lecture Series on "Recent Trends on RF and Its Applications" organized by the IEEE APS Jaipur Chapter, from 26 June 2020 to 30 June 2020.
- Attended an Online Spoken Faculty Development Programme (FDP) on "Advanced Communication Laboratory" conducted by PSNA College of Engineering & Technology, Dindigul, from 20 July 2020 to 25 July 2020.

- Attended a Short-Term Training Programme (STTP) on "mmWave Antenna Design and Testing for Biomedical Applications" conducted at Rajalakshmi Institute of Technology, Chennai, from 07 December 2020 to 12 December 2020.
- Attended a Faculty Development Programme (FDP) on "VLSI Design" conducted at Adhiparasakthi Engineering College, Melmaruvathur, from 05 December 2014 to 12 December 2014.
- Attended a Faculty Development Programme (FDP) on "Emerging Issues and Challenges in Wireless Networks" conducted at Adhiparasakthi Engineering College, Melmaruvathur, from 10 June 2013 to 19 June 2013.
- Attended a Staff Development Programme (SDP) on "Application of Digital Filters in Digital Signal Processing Problems" conducted at Adhiparasakthi Engineering College, Melmaruvathur, from 03 May 2012 to 15 May 2012.
- Attended a Short-Term Course on "Digital and Mobile Communication" conducted by NITTTR, Chennai, from 13 November 2006 to 17 November 2006.
- Attended a Workshop on "RF Measurements for Wireless Communications" conducted at the MIT Campus, Anna University, Chennai, on 09 October 2015.
- Attended a Workshop on "Microwaves through Software" conducted at the National Institute of Technology (NIT), Tiruchirappalli, from 06 November 2015 to 07 November 2015.
- Attended a Workshop on "Antenna & RF Design" conducted at the Indian Institute of Information Technology (IIIT), Allahabad, from 16 September 2013 to 21 September 2013.
- Attended a Workshop on "Electromagnetics" organized by the IEEE APS Madras Chapter, from 11 November 2013 to 13 November 2013.
- Attended a Workshop on "Design and Testing of VLSI Circuits" conducted at Adhiparasakthi Engineering College, Melmaruvathur, from 18 February 2010 to 19 February 2010.
- Attended a Workshop on "RF Engineering for Wireless Networks" conducted at the MIT Campus, Anna University, Chennai, from 08 October 2010 to 09 October 2010.
- Attended a Webinar on "Current Trends in Digital Functional Verification" conducted by Easwari Engineering College, Chennai, on 18 May 2020.
- Attended a Webinar on "Antennas and Protocols" conducted by RVS College of Engineering and Technology, Coimbatore, on 01 June 2020.
- Attended a Webinar on "How Microstrip Antenna Works?" conducted by the National Institute of Technology (NIT), Tiruchirappalli, on 10 June 2020.
- Attended a Webinar on "Signals and Measurement in Communication" conducted by Easwari Engineering College, Chennai, on 04 July 2020.
- Attended a Seminar on "Wireless Sensor Networks and Its Applications" conducted at Adhiparasakthi Engineering College, Melmaruvathur, from 20 July 2011 to 21 July 2011.

PROFESSIONAL MEMBERSHIPS:

- Holds **Life Membership** in the Indian Society for Technical Education (ISTE), contributing to the advancement of technical education and professional development.
- Serves as a **Professional Member** of the Institute of Electrical and Electronics Engineers (IEEE) with Membership Number: 99573897, actively participating in the global professional community for engineering and technology.
- Holds a **Basic Membership** in the Applied Computational Electromagnetics Society (ACES), supporting professional activities and research in the field of computational electromagnetics.

OTHER DETAILS:

Research Publications:

- Published the research article "**Analysis of Slot Antenna Performance for On-Body to In-Body Channel Characterization**" in **Progress In Electromagnetics Research Letters**, Vol. 120, pp. 31–37, 2024 (DOI: 10.2528/PIERL24011102). This journal is indexed in **Emerging Sources Citation Index (ESCI – Clarivate Analytics, Impact Factor: 0.9)** and **Scopus (Elsevier)**.
- Published the research article "**Analysis of Super-Solar Integrated Patch Antenna for Sub-6 GHz and Beyond 6 GHz Millimeter Wave 5G Applications**" in the **Applied Computational Electromagnetics Society (ACES) Journal**, Vol. 37, No. 10, pp. 1039–1050, October 2022 (DOI: 10.13052/2022.ACES.J.371004). The journal is indexed in **Science Citation Index Expanded (SCIE, Impact Factor: 0.8)**, **Web of Science**, and **Scopus**.
- Published the research article "**Solar Cell Integrated Wearable Patch Antenna on Artificial Magnetic Conductor for On-Body and In-Body Communications**" in the **Applied Computational Electromagnetics Society (ACES) Journal**, Vol. 37, No. 5, pp. 576–587, May 2022 (DOI: 10.13052/2022.ACES.J.370507). The journal is indexed in **SCIE (Impact Factor: 0.8)**, **Web of Science**, and **Scopus**.
- Published the review article "**Patch Antenna Integrated on Solar Cells for Green Wireless Communication: A Feature-Oriented Survey and Design Issues**" in the **International Journal of RF and Microwave Computer-Aided Engineering (Wiley)**, 2021 (DOI: 10.1002/mmce.22926). The journal is indexed in **SCIE (Clarivate Analytics, Impact Factor: 0.9)**, **Web of Science**, and **Scopus**.
- Published the research article "**Stepped Slot Patch Antenna with Copper Ground Plane and Solar Cell Ground Plane for Future Mobile Communications**" in **Progress In Electromagnetics Research C**, Vol. 98, pp. 187–198, 2020 (DOI: 10.2528/PIERC19101603). The journal is indexed in **Scopus (Elsevier)**.
- Co-authored the research article "**Design of MIMO Antenna for WLAN/WiMAX Applications**" in the **International Journal of Recent Technology and Engineering**, Vol. 7, No. 6, pp. 1031–1036, 2019. The journal is indexed in **Scopus**.
- Published the research article "**A Dual-Band L-Slot Patch Antenna for Wearable Applications**" in the **International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE)**, Vol. 9, Issue 8, pp. 1991–1996, 2020. The journal is an **ISO 9001:2008 Certified Journal**.

- Published the research article **"Miniaturized Circularly Polarized Implantable Antenna for Biomedical Application"** in the **International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE)**, Vol. 9, Issue 7, pp. 1985–1990, 2020. The journal is an **ISO 9001:2008 Certified Journal**.
- Published the research article **"Design and Analysis of Microstrip Slot Patch Antenna"** in the **International Journal of Engineering Technology, Management and Applied Sciences**, Vol. 5, Issue 6, pp. 319–322, 2017. The journal is recognized as an **NITTTR Journal**.
- Co-authored the research article **"Dual AGC Model Implementation of the Inner Hair Cell and Auditory Nerve IC in Neuromorphic VLSI"** in the **International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)**, Vol. 4, Issue 2, pp. 734–745, 2015 (DOI: 10.15680/IJIRSET.2015.0402095). The journal is an **ISO 3297:2007 Certified Journal**.

Conference Publications:

- Published the conference paper **"Realtime Cloud-IoT Framework for Dynamic Parking Allocation in Smart Cities"** in the **IEEE - 2026 12th International Conference on Communication and Signal Processing (ICCSP 2026)** held at Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Predicting of Polycystic Ovary Syndrome (PCOS) Diagnoses and Risk Factors Using Logistic Regression"** in **IEEE - ICCSP 2026**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Predicting Drinking Water Safety Using Gradient Boosting Algorithm"** in **IEEE - ICCSP 2026**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"LeafGuard AI: Precision Plant Disease Detection"** in the **IEEE - 11th International Conference on Communication and Signal Processing (ICCSP 2025)** held at Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Optimized Machine Learning Models for Diabetes Prediction – Hyperparameter Tuned Comparative Study"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Enhancing Post-Quantum Cryptographic Protocols with Quantum-Resistant Key Exchange Mechanisms"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Transformer Based Federated Learning Framework for Heart Disease Prediction"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Advancing Remote Cognitive Assessments through Telemedicine with Cloud Computing and AdaBoost Classifiers"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Real-Time Traffic Violation Detection with Automated Enforcement Using Computer Vision"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).

- Published the conference paper **"Successful Data Delivery with Quality Aware Route Discovery in Vehicular Adhoc Networks in Urban Scenarios"** in **IEEE - ICCSP 2025**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Sign Language to Text Translator: A Semantic Approach with Ontological Framework"** in the **IEEE 10th International Conference on Communication and Signal Processing (ICCSP 2024)** held at Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Optimizing Payment Transaction Security: Utilizing Gradient Boosting Machines for Fraud Detection"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Aquatic Conservation Monitoring for River and Lake Ecosystems with IoT and Cloud Computing"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Tele-Rheumatology – Advanced Neural Network Model for Remote Assessment and Management of Rheumatic Conditions"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Implementing Real-Time Analytics for Enhanced Energy Efficiency in IoT-Integrated Smart Grid Systems"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Transfer Learning Based Multi-Class Malware Classification Using VGG16 Feature Extractor and SVM Classifier"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Non-Linear Grid Based Search Energy Optimization for AUV Aided Underwater Acoustic Sensor Network"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Published the conference paper **"Virtual Trial Room for Online Shopping"** in **IEEE ICCSP 2024**, Melmaruvathur, India. (Indexed in Scopus).
- Presented the research paper **"Flexible Solar Cell Integrated Transparent Patch Antenna for IoT in 5G Applications"** at the **International Conference on Innovations and Technological Development in Electronics, Computers and Communications**, organized by **SRM Institute of Science and Technology, Chennai**, in 2024.
- Presented the research paper **"Modernizing Patch Antenna Wearables for 5G Applications"** at the **4th International Conference on Machine Intelligence and Signal Processing (MISP 2022)** organized by the **National Institute of Technology (NIT), Raipur**, in 2022.
- Presented the research paper **"Wearable Patch Antenna on Meta Surface Ground for 5G Applications"** at the **International Conference on Smart Technologies and Applications (ICSTA 2022)** organized by **Ramco Institute of Technology, Rajapalayam**, in 2022.
- Presented the research paper **"Solar Cell Integrated Patch Antenna for 5G Wireless Applications"** at the **2nd International e-Conference on Information, Communication and Networking (e-ICICN 2021)** organized by **SRM Easwari Engineering College, Chennai**, in 2021.

- Presented the research paper **"Meta Surface Based Wearable Patch Antenna for 5G Wireless Body Area Network Applications"** at the **2nd International e-Conference on Information, Communication and Networking (e-ICICN 2021)** organized by **SRM Easwari Engineering College, Chennai**, in 2021.
- Published the conference paper **"Development of Microstrip Patch Antenna Integrated on Solar Cell Based Artificial Magnetic Conductor Surface for Green Wireless Applications"** in the **2020 IEEE International Conference on Decision Aid Sciences and Application (DASA 2020)** held in **Sakheer, Bahrain**. (Indexed in Scopus).
- Presented the research paper **"Solar Cell Integrated Slot Patch Antenna for 5G Mobile Communications"** at the **AICTE Sponsored International Conference on Antenna Innovations, 5G Communications and Network Technologies (ICA5NT 2020)** organized by **Velammal Institute of Technology, Chennai**, in 2020.
- Presented the research paper **"Wearable Textile Antenna Integrated on AMC for Next Generation IoT and Wireless Body Area Network Applications"** at the **International Conference on Innovative Trends in Engineering and Technology**, **Sri Krishna College of Engineering, Vellore**, in 2019.
- Presented the research paper **"A Circularly Polarized Implantable Antenna for Biomedical Applications"** at the **International Conference on Innovative Trends in Engineering and Technology**, **Sri Krishna College of Engineering, Vellore**, in 2019.
- Presented the research paper **"Design and Analysis of Microstrip Slot Patch Antenna"** at the **International Conference on New Frontiers of Engineering, Science, Management and Humanities, NITTTR, Chennai**, in 2017.
- Presented the research paper **"Design and Analysis of Microstrip Stepped Slotted Patch Antenna in WLAN Applications Using HFSS"** at the **National Conference on Advanced Trends in Computer Science**, **Madha Engineering College, Chennai**, in 2015.
- Presented the research paper **"Design of Planar Inverted-F Antenna for Wireless Communication"** at the **National Conference on Recent Trends in Information and Communication Engineering (RTICE 2014)** conducted by **P.T. Lee Chengalvaraya Naicker College of Engineering and Technology**, in 2014.
- Presented the research paper **"Reversible Steganography for Enhanced Security"** at the **National Conference on Signal Processing and Embedded System Applications (NCSPEs 2012)** conducted by **T.J. Institute of Technology, Chennai**, in 2012.
- Presented the research paper **"ZVS Quasi-Resonant Luo Converter"** at the **National Conference on Soft Skill Applications for Solid State Drives (SSASSD 2009)** conducted by **Rajalakshmi Engineering College, Chennai**, in 2009.

Book Chapter:

- Published the book chapter **"Modernizing Patch Antenna Wearables for 5G Applications"** in the book **Machine Learning and Computational Intelligence Techniques for Data Engineering**, presented at **MISP 2022** and published in **Lecture Notes in Electrical Engineering (LNEE)**, Volume 998, Springer, Singapore, in 2023.
https://doi.org/10.1007/978-981-99-0047-3_44.

- Published the book chapter "Analysis of Patch Antennas for 5G Green Wireless Communication: Integration of Solar Cell Aspects" in the book Design and Optimization of Wearable, Implantable, and Edible Antennas, was published by IGI Global in August 2024. DOI: 10.4018/979-8-3693-2659-6, ISBN-13: 9798369326596, Softcover ISBN: 9798369345719, and eISBN: 9798369326602.

Reviewer Details:

- Served as a **Reviewer** for the **Progress In Electromagnetics Research (PIER) Journal**, reviewing research manuscripts in the field of electromagnetics, antennas, and wireless communication.
- Served as a **Reviewer** for the **IEEE Sponsored International Conference on Communication and Signal Processing (ICCSP)**, Melmaruvathur, India, evaluating technical papers submitted in the areas of communication, signal processing, electronics, and related engineering disciplines.
- Served as a **Reviewer** for the **IEEE Sponsored 4th International Conference on Networks and Cryptology (NetCry 2025)**, New Delhi, India, reviewing research papers in the fields of computer networks, cybersecurity, cryptology, and emerging communication technologies.