

Dr. R. Gandhi Raj

Assistant Professor (Selection Grade),
Department of EEE,
University College of Engineering,
BIT Campus,
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Educational Qualification:

- ❖ **Doctor of Philosophy (Ph.D.)** in Design and Development of Transformer-Based Multilevel Inverter for Medium Voltage Applications, Anna University, Chennai.
- ❖ **Master of Engineering (M.E.)** in Power Electronics and Drives, College of Engineering, Guindy, Anna University, Chennai.
- ❖ **Bachelor of Engineering (B.E.)** in Electrical and Electronics Engineering, Mepco Schlenk Engineering College, Sivakasi.

Teaching Experience: (18 Years)

- ❖ **Assistant Professor (Selection Grade)** in University College of Engineering, (BIT Campus), Anna University, Tiruchirappalli from **2018 to Till Date.**
- ❖ **Assistant Professor (Senior Grade)** in University College of Engineering, (BIT Campus), Anna University, Tiruchirappalli from **2014 to 2018.**
- ❖ **Assistant Professor** in University College of Engineering, (BIT Campus), Anna University, Tiruchirappalli from **2009 to 2014.**
- ❖ **Lecturer** in **SRM Valliammai Engineering College**, Kattankulathur, Chennai from **2008 to 2009.**
- ❖ **Lecturer** in **Sri Venkateswara College of Engineering and Technology**, Chennai from **2007 to 2008.**

Research Interests

- ❖ Power Electronics
- ❖ Renewable Energy Systems

Awards and Honours

- ❖ Qualified GATE twice with a valid score
- ❖ Recognized as an “NPTEL Star” – “NPTEL Enthusiast” in December 2019

Research Guidance

- ❖ Number of Ph. D Completed under my Guidance: **01**
- ❖ Number of Ph. D Scholars Guiding: **06**
- ❖ Number of M.E Projects Guided : **19**
- ❖ Number of B.E Projects Guided : **27**

Patent filed

Sl.No	Title of the Patent	Design Number	Date
1	Pen With a Voice Recognized Calculator	407591-001	15/02/2024
2	Object Monitoring Device	422594-001	08/07/2024
3	Equation Solving Electronic Device	434731-001	18/10/2024

Memberships in Professional Bodies/ Academic related

1. **Life Member** in “The Institute of Engineers (India)” from **November 2016**
Membership Number: M-1565030.
2. **Life Member** in “The Indian Society for Technical Education” from 2016
Membership Number: LM 114040.

Sponsored Project

Sl.No	Title of the Project	Funding Agency	Year	Amount	Participation	Status
1	Implementation of Hybrid model of wind-driven Alternator and Photovoltaic Array based on Sliding Mode Control using Space Vector Modulation technique	Tamilnadu State Council for Science and Technology (Ref: TNSCST/SPS/AR/2010-2011)	2010	Rs.6000	Guide	Completed
2	Design and Implementation of Symmetrical and Asymmetrical Multilevel Inverter Topologies with less value of THD for High Power Application	TEQIP-II	2016	Rs. 10000	Guide	Completed
3	Voice-based Smart Wheelchair for Physically Challenged People	Centre for Sponsored Research and Consultancy Anna University, Chennai	2024	Rs.20000	Mentor	Completed

Research Publications

1. S Senthilkumar, V Mohan, SP Mangaiyarkarasi, **R Gandhi Raj**, K Kalaivani, N Kopperundevi, M Chinnadurai, M Nuthal Srinivasan, L Ramachandran “Nature-inspired MPPT algorithms for solar PV and fault classification using deep learning techniques” Discover Applied Sciences, Volume 7, issue 31, page 1-24, (2025), Springer International Publishing, ISSN: 3004-9261
2. Jansirani G, **Gandhi Raj R**, “Miniaturised wide and Dual band Reconfigurable Antenna on-demand for Portable Wireless Devices” Technical Gazette, Volume 31, (2024) Page 2022-2027, ISSN 1330-3651, Impact Factor - 1.0
3. Jansirani G, **Gandhi Raj R**, “Metamaterial Inspired Stub Incorporated Quad Band Diamond Shaped Monopole Antenna for Satellite and Wireless Application” Measurement Science Review, Volume 24, (2024) page 145-149. ISSN 1335-8871 Impact Factor – 1.1
4. S. Sivamani, S. P. Mangaiyarkarasi, **R. Gandhi Raj**, S. Senthilkumar, “A quad DC source switched three-phase multilevel DC-link inverter topology” Scientific Reports, volume 14, issue: 1, Article number: 2065 (2024) ISSN 2045-2322 (online), Impact Factor - 3.8
5. R. Subhasini, S. Gayathri Priya, J. Rajalakshmi, **R. Gandhi Raj**, “An Adaptive Deep Brief Network based Intelligent moving Robot for Navigation Control using Mamdani-Sugeno Fuzzy Inference System” Technical Gazette, Vol. 31, issue no. 4, (2024) ISSN 1330-3651, Impact Factor - 1.0
6. P. Saravanan, **R. Gandhi Raj**, Pudisekhar, P. Vijayarajan “Speed Control of Brushless DC Electric Motor (BLDC) Motor Using Hybrid Takagi Sugeno Fuzzy Logic and Enhanced Gravitational Search Algorithm with PSO” Electrical Power Components and Systems, Vol. 52, No. 9, pp. 1692–1705, (2024), Impact Factor - 1.7
7. B. Palpandi, **R. Gandhi Raj**, “Development and mathematical analysis of novel MLI topology for IM drive with fuzzy logic control” AIP Conference Proceedings 3000,020011 (2024) ISSN 0094-243X.
8. Lijo Jacob Varghese, **R. Gandhi Raj**, R.S. Ravi Sankar, and Zhenhai Tan “Design of Total Harmonic Distortion Reduction Using Quantum Coyote Optimization Algorithm for Hybrid Power Generation Systems” Journal of Circuits, Systems and Computers Vol. 32, No. 17, 2350287(16 pages) (2023) ISSN (print): 0218-1266, Impact Factor - 0.9
9. S. John Joseph & **R. Gandhi Raj** “Hybrid optimized feature selection and deep learning based COVID-19 disease prediction” Computer Methods in Biomechanics and Biomedical Engineering, Vol. 26, Issue 16, pp.2070-2088, (2023) ISSN (print): 1025-5842, Impact Factor - 1.7
10. N. Ilavarasan, **R. Gandhi Raj**, S. Anitha Elavarasi, K.S. Guruprakash, “Geographical Weather Prediction Using Sigmoidal Regression Learning Scheme for Crop Yield Applications” Journal of Environmental Protection and Ecology, Vol. 23, No. 8, pp. 3518–3526, (2022), ISSN 1311-5065 Impact Factor - 0.657
11. Kaviarasi R & **Gandhi Raj R**, “Prediction System for the Lung Cancer Patients and Classification Accuracy Enhancement Using Ensemble Method”, Journal of Medical Imaging and Health Informatics, Vol. 11, no. 3, pp. 1-7, (2021), ISSN: 2156-7018, Impact Factor- 0.659.
12. Kaviarasi R & **Gandhi Raj R**, “Accuracy Enhanced Lung Cancer Prognosis for Improving Patient Survivability Using Proposed Gaussian Classifier System”, Journal of Medical Systems, vol. 43, no. 201, PP.1-9, (2019), ISSN: 1573-689X, Impact Factor - 3.058.
13. **Gandhi Raj R** & Palpandi B, “Development of Fuzzy Logic-Based Speed Control of Novel Multilevel Inverter fed Induction Motor Drive” Applied Mathematics & Information Sciences, vol. 12, no. 4, pp. 745-752, (2018), ISSN: 2325-0399, Impact Factor -1.232.

14. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "FPGA based implementation of the push-pull configuration of a single-phase multilevel inverter with a novel PWM technique", *Applied Mathematics & Information Sciences*, vol. 11, no. 3, pp. 827-835, (2017), ISSN: 2325-0399, Impact Factor - 1.232.
15. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "A state space modelling and implementation of a new transformer based multilevel inverter topology with reduced switch count", *Circuits and Systems*, vol. 7, pp.446-463, (2016), ISSN: 2153-1285.
16. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Development of a New Boost Multilevel Inverter Topology with Reduced Switch Count", *International Journal of Control Theory and Applications*, Volume No. 9, Issue No: 2, Pages: 639-653, Year: 2016, ISSN No: 0974-5572.
17. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Implementation of PV fed a new cascaded boost multilevel inverter topology for isolated load", *Middle-East Journal of Scientific Research*, vol. 24, no. 3, pp. 809-822, (2016), ISSN: 1990-9233.

Conference paper presented

1. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Design and Development of a New Symmetric and Asymmetric Multilevel Inverter Topology", *International Conference on Emerging Trends in Electrical, Electronics and Communication Systems (ICEEECS'16)*, Sep. 24-26, 2016, India, Organised by Department of EEE, **Anna University, BIT Campus**, Tiruchirappalli.
2. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Implementation of a New Asymmetrical 37- Level Inverter with Reduced Power Switches and Sources", *International Conference on Emerging Trends in Electrical, Electronics and Communication Systems (ICEEECS'16)*, Sep. 24-26, 2016, India, Organised by Department of EEE, **Anna University, BIT Campus**, Tiruchirappalli.
3. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Development of State Space Modeling of a New Cascaded Boost Multilevel Inverter Topology", *IEEE Sponsored 3rd International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS'16)* Mar. 17-18, 2016, India, Organised by Department of ECE, **Karpagam College of Engineering, Coimbatore**. (Presented through online mode)
4. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Development of Reduced switch Single Phase Multilevel Inverter fed from Isolated Photovoltaic Systems", *International Conference on Power and Energy Systems (ICPES'13)*, Dec. 19-21, 2013, India, Organised by Department of EEE, **Velammal College of Engineering & Technology, Madurai**.
5. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Transformer based five level inverter fed induction motor drive with fuzzy logic controller", *National conference on Electrical Systems and Renewable Energy (NESR'17)* Mar.24-25,2017, Organised by Department of EEE, **Anna University, BIT Campus**, Tiruchirappalli.
6. **Gandhi Raj R**, Palani S & Habeebullah Sait H, "Design and Implementation of new cascaded boost multilevel inverter topology with reduced component count", *National conference on power and renewable energy systems- NCPRES'16*, Jan.29-30,2016, Organised by Department of EEE, **Velammal College of Engineering & Technology, Madurai**.

Book Published

1. A book on “**Electrical Drives and Control**” Tamil medium for Mechanical Engineering (ISBN: 9788192112817) Anna University Technology, Tiruchirappalli 2012.

FDP/ Webinar/ Workshop /Value Added Courses Organized

1. Organized One day national level workshop on Applications of Power Electronics In E-Vehicle on 14-09-2022
2. Co-ordinator for 2-week AICTE sponsored AICTE Two Week FDP under AQIS - Future Automation of Power System Protection in Indian Power Sector (ONLINE) Phase II: 11.12.2021 to 24.12.2021
3. Organized webinar on “Recent Trends in VLSI Technologies” on 25-07-2020 through Google meet.
4. Organized webinar on “Modern Techniques to Predict the cardiovascular disease (CVD) from Retinal Images” on 09-07-2020 through Google meet.
5. Organized One day workshop on “Measurement of Power Quality parameters in Power Electronic Circuits” on 15th February 2020.
6. Co-ordinator of one-week Centre for Faculty Development, Anna University Chennai sponsored FDTP on “IC6501- Control Systems” from 15th- 21st May 2018.
7. Organized One day workshop on “Hands-on Experience on Power Quality Measurement Tools” on 21st March 2018. Department of Electrical and Electronics Engineering, University College of Engineering, BIT Campus, Anna University, Tiruchirappalli.
8. Organized TEQIP II sponsored one-week Value Added Course on “Hands on Experience in Electrical and Electronics Engineering” from 15-03-2017 to 21-03-2017.
9. Organized TEQIP II sponsored technical symposium “AVESHAA’16” on 23rd and 24th March 2016.
10. Organized TEQIP II sponsored one-week Faculty Development Programme on “Research Avenues in Power Electronics” from 09-12-2013 to 15-12-2013.
11. Organized national conference on “Engineering Approach for Sustainable Development” on September 27, 2011.
12. Organized two-day workshop on “Soft Computing Techniques in Power Electronics Systems” 2nd and 3rd February 2011.

Online NPTEL Courses Attended

Sl.No.	Subject	Organized Institute	Month & Year
1	Fundamentals of Electric Drives	IIT-Kanpur	Jul-Sep 2019
2	DC Microgrid	IIT-Roorkee	Jul-Sep 2019
3	Introduction to Internet of Things	IIT-Kharagpur	Jan-Apr 2019
4	Control Engineering	IIT-Madras	Jan-Apr 2019
5	Advance Power Electronics and Control	IIT-Roorkee	Jan-Mar 2019
6	Advanced IOT Applications	IISc-Bangalore	Jan-Mar 2019
7	Advanced Linear Continuous Control Systems: Applications with MATLAB Programming and Simulink	IIT-Roorkee	Aug-Oct 2018
8	Design of Photovoltaic Systems	IISc-Bangalore	Jul-Oct 2018
9	Introduction to Smart Grid	IIT-Roorkee	Aug-Sep 2018
10	Technical English for Engineers	IIT-Madras	Aug-Sep 2018

FDP /Short term /Workshop/Training Courses Attended

1. Participated and successfully completed the 5-day online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 14th March, 2022 to 18th March, 2022.
2. Participated & Completed successfully AICTE sponsored two weeks online Faculty Development Programme on “Trends and Challenges in Power Converters and Control: Slot – I” organised by Department of Electrical and Electronics Engineering, College of Engineering, Anna University, Chennai from 09.02.2021 to 23.02.2021.
3. Participated & completed successfully AICTE Training and Learning (ATAL) Academy Online FDP on “Energy Engineering” from 28.12.2020 to 01.01.2021 at National Institute of Technology, Tiruchirappalli.
4. Participated in a 40-hour Online Faculty Development Program titled “Data Science for ALL” organized by Electronics and ICT academies during 27 July-8 August 2020.
5. Attended 3-week “Industrial Training Program on Communication and Network Technologies” conducted by BSNL from 01-06-2020 to 19-06-2020.
6. Attended one-week Centre for Faculty Development, Anna University Chennai Sponsored FDP on “EC 8251-Electric Circuit Analysis” held at Government College of Engineering, Srirangam from 02-12-2019 to 07-12-2019.
7. Attended Twelve days Centre for Faculty Development Anna University Chennai Sponsored Faculty Development Training Programme on “IC 8451- Control Systems” held at Kongunadu College of Engineering and Technology Thottiam, Trichy from 28-11-2018 to 11-12-2018.
8. Attended one-week short term course on “MATLAB Programming” from 25-06-2018 to 29-06-2018 organized by National Institute of Technical Teachers Training and Research (NITTTR) Chennai.
9. Attended CSIR sponsored National Seminar on “Role of Power Electronic Converters in Distributed Generation and Microgrid” during 31-08-2017 & 01-09-2017 organized by Department of EEE, TRP Engineering College, Tiruchirappalli.
10. Attended National workshop on “Intelligent Systems Engineering” during 27-28 July, 2017 organized by National Institute of Technology (NIT), Tiruchirappalli.
11. Attended TEQIP II sponsored two-week Faculty Development Programme on “Computation, Optimization and Modelling of Sustainable Energy Systems” from 20-06-2016 to 03-07-2016 organized by Department of EEE, Anna University, BIT Campus, Tiruchirappalli.
12. Attended one day TEQIP II sponsored course on Faculty Development Programme organized by Bharathidasan Institute of Technology (BIT) campus, Anna University, Tiruchirappalli in association with Confederation of Indian Industry (CII) on 1st March 2016.
13. Attended one-week TEQIP II sponsored Faculty Development Programme on “Role of Renewable Energy in Indian Power Sector” from 21-09-2015 to 27-09-2015 organized by Department of EEE, BIT campus, Anna University, Tiruchirappalli.
14. Attended three-day course on “Application of Power Electronics to Renewable Energy System and Micro Grids” from 8th to 10th February 2015 organized by Department of EEE, National Institute of Technology (NIT), Tiruchirappalli.
15. Attended three-day training programme on Cadence “OrCAD Simulation and PCB Design Software” from 12-08-2014 to 14-08-2014 at University College of Engineering, Villupuram, conducted by FTD Automation Pvt. Ltd., Bangalore.
16. Attended Faculty Development Programme on “Introduction to Research Methodology” organized by the Centre for Continuing Education, Indian Institute of Technology (IIT) Madras on 30th and 31st August 2013.
17. Attended AICTE sponsored two-week Faculty Development Programme on “Avenues for Advanced Research in Modern Power Electronics and Hybrid Energy Systems” during 15th May – 28th May 2013.
18. Attended one day workshop on “Teaching Skills and Smart Class Room Tools” at Centre for Faculty Development Anna University, Chennai on 07th January 2013.

19. Attended one-week TEQIP II sponsored Faculty Development Programme on “Power Electronic Controllers for Renewable Energy Sources” from 05-11-2012 to 11-11-2012 organized by Department of EEE, AlagappaChettiar College of Engineering and Technology, Karaikudi.
20. Attended two-day workshop on “Energy Management and conservation in Modern Buildings” on 20th and 21st of December 2010 organized by Department of EEE, Anna University of Technology, Tiruchirappalli.
21. Attended two-day workshop on “Embedded Engineering Solutions for Automation” conducted by Department of EEE, Anna University of Technology, Tiruchirappalli on 14th and 15th of October 2010.
22. Attended MHRD-AICTE sponsored Staff Development Programme on “Recent Researches on Fuzzy Logic and Neural Networks” organized by the Department of Mathematics and Electrical & Electronics Engineering from 21st June-03rd July 2010.
23. Attended Faculty Development Training Programme on “Power Electronics” at College of Engineering, Guindy, Anna University, Chennai from 1st to 7th June 2009.
24. Attended three-day workshop on “Intelligent Systems and Control” organized by the Department of EEE, SSN College of Engineering, during 18-20 December, 2008.
25. Attended Faculty Development Programme on “Microprocessors and Microcontrollers” on 3rd and 4th December 2008 conducted by EEE Department, Jerusalem College of Engineering, Chennai.
26. Attended Faculty development Training Programme on “Solid State Drives” at College of Engineering, Guindy campus, Anna University, Chennai from 24th to 30th November 2008.
27. Attended two-day workshop on “Design Trends in Deep-Submicron CMOS VLSI” on 28th -29th March 2008 conducted by Department of ECE, College of Engineering, Guindy, Anna University, Chennai.

Guest Lecture/ Invited Lecture Delivered

1. Delivered Guest lecture on IC8451-Control Systems in OASYS Engineering College, Trichy on 13-03-2020.
2. Delivered Guest lecture on AC Circuit Analysis (EE8251-Circuit Theory) in Anna University sponsored FDP on Circuit Theory at University College of Engineering, Pattukottai on 13-11-2019.
3. Delivered Guest lecture on Electromagnetic Theory at Mangaiyarkarasi Engineering College, Madurai on 13-09-2019.
4. Delivered Guest lecture on Real time implementation of FACTS controllers and its difficulties at M.I.E.T Engineering College, Trichy on 20-08-2019.
5. Delivered Guest lecture on State Space Analysis Techniques in Anna University sponsored FDP on Control Systems at University College of Engineering, Pattukottai on 14-05-2015.

DECLARATION:

I certify that the information furnished above is correct and true to the best of my knowledge and belief.

(Dr. R. Gandhi Raj)