



## Bio-data

1. Name Dr. Mini Rajeev
2. Designation & Official address Associate Professor & Associate Dean,  
Department of Electrical Engineering,  
Agnel Charities' Fr. C. Rodrigues  
Institute of Technology, Sector-9A,  
Vashi, 400703.
3. Date of Birth 27<sup>th</sup> May 1969
4. Total Experience 32 yrs  
Teaching 29 yrs  
Industrial/Research 3yrs

## 5. Qualification

Examination	Year	Institution/Univ.	Branch/Specialization	Percentage/CGPI
B. Tech.	1990	University of Kerala	Electrical & Electronics	77% (Distinction)
M. Tech.	2002	IIT Bombay	Power Electronics & Power Systems	8.87 /10
Ph.D.	2018	IIT Bombay	Power Electronics & Power Systems	----

## 6. Employment Record

Institution	Year	Designation	Posted at
Fr. C. Rodrigues Institute of Technology	Oct 2010 to till date	Associate Professor	Navi Mumbai
Fr. C. Rodrigues Institute of Technology	June 2003 - Sept 2010	Assistant Professor	Navi Mumbai
Fr. C. Rodrigues Institute of Technology	July 1995 - May 2003	Lecturer	Navi Mumbai
S.S.B Industries Pvt. Ltd.	Feb 1993 - Nov 1994	Design & Development Engineer	Bangalore
Central Power Research Institute	Dec 1991 - Feb 1993	Research Associate	Bangalore

## 7. Achievements/Awards

1. **Performance award** for work excellence from SSB Industries Pvt. Ltd., 1994, Bangalore.
2. UG Project, "Solar Powered Street light" won **2nd prize in best project** category in KAIF-2009, national level project competition by Tata Power Co. Ltd.
3. Won "**Third best paper**" award for the paper titled, "A study of replacing CFL by LED light for Solar Powered Street Light in Standalone Systems" in NCNTE-2010.
4. Won **Certificate of Excellence** in 10 day ISTE workshop on Solar Photovoltaic Fundamentals, Technologies and Applications conducted by IIT Bombay in Dec. 2011.
5. Received **scholarship** under Quality Improvement Program of AICTE, Govt. of India, for pursuing Ph.D.

6. Received “**Best Paper of the Conference**”, award from IEEE International Conference, CCUBE 2017, RNSIT, Bangalore, Dec.2017.
7. Received the award “**Best faculty of the year- Specific Innovations-manifest in prototypes, patents**”, at CSI Tech Next India-2018-Awards to Academia, Feb.2018.
8. **Won POSOCO Power System Award (PPSA-2019)** in Doctoral Category from POSOCO Ltd. and Foundation for Innovation & Technology Transfer (FITT), IIT Delhi for **research excellence in Ph.D. thesis**.
9. Received faculty incentives, three times from Fr. CRIT, Vashi.
10. Received **Silver medal** for Swayam Course on “Design and Simulation of Power conversion using open source tools” in FH 2020.
11. Received “**K. Shankar Meritorious Paper Award**” in Doctoral category from IEEE Bombay section for the paper titled “Low Voltage Ride-Through Capability of a Novel Grid Connected Inverter Suitable for Transformer-Less Solar PV–Grid Interface”, published in IEEE Transactions on Industry Applications.
12. Appeared in **Worlds Scientist and University Rankings 2021** by AD Scientific Index.
13. Received “**Best Paper of the track**”, award from IEEE international conference, ICNTE 2023, Fr. CRIT, Jan. 2023.
14. Received “**ISGF Innovation Awards 2023**”, under the category, Smart Technology - Electricity Distribution, for the PG project titled “Transformer-less Inverter with Improved gain suitable for Photovoltaic-Grid Interface”, March 2023.

8. **Funds Received**

Name of organization	Type of grant	Amount	Year	Project/FDP title/Event
Fr. CRIT, Vashi	Minor research grant	44,500/-	2007-2009	Solar Powered Street Light
University of Mumbai	Minor research grant	45,000/-	2018-2019	Implementation of a Single phase transformer-less Grid tied Inverter with improved gain
Tata Institute of Fundamental Research (TIFR), Mumbai	Funded project	38,964/-	2020-2022	Compact DC to DC converter for Powering FPGA systems
ATAL academy - AICTE	Sponsored FDP	93,000/-	2021-2022	Power Electronic Systems and its Real Time Control Implementation in DSP
IEEE Bombay section	STEM education fund	32,500/-	2021 & 2022	STEM education in schools by IEEE-FCRIT Student Branch (STB61121)
Crompton Greaves CSR foundation	Societal need	90,000/-	2022-2023	Solar lamp distribution in Ambele & Kalamkhande villages ,Thane
Tata Power Co. Ltd., Mumbai.	Need based project	13,605/-	2022-2023	Transformer Testing time reduction with common testing leads via switch box
AICTE Grant	Grant for organizing Conference	2,68,073/-	2023	Received grant for IEEE-ICNTE 2023 as conference chair

9. **Professional Societies Fellowship / Membership**

1. Senior Member- IEEE
2. Fellow of Institution of Engineers India (IEI)
3. Life Member of ISTE
4. Fellow of Indian Society of Lighting Engineers (ISLE)
5. Life Member of Solar Energy Society of India (SESI)-LM/2817/2023

10. **Projects guided**

**UG level**

Around forty projects guided in **UG level**.

**PG level**

- (i) Design and implementation of stand-alone solar powered LED lighting for indoor application
- (ii) PV Powered PMLDC Motor for Water Pumping.
- (iii) Design and Simulation of Solar PV Based Grid Connected System.
- (iv) Modeling, Controlling and Simulation of Fuel cell based Power Supply system for Residential Applications.
- (v) Design and Implementation of Triple Port Half Bridge Converter for Stand Alone PV System.
- (vi) Design and Implementation of a Multilevel inverter for PV grid connection.
- (vii) Implementation of Transformer-less Inverter topology for single phase PV fed Grid connected System.
- (viii) Implementation of Multilevel DC link Inverter.
- (ix) Implementation of an active power decoupling method using active buffer in a single phase PV-Inverter.
- (x) Single phase transformer-less inverter with improved gain for transformer-less grid-PV systems.

**Ph.D. level (ongoing)**

- (i) Investigation of Current Source inverter for Grid connected Solar Photovoltaic Systems.
- (ii) Investigation of Multi-Port Converters for Stand-Alone Solar Photovoltaic Systems

11. **Position held**

1. Member of UG & PG syllabus setting committee of University of Mumbai.
2. M. Tech project external examiner at Electrical Dept. & Energy Science Dept., IIT Bombay.
3. Member of the Examination Vigilance Squad, University of Mumbai, 2011-2012.
4. Alumni Coordinator of the institute, Fr. CRIT, Vashi.
5. Joint Chief Conductor of Examinations appointed by University of Mumbai at Datta Meghe College of Engg., May/June 2013.
6. Board member for USSC interview at Vishwaniketan Institute, Khalapur, 2018.
7. Judge for Student Academic Conference, 7th Inter IIT Tech meet-2018, IIT Bombay.
8. Presiding Officer, ICC for PPSHWES (2018-2023).
9. Chairman, IEI (BLC)-FCRIT Excellence Award Committee, ICNTE-2019.
10. Conference chair, ICNTE 2021, International Conference technically co-sponsored by IEEE and IAS, ICNTE -2021, 15-16 January 2021.
11. Virtual Speaker- IEEE Students Activities Virtual Speakers Bureau.
12. Coordinator of ATAL academy sponsored FDP in Power Electronics -November 8<sup>th</sup>-12<sup>th</sup> 2021.
13. Member of IEEE Smart grid steering committee
14. IEEE - FCRIT Student Branch (STB 61121) Counselor since 2021.
15. Presiding Officer-ICC for Prevention & Prohibition of Sexual Harassment of Women 2020-Nov. 2023.

16. Jury member for selecting students for Narotam Sekharia Foundation Scholarship for children of police personnel, 2022-2023.

16. Conference Chair –ICNTE 2023, International Conference technically co-sponsored by IEEE and IAS, ICNTE -2021, 20-21, Jan. 2023.

## 12. Publications

### Journal - IEEE Transactions:

1. **Mini Rajeev** and V. Agarwal, "Single Phase Current Source Inverter with Multi loop Control for Transformer-less Grid–PV Interface," IEEE Transactions on Industry Applications, vol. 54, no. 3, pp. 2416-2424, May-June 2018.

2. **Mini Rajeev** and V. Agarwal, "Analysis and Control of a Novel Transformer-Less Micro-inverter for PV-Grid Interface," IEEE Journal of Photovoltaics, vol. 8, no. 4, pp. 1110-1118, July 2018.

3. **Mini Rajeev** and V. Agarwal, "Low Voltage Ride-Through Capability of a Novel Grid Connected Inverter Suitable for Transformer-Less Solar PV–Grid Interface," in IEEE Transactions on Industry Applications, vol. 56, no. 3, pp. 2799-2806, May-June 2020.

### Other Journals:

4. **Mini Rajeev**, Shiva. B, Varun. B, Hiten. M, "The implementation of a microcontroller based boost converter for Photovoltaic interface", Int. Journal on Recent trends in Engineering and Technology, vol.6, no.2, Nov.2011, ACEEE, USA.

5. Sreedevi S. Nair, **Mini Rajeev**, "Effect of luminaries and Heat sink on the performance of PV powered HPLED lighting for Indoor Applications", Int. Journal of Current Engineering and Technology, vol.6, no.2, June 2013.

6. Sangita R Nandurkar, **Mini Rajeev**, "Modeling Simulation and Design of Photovoltaic Array with MPPT Control Techniques", Int. Journal of Applied Power Engineering, vol.3, no.1, 41-50, 2014.

7. Parimal Patil, **Mini Rajeev** "Comparison of three different topologies of a five level Multi level inverter", Int. Journal of Engineering Research & Technology (IJERT), ICNTE – 2015, vol. 3, issue 01.

8. Pratik D. Rahate, **Mini Rajeev**, "Single Phase Transformer-less Inverter and its Closed Loop Control for Grid Connected PV Applications", Int. journal of Electrical, Electronics and Computer Systems, vol.3, no.5,33-37,2015.

9. Ramkumar L Maurya, **Mini Rajeev**, "Comparative Evaluation of Cascaded Half-Bridge Multilevel DC-Link Inverter and Conventional H Bridge Multilevel Inverter", Int. Journal for Research in Applied Science & Engineering Technology, vol.3, no.10, 460-467, Oct.2015.

10. Ramkumar L Maurya, **Mini Rajeev**, " Introduction to Multilevel DC-Link Inverter and Comparison of Switching Strategies for Cascaded Half Bridge Multilevel DC-Link Inverter", International Journal of Global Technology Initiatives, vol.5, no.1, B8-B16, 2016.

11. F. Khan, **Mini Rajeev**, "A Multi-Port Half Bridge DC-DC Converter for PV Application", Int. Journal of Electrical Electronics & Computer Science Engineering Volume 4, Issue 6, Dec.2017.

12. **Mini Rajeev** et al, "Small Scale Implementation of Smart Farming using Internet of Things", accepted for publication in SAMRIDDHI, A Journal for Physical Sciences, Engineering and Technology (S-JPSET), vol.13, Special Issue 2, pp.174-181, Dec. 2021, Online ISSN : 2454-5767.

### **International/National Conferences:**

13. **Mini Rajeev**, “An input current shaper with Boost and Flyback converter using Integrated Magnetics”, Fifth International IEEE conference on Power Electronics & Drives Systems (PEDS 2003), Singapore, Nov. 17-21, 2003.
14. **Mini Rajeev**, Seema Jadhav, Kirtish, “Design and Implementation of MPPT System for Battery Charging Application using Solar Panel”, International Conference, Renewable Energy Asia-2008 (REA 2008), IITDelhi,11-13, Dec. 2008. **Proceedings published as a book.**
15. **Mini Rajeev**, Divya .M, Ruchi .H “A comparative study of Boost and Buck Converter Topologies for Solar Photovoltaic Standalone Systems”, presented in National Conference on Alternate Energy Sources”, Pune,31<sup>st</sup> Jan. 2009.
16. **Mini Rajeev**, Divya .M, Ruchi .H “A study of replacing CFL by LED light for Solar Powered Street Light in Standalone Systems NCNTE 2010, Fr.C.R.I.T., Vashi , Feb.25-26, 2010.
17. **Mini Rajeev**, Sreedevi.S.Nair, Seema Jadhav, “Design Considerations of a Solar Powered Street Light for Standalone PV Systems”, CCPE 2010, Chennai, 28-29, July, 2010.
18. **Mini Rajeev**, Sreedevi Sanjeev Nair, “Economic Feasibility of solar powered street light using high power LED –A case study”, International conference ICREU-2012, Coimbatore.
19. Sreedevi S. Nair, **Mini Rajeev**, “Performance of solar powered HPLED lamp for indoor lighting-A Case Study”, presented at an international conference ISG-2012, Pune.
20. Sangita R Nandurkar, **Mini Rajeev**, “Design and Simulation of three phase Inverter for grid connected Photovoltaic systems”, national conference NCNTE-2012, Fr.C.R.I.T., Vashi.
21. Sreedevi S. Nair, **Mini Rajeev** “Design and Implementation of driver circuit for high power LED”, a national conference NCNTE-2012, Fr.C.R.I.T.,Vashi.
22. Jisha Satheesh, **Mini Rajeev**, “Fuel Cell based Power supply system for Residential Applications”, National Conference NIRMANN 2013, A. C. P.C.E, Navi Mumbai.
23. Sreedevi.S.Nair, **Mini Rajeev** “Design and implementation of PMBLDC motor for solar powered pumps”, RACEM-2013, V.I.T, Mumbai.
24. **Mini Rajeev** and V. Agarwal, “Novel transformer-less inverter topology for single-phase grid connected photovoltaic system,” IEEE 42nd Photovoltaic Specialist Conference (PVSC), New Orleans, USA, pp. 1-5, Jun. 2015.
25. C. Phani Kumar, **Mini Rajeev** and V. Agarwal, “A novel single stage zero leakage current transformer-less inverter for grid connected PV systems,” IEEE 42<sup>nd</sup> PVSC 2015, New Orleans, USA, pp. 1-5, Jun. 2015.
26. **Mini Rajeev** and V. Agarwal, “Closed loop Control of Novel Transformer-less Inverter Topology for Single Phase Grid Connected Photovoltaic system,” IEEE PECS 2016, Illinois, pp.1-7, Feb.2016.
27. **Mini Rajeev** and Vivek Agarwal, “Current Source Inverter with reduced leakage current for Transformer-less Grid -PV interface”, presented at the 7th Power India Int. Conference IEEE PIICON 2016, Bikaner,25-27, Nov. 2016.
28. Ram kumar L Maurya, **Mini Rajeev**, “Implementation of multilevel DC-link inverter for standalone application”, Int. conference, ICNTE-2017, Fr.C.R.I.T.,Vashi, Jan 2017.
29. Shahbaz G. Shaikh and **Mini Rajeev**, “Active Power Decoupling method using active buffer in a single phase Photovoltaic (PV) inverter”, International Conference, EIT- 2017, New Delhi, June 2017.
30. **Mini Rajeev** and Vivek Agarwal, “Realization of a novel transformer-less grid-PV interfaced inverter”, IEEE Int. conference, CCUBE-2017, Bangalore, 15-17, Dec.2017.
31. S. Salvi, A. Antony, A. Parab, T. Pokale and **Mini Rajeev**, “Renewable Energy Application of Push Pull Converter”, all India seminar on Recent Trends in Renewable Energy Application & Research, The Institution of Engineers (India), Gujarat State Centre,16-17<sup>th</sup> Feb.2018.
32. **Mini Rajeev**, Vivek Agarwal, “Low Voltage Ride-Through Capability of a Novel Grid Connected Inverter Suitable for Transformer-less solar PV grid interface”,8<sup>th</sup> IEEE Int. conference IICPE-2018, MNIT, Jaipur,13-15<sup>th</sup> Dec.2018.

33. **Mini Rajeev**, Divya S., “Harmonic Compensation by Transformer-less Grid- tied PV inverter using Conservative Power Theory”, 5<sup>th</sup> IEEE Int. conference for Convergence in Technology, I2CT2019, Pune, 29<sup>th</sup>-31<sup>st</sup> Mar.2019.
34. Omkar Patkar, **Mini Rajeev**, “A Single Phase Inverter with Improved Gain Suitable for Transformer-Less PV Grid Interface”, Int. Conference, ICATE-2019, DMCE, Navi-Mumbai, 4-5<sup>th</sup> April 2019.
35. Omkar Patkar, **Mini Rajeev**, “Experimental Validation of a Transformer-less Inverter with improved gain for Grid-PV Interface”, NPEC-2019, NIT Trichi, 13-15<sup>th</sup> Dec. 2019.
36. **Mini Rajeev** et al, “Implementation of Bidirectional DC Converter and Inverter for Drive Application”, ICESD-2020, Jadavpur University, Kolkata, 14-15<sup>th</sup> Feb. 2020.
37. E. Jennifer Isaac, **Mini Rajeev**, “A survey of Current Source Inverter Topologies and Control Schemes for Grid connected PV Systems”, Int. Conference, ICATE-2020, DMCE, Navi Mumbai, 3<sup>rd</sup> April 2020.
38. **Mini Rajeev**, Article on “Solar Photovoltaic Systems”, IEI Souvenir, Jan. 2020.
39. Utkarsh Mishra, **Mini Rajeev**, “An Investigation in to the Parasitic Influence on the Performance of Buck-Boost converter”, IEEE-ICNTE-2021, 15-16<sup>th</sup>, Jan.2021.
40. **Mini Rajeev** et al, “Design and Implementation of a Compact DC-DC Converter for powering FPGAs”, IEEE CONECCT, IEEE Bangalore section, 9-11<sup>th</sup> July 2021.
41. **Mini Rajeev** et al, “Compact Power Supply for Induction Heating in Shrink Fitting”, accepted for publication in EPREC 2022, 26-27<sup>th</sup> May 2022, NIT Jamshedpur, to be published in “Lecture Notes in Electrical Engineering”, Springer.
42. Sreedevi S. Nair and **Mini Rajeev**, “Exploration of Three port converters and its multidisciplinary applications”, IEEE-2022 3rd Global Conference for Advancement in Technology (GCAT), IEEE Bangalore section, 7-9<sup>th</sup> October 2022.
43. Jennifer Isaac and **Mini Rajeev**, “Improved Current Source Inverter with Lesser Input Inductor for PV-Grid Interface”, IEEE ICETEMS 2022, Nagpur, 18-19<sup>th</sup> Nov. 2022.
44. **Mini Rajeev et al**, “Design and development of a small scale EMU model with motorman cabin emulation”, IEEE & IAS conf., ICNTE-2023, Fr. C.R.I.T., Vashi, 20-21<sup>st</sup>, Jan.2023.
45. **Mini Rajeev et al**, “Smart Gas Stove with inbuilt Safety Features”, IEEE & IAS conf., ICNTE-2023, Fr. C.R.I.T., Vashi, 20-21<sup>st</sup>, Jan.2023.
46. Sreedevi S. Nair and **Mini Rajeev**, A Novel High Gain Non-Isolated Three-port Converter for Stand-Alone PV Applications, IEEE-IC2E3, NIT Uttarakand, 8-9 June 2023, <https://doi.org/10.1109/IC2E357697.2023.10262587>.
47. **Mini Rajeev et al**, “Power Factor Improvement using PWM Rectifier in Shrink Fitting”, 2023 IEEE 2nd International Conference on Industrial Electronics: Developments & Applications (ICIDeA), NIT Manipur, 29-30 Sept. 2023. <https://doi.org/10.1109/ICIDeA59866.2023.10295198>.
48. Divya S. and **Mini Rajeev**, “Investigation of Right Half Plane Zero in Voltage Regulated Non-Ideal Boost Converter”, IEEE-ICPEICES 2024, Delhi COE, 26-28 April 2024.
49. Sushant K., Ganesh J., Baljot K., Trupti G., Mini Rajeev, “Closed Loop operation of Transformer-less Inverter in Voltage and Current Control mode”, IEEE-GIEST 2024, NIT Manipur, Oct.2024.
50. Shubham Pawar, Yash Prajapati and Mini Rajeev, “Power Flow and Performance Analysis of Three Port Converter in Street Light”, IEEE-GIEST 2024, NIT Manipur, Oct.2024.

### 13. Reviewer / TPC Member /Session Chair

1. Reviewer for IEEE Transactions in Industrial Applications
2. Reviewer for IEEE Transactions in Power Electronics
3. Reviewer for IEEE Transactions in Industrial Electronics
4. TPC member and Reviewer for TAP Energy, Amrita University.
5. Reviewer for ISSP-2017, G.H Patil College of Engg., Gujarat.
6. Reviewer for ICNTE-2017, Fr. C.R.I.T., Vashi.

7. Reviewer for Photo Voltaic Specialist Conference (PVSC-2015), LA, USA
8. Reviewer for Power & Energy Conference (PECI-2016), Illinois, USA
9. Reviewer for ICNTE-2019, Fr. C.R.I.T, Vashi.
10. Reviewer for Elsevier Journals-Solar Energy.
11. Reviewer for IETE Journal of Research.
12. Session chair for IEEE-ICAC3-2019, Fr. CRCE, Bandra.
13. Reviewer for IET-GTD and IET-PE Journals
14. Reviewer for IEEE-APEC 2020, USA
14. Reviewer for International Transactions on Electrical Energy Systems, Wiley.
15. TPC member and Reviewer for IEEE and IAS sponsored conference, GUCON 2020.
16. Reviewer for IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE)
17. Reviewer for ICNTE-2021, ICNTE-2023, Fr. C.R.I.T., Vashi.
18. Reviewer for IEEE-I2CT 2021, April 2021.
19. Reviewer for IBSSC-2021, IEEE Bombay section signature conference
20. Reviewer for IEEE and IAS sponsored conference, PESGRE 2022
21. Reviewer for IEEE-APEC 2022, USA
22. Reviewer for IPECS 2022, June 2022, TKMCE
23. Session Chair-IEEE CONIT 2022, Karnataka
24. Reviewer –REEDeV-2022, Nagpur

14. **STTP/FDP/CEP attended/organized**

1. “National Workshop on Electrical Power Quality”, IIT, Kanpur, 9-10 Nov.2004.
2. “Journey of Machines from Materials to Applications” ISTE-STTP, 23-27 June 2009, SPCE, Andheri.
3. “Advanced Microprocessors and Microcontrollers”, AICTE sponsored FDP, 12-17 July 2010, National Institute of Technology, Calicut.
4. **Organized** STTP on “Renewable Energy Technology & its Applications”, at Fr. CRIT, Vashi, 18-22nd April 2011.
5. “Solar Photovoltaics: Fundamentals, Technologies and Applications”, 10 day ISTE workshop conducted by IIT Bombay, Dec-2011.
6. “Real Time implementation of Power Electronic Systems” TEQIP sponsored FDP in Malaviya National Institute of Technology, Jaipur, 24-28, June 2013.
7. “Dynamics and Control in State-space-DCSS\_14”, Continuing Education and Quality Improvement Program at IIT Bombay May 19-23, 2014.
8. **Organized** CEP on “Power Electronics and Application to Renewable Energy”, Continuing Education Program, IIT Bombay, Feb.17-22<sup>nd</sup>, 2017.
9. “A Review of Power Electronics based DERs and Interactions with the Grid”, IEEE continuing education, 22<sup>nd</sup> July 2019.
10. “Design and Simulation of Power conversion using open source tools”, AICTE approved four weeks FDP course in Swayam portal, 27<sup>th</sup> Jan-21<sup>st</sup> Feb 2020 - **Silver medal and elite certificate.**
11. FDP on “How to take teaching online”, North Storm Academy, 30/04/2020 to 02/05/2020.
12. Short Course on “Learn to Design your own home system”, Energy Swaraj Foundation, 08<sup>th</sup> May 2020.
13. Course Era Course on “Introduction to Battery Management Systems”, completed 4 weeks course from 11<sup>th</sup> May to 8<sup>th</sup> June 2020 **with 95.4% grade.**
14. Three-day workshop on “NAAC Assessment and Accreditation: A step by step process”, Gates Institute of Technology, Andhra Pradesh, 28-30<sup>th</sup> May 2020.
15. Webinar on “New age tools for teaching online”, Academisthan, 28<sup>th</sup> -30<sup>th</sup> June 2020.
16. TEQIP III sponsored online short term course and FDP on “Power Electronics and Renewable Energy Integration in Smart Grid, Electric Vehicle”, NIT Rourkela, 23-27<sup>th</sup> Sept.2020.

17. ATAL-AICTE sponsored FDP on “Current Trends of Power Electronics Applications in Electric Vehicles”, GEC, Valsad, Gujarat, 7-11<sup>th</sup> June.
18. **Organized** ATAL-AICTE sponsored FDP on “Power Electronic Systems and its Real Time Control Implementation in DSP”, Fr. CRIT, Vashi, 8-12<sup>th</sup> November 2021.

15.

**Invited Lectures for CEP/ STTP/Seminars**

1. Two days training of “Matlab-Simulink” at Sardar Patel College of Engg., 2003, Mumbai.
2. Training of “Matlab-Simulink” organized by IEEE students chapter, Fr. C.R.I.T., 2003, Navi Mumbai.
3. Training on “Existing Teaching Methods, Effectiveness & Improvisations”, 2011, at Teachers Orientation Program, at Fr.C.R.I.T., Navi Mumbai.
4. Workshop of “Solar Photovoltaics, Fundamentals, Technologies and Applications” at 2013, Fr.C.R.I.T., Navi Mumbai.
5. Seminar on “Transformer-less Grid Inverters” for CEP on “Power Electronics and Applications in Renewable Energy Conversion Workshop”, 17-22, Feb.2017, IIT Bombay, Mumbai.
6. Seminar on “Microgrids & Distributed Generation”, 14<sup>th</sup> March, 2017, IEEE student’s chapter, Atharva College of Engg., Mumbai.
7. Resource person for the orientation program for the subject “Simulation Lab 1” at Vishwaniketan's Institute of Management Entrepreneurship and Engg. Technology., Feb. 2018.
8. Seminar on “Modeling and designing feedback controller for a dc to dc converter” on 6<sup>th</sup> Feb.2018, under IEI students chapter, Fr.C.R.I.T, Vashi.
9. Seminar on “Grid connected Photovoltaic Systems” at Atharva College of Engg., Mumbai on 22<sup>nd</sup> February, 2019.
10. Seminar on “Journey of Power Electronics”, 2019, Agnel Polytechnic, Vashi.
11. Seminar on “Power Electronics & its Applications” at Atharva College of Engg., Malad, Mumbai on 22<sup>nd</sup> Feb., 2019.
12. Seminar & Workshop on “Design and Simulation of DC-DC Converter and its control”, at ACPCOE, Kharghar, 23<sup>rd</sup> Sept.2019.
13. Seminar on “Solar Photo Voltaic Systems - Design and Case studies” at Institution of Engineers India (IEI), Belapur, Navi Mumbai, 17<sup>th</sup> Jan. 2020.
14. Webinar on “Grid connected Photovoltaic Systems: An overview”, IEEE-PELS day celebration, IEEE students chapter, Panimalar Institute of Technology, Chennai, 20<sup>th</sup> June 2020.
15. Webinar on “New Trends and Technologies in Power Electronics”, Rajarshi Shahu College of Engineering, Pune, 02<sup>nd</sup> July 2020.
16. Expert lecture on “Trends in Power Electronic Converters for Photovoltaic-Grid Interface”, AICTE sponsored two week FDP on Trends and Challenges in Power Converters and Control-Slot I, College of Engg, Guindy, 15<sup>th</sup> Feb.2021
17. Expert lecture on “Control of Converters for Photovoltaic-Grid interface-an Overview”, AICTE sponsored two week FDP on Trends and Challenges in Power Converters and Control-Slot I, College of Engg, Guindy, 15<sup>th</sup> Feb.2021.
18. Expert lecture on “Basics of Research, Paper writing and Project Proposal Submission”, organized by IEEE BBDITM student branch, Lucknow, 10<sup>th</sup> April 2021.
19. Expert lecture on “Control Design of DC to DC converter using Small Signal Analysis”, AICTE sponsored two week FDP on Trends and Challenges in Power Converters and Control-Slot II, College of Engg, Guindy, 14<sup>th</sup> May,2021.
20. Webinar on “Control of DC to DC Converters”, IEEE-PELS day celebration, IEEE students chapter, Panimalar Institute of Technology, Chennai, 20<sup>th</sup> June 2021.
21. Webinar on “Power Electronics for Photovoltaic Grid-Interface Applications”, IEEE Virtual Speakers Bureau and PES IEEE students chapter, RV College of Engineering, Bangalore, 30<sup>th</sup> June 2021.



22. Seminar on “How to write a Technical/Research paper”, IEI students chapter, FCRIT, Vashi, 18<sup>th</sup> July 2022.
23. Webinar on “Solar Photovoltaic Systems Design and Case studies”, IEEE students chapter College of Engg. Trivandrum and MEA Engg. college, Kerala, 25<sup>th</sup> July 2022.
24. Expert lecture on “Grid connected Photovoltaic Systems”, FDP on “Recent Trends in Electrical, Extc”, FabTech Technical campus COER and DBATU, 20<sup>th</sup> Aug. 2022.
25. Expert lecture on “Power Electronics for Renewable Energy Systems, Transportation and Industrial Applications: Summary”, ISTE Approved STTP on “Power Electronics and Drives, FCRIT, Vashi, 4<sup>th</sup> Nov 2022.
26. Expert lecture on “Applications of Power Electronic Converters for Solar Photovoltaic Systems”, SFIT, Borivili, 14<sup>th</sup> Dec. 2022.
27. Invited lecture on “Technical Paper writing in IEEE format”, IEEE SB-SIESGST, Navi Mumbai, Feb. 2024.
28. Webinar on “Transformer-less PV-Grid Interface for Distributed Generation” IEEE Prime University SB, Bangladesh, 22<sup>nd</sup> Dec. 2024.

16 **Book Chapter**

Book chapter titled “Power Electronic Converters and its FPGA based control applicable to Electric Vehicles”, published in the edited book “Power Electronics for Electric Vehicles and Energy Storage: Emerging Technologies and Developments”, by CRC press, Taylor & Francis Group, March 2023. <https://doi.org/10.1201/9781003248484>

17. **Brief of Ph.D. thesis**

**Title:** Novel Single-Phase Transformer-less Inverter Topologies and Control Schemes for Grid-PV Interface.

A brief summary of contributions of this thesis work is given below:

- (1) Proposed a novel inverter topology, 5 switch Cuk derived Transformer-less Inverter (5sw-CDTI), suitable for single phase transformer-less GCPVS was proposed and experimentally verified.
- (2) Proposed a second novel inverter topology, 6 switch Cuk derived Transformer-less Inverter (6sw-CDTI), suitable for single phase transformer-less GCPVS and implemented. Ancillary services, including the low voltage ride through capability (LVRT) and harmonic compensation that can be provided by the inverter were demonstrated.
- (3) Suggested a modification in the structure of the conventional single phase Current Source Inverter topology to eliminate the ground leakage current and verified experimentally.
- (4) Proposed a modification in the control of Current Source Inverter to achieve multiple objectives such as (i) Input current ripple reduction; (ii) Reduction in the value of the input inductor (iii) Virtual resistance damping and (iv) Reference current tracking and injection of good quality current into the grid.

18. **Research Interests:** Power converter topologies, Solar Photovoltaic Systems (Standalone & Grid connected), Converter control etc.

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