

BIO-DATA

Name **Dr. Mahendra Rane**
Designation **TPO and Associate Professor**
Official Address Dept. of Electrical Engineering,
Fr. C. Rodrigues Institute of Technology,
Vashi, Navi Mumbai-400703.



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Total Experience 25 years
i) Teaching 21 years
ii) Non-Teaching 3 years

Qualifications:

Exam Passed	Year	Institution / University	Branch / Specialization	Percentage/ CGPI
B.E.	2000	University of Mumbai	Electrical Engineering	62.75%
M.Tech	2009	IIT, Bombay	Energy Science Engineering	8.52 / 10
Ph.D.	Nov.2019	VJTI, Mumbai	Electrical Engineering	----

• Additional Qualification:

Approved PG teacher by University of Mumbai from June 06, 2014

Employment Record (from present to past)

Institution	Year		Designation
	(From)	(To)	
Fr.CRIT, Vashi	January 2022	Till date	Associate Professor
	January 2011	January 2022	Assistant Professor
	January 2010	January 2011	Lecture (Sr. Scale)
	July 2003	January 2010	Lecturer
Transerect	March 2002	July 2003	Maintenance Engineer
Sterling & Wilson	July 2000	February 2002	Junior Engineer

Undergraduate / Postgraduate Teaching Experience and Subjects Taught:

UG Teaching: Since 29th July 2003 till date (21 years)

PG Teaching: Since 6th June 2014 till the date (10 years)

PG Teacher Approval:

Electrical Engineering: PG Teacher Approval since 6th June 2014 (Letter Ref. No PG/I.C.D./2014-15/48703 of 2014 dated 26th June 2014)

PhD Teacher Approval

Electrical Engg PhD Teacher approval: Since 23rd February 2016 (Letter Ref. No Thesis/ICD/2021-22/4180 dated 26th February, 2022)

Subjects Taught at UG level

Sr.No.	Name of Subject	Department and Semester of UG
1)	Basic Electrical and Electronics Engineering	F.E. Sem –I
2)	Electrical Measurements and Measuring Instruments	S.E. (Electrical) Sem-III
3)	Elements of Power System	S.E. (Electrical) Sem-III
4)	Conventional and Non-Conventional Power Generation	S.E. (Electrical) Sem-III
5)	Electrical Power System I	S.E. (Electrical) Sem-III
6)	Electrical Machine-I	S.E. (Electrical) Sem-IV
7)	Power Transmission	T.E. (Electrical) Sem-V
8)	Power System Analysis	T.E. (Electrical) Sem-V
9)	Power System-II	T.E. (Electrical) Sem-V
10)	Energy Audit and Management	B.E. (Institute Elective) Sem VII
11)	Illumination Engineering	B.E. (Electrical) Sem VII
12)	Design Management of Electrical System	B.E. (Electrical) Sem VIII
13)	Design Management and Auditing of Electrical System	B.E. (Electrical) Sem VIII
14)	Electrical System Design, Management and Auditing	B.E. (Electrical) Sem VIII

Subjects Taught at PhD and PG level

Sr.No.	Name of Subject	Department and Semester of UG
1)	Renewable Energy System	M.E. Electrical Engg. (Power Electronics and Drives) Sem. I
2)	Non-Conventional Energy Sources	M.E. Electrical Engg. (Power Electronics and Drives) Sem. I
3)	Renewable Energy Sources and System	M.E. Electrical Engg. (Power Electronics and Drives) Sem. I
4)	Renewable Energy Sources and Energy Storage	M.E. Electrical Engg. (Power Electronics and Drives) Sem. I
5)	Solar Photovoltaic Technology	M.E. Electrical Engg. (Power Electronics and Drives) Sem. II
6)	Energy Management and Auditing	M.E. Electrical Engg. (Power Electronics and Drives) Sem. II

Research Funding / Consultancy Services:

Research Grants

Sr.No.	Name of Funding Organization	Type of Grant	Amount (Rs.)	Year	Name of Research Project
1)	University of Mumbai	Minor Research Grant	40000/-	2013-14	Hardware Implementation of Fractional Frequency Transmission System
2)	University of Mumbai	Minor Research Grant	30000/-	2018-19	Integrated energy storage based quasi Z source inverter for standalone PV system
3)	FCRIT	R&D Activity (Group Members: Dr. Mahendra Rane, Mrs. Rashmi Kale and Abhishek S.)	49100/- (GST- exclusive)	2021-22	To design and develop Solar Water Pumping System

Professional Societies Fellowship/ Membership:

IEEE Member ID: 94176380

Achievements / Awards / Position:

- Award of “Best Student” for the year 1993-94 in V.P.M’s Polytechnic, Thane- 400601
- Award of “Academic Excellence” during year 1998-99 for securing 2nd Prize in A.C. Patil College of Engineering, KoparKhairne, Navi Mumbai-400709
- Received an Electrical Supervisor Licence from Public Welfare Department (PWD), Government of India, on April 1, 2003
- Worked as a Subject Matter Expert on the panel to conduct interviews for Maharashtra State Power Generation Company Ltd. (MAHAGENCO), at Sardar Patel College of Engineering on April 3-4, 2010
- Co-Convener for STTP on ,“Renewable Energy Technology & its Applications”, from 18-22nd April 2011
- Received Minor Research Grant of Rs.40000/- for the year 2013-14 from Mumbai University for the project titled “Hardware Implementation of Fractional Frequency Transmission System”
- Served as the member of Syllabus Committee for Second Year Electrical Engineering for 2016 revision.
- Received scholarship for three years under Quality Improvement Program of MHRD, Department of Education, Govt. of India, for pursuing Ph.D.
- Received Minor Research Grant of Rs.30000/- for the year 2018-19 from Mumbai University for the project titled “ Integrated energy storage based quasi Z source inverter for standalone PV system”

- Training and Placement In-charge of the institute, Fr. CRIT, Vashi from January 01, 2010 to May 31, 2015 and From October 01, 2018 till date.
- Chair, Financial & Technical Sponsorship Committee, ICNTE 2021
- Subject Expert for AICTE-MODROB Project Evaluation Committee (PEC) for the research project titled “Transmission line simulator with protection system interfaced with IOT system” for the year 2019-2021
- Served as Session Chair for the Track: Hardware Technologies in “The Conference on Technologies for Future Cities 2021, CTFC 2021”, organised by Pillai College of Engineering, New Panvel, on Oct 9, 2021.
- Received Best Paper Award for the paper titled, “Hardware Implementation of V/F Control for Solar Water Pumping System”, presented in International Conference on Green Industrial Electronics and Sustainable Technologies (GIEST 2024), organised by the IEEE Kolkata Section-Silchar Subsection IES Chapter in Collaboration with NIT, Manipur, held on 25th and 26th of October 2024.
- Chair, Financial & Technical Sponsorship Committee, ICNTE 2023
- Reviewer for
 - IEEE Open Access Journal of Power and Technology
 - IETE Journal of Research
 - International Journal of Electrical Engineering and Computer Science
 - International Conference PEREA 2020, GCOE, Kannur, Kerala
 - ICNTE-2017, Fr. CRIT, Vashi.
 - ICNTE-2019, Fr. CRIT, Vashi.
 - ICNTE-2021, Fr. CRIT, Vashi.
 - ICNTE-2023, Fr. CRIT, Vashi.

Completed PhD from Dept of Electrical Engineering VJTI, Mumbai.

Title: Impact Analysis and Mitigation of the Characteristic Behaviour of PV on the Integration with AC Microgrid

Projects guided in UG/PG/PHD level:

- **Guided 07 PG projects:**

1. Shubham Devlekar, “Design, Control & Analysis of a Wireless Power Transmission system using dual-side-detuned SS compensation topology”, completed in May 2021.
2. Muazzam Phansopkar, “An integrated energy storage based Quasi Z-source inverter for standalone PV system”, completed in January 2020.
3. Saurabh Patil, “Issues with High Voltage Measurement and its Mitigation”, completed August 2019.
4. Yutika Choudhary, “Compensation of Mismatch in PV Characteristics Using DC-DC Converter” completed November 2017.
5. Vinod Pawar, “Design and Development of Distributed MPPT for Partially Shaded PV Array”, completed in 2016
6. Siddhesh Sawant, “Hardware Implementation of Fractional Frequency Transmission System”, completed in 2015

7. Seema Jadhav, "Stability Analysis of Distributed Generation System", completed in 2013

- Guided more than 24 Projects at the undergraduate level in the field of Electrical Engg,

List of Journal Papers Published:

1. **M. S. Rane**, S.R.Wagh, "Mitigation of Harmonics and Unbalanced Source Voltage Condition in Standalone Microgrid: Positive Sequence Component and Dynamic Phasor based with Real Time Approach", Heliyon, Elsevier. <https://doi.org/10.1016/j.heliyon.2019.e01178>
2. **Mahendra Rane**, Sushama Wagh, "Impact Analysis of PV-Integrated Grid Using Time-Scale Modelling", International Review on Modelling and Simulations (I.RE.MO.S.), Vol. 11, N. 5, October 2018 DOI: <https://doi.org/10.15866/iremos.v11i5.15394>
3. M. Monika, **M. Rane**, S. Wagh, A. M. Stankovic, N. M. Singh, "Development of dynamic phasor based higher index model for performance enhancement of dual active bridge", Electric Power Systems Research 168 (2019): 305-312.DOI: <https://doi.org/10.1016/j.epsr.2018.10.023>
4. Phansopkar Muazzam, **Mahendra Rane** "Analysis and Simulation of Quasi Z-Source Inverter with Energy Storage System", International Journal of Industrial Electronics and Electrical Engineering, ISSN(p): 2347-6982, ISSN(e): 2349-204X Volume-7, Issue-12, Dec.-2019.
5. Seema Jadhav, Sincy George, **Mahendra Rane**, "Active Power Control of Grid-Connected Distributed Generation Unit", International Journal of Advances in Electrical and Electronics Engineering, ISSN: 2319-1112 /V2N1, Volume 2, Number 1, March 13, 2013, pp. 106-112.
6. **Mahendra Rane**, "Analysis of Energy Saving Opportunities in Cement Sector", International conference on Emerging Trends in Engineering ICETE-2013. Paper published in IOSR journal of Electronics & Communication Engineering (ISSN 2278-0661), Volume 3, 2013 pp 07-13

List of Papers Published in National and International Conferences:

1. **Rane Mahendra**, Rashmi Kale, and Abhishek Shiwalkar. "Stability Analysis of Quadratic Boost Converter with Different Controllers." In *2023 5th Biennial International Conference on Nascent Technologies in Engineering (ICNTE)*, pp. 1-6. IEEE, 2023. DOI: <https://doi.org/10.1109/ICNTE56631.2023.10146657>
2. **Rane Mahendra** "Dynamic Phasor Modelling of Quad Boost Converter." In *2023 World Conference on Communication & Computing (WCONF)*, pp. 1-5. IEEE, 2023. DOI: <https://doi.org/10.1109/WCONF58270.2023.10235123>
3. Devlekar Shubham, and **Mahendra Rane**. "Modeling and analysis of dual side detuned series-series compensation network-based Wireless Power Transmission system." In *2020 IEEE India Council International Subsections Conference*

- (*INDISCON*), pp. 102-107. IEEE, 2020. DOI: <https://doi.org/10.1109/INDISCON50162.2020.00032>
4. Phansopkar Muazzam, **Mahendra Rane**, and Sushil Thale. "Analysis and Control of Quasi Z-source Inverter with Digital Current Control for Energy Storage." In *2019 8th International Conference on Power Systems (ICPS)*, pp. 1-6. IEEE, 2019. DOI: <https://doi.org/10.1109/ICPS48983.2019.9067736>
 5. **Rane M.**, and S. Wagh. "Stability enhancement of transformed PV system using inrush mitigation techniques." In *2017 North American Power Symposium (NAPS)*, pp. 1-6. IEEE, 2017. DOI: <https://doi.org/10.1109/NAPS.2017.8107388>
 6. Chaudhari Yutika D., and **Mahendra Rane**. "Compensation of mismatch in PV characteristics using DC-DC converter." In *2017 International Conference on Power and Embedded Drive Control (ICPEDC)*, pp. 511-515. IEEE, 2017. DOI: <https://doi.org/10.1109/ICPEDC.2017.8081142>
 7. **Rane M. S.**, and S. R. Wagh. "Adaptive reference power algorithm for power sharing between inverters under varying source condition." In *2016 IEEE 6th International Conference on Power Systems (ICPS)*, pp. 1-6. IEEE, 2016. DOI: <https://doi.org/10.1109/ICPES.2016.7584187>
 8. Parimi M., M. Monika, **M. Rane**, S. Wagh, and A. Stankovic. "Dynamic phasor-based small-signal stability analysis and control of solid state transformer." In *2016 IEEE 6th International Conference on Power Systems (ICPS)*, pp. 1-6. IEEE, 2016. DOI: <https://doi.org/10.1109/ICPES.2016.7584183>
 9. Vinod Pawar, and **Mahendra Rane**, "Analysis of Distributed Maximum Power Point Tracking of PV System under Partial Shading Condition," International Conference on Recent Trends & Innovations in Engineering & Technology, ICRTIET-2015, Ongole, Andhra Pradesh, May 1-2, 2015.
 10. Siddhesh Sawant, **Mahendra Rane**, and Ramchandra Bhosale, "Performance Analysis of Fractional Frequency Transmission System using Hardware setup," in International Conference on Electrical, Electronics, Signals, Communication and Optimization (EESCO) – 2015, Visakhapatnam, Andhra Pradesh.
 11. **Mahendra Rane**, "Peak Saving Potential of Cement Sector using DSM", International Conference on Renewable Energy Utilisation ICREU-2012, Coimbtore Institute of Technology, Coimbtore, Jan 2012
 12. **Mahendra Rane**, "Analysis of DSM in Cement Sector", International Conference on Energy Optimization And Control ICEOC-2010, Government College of Engineering, Aurangabad, Sep 2010

13. **Mahendra Rane**, Dhruv Chhabra, Rangan Banerjee, “Industrial DSM for Indian Power Sector”, International Conference on Energy and Environment, National Institute of Technology, Kurukshetra, India, March 2009.

Invited Lectures in FDP/ STTP:

- Guest lecture Delivered on” Role of New Transportation in Demand Side Management,” at Fr. CRIT, Vashi, during ISTE approved STTP on “Electric and Hybrid Electric Vehicle Technology” on 21st June, 2018.
- Guest lecture Delivered on” Wind Power and its Applications,” at Fr. Agnel Polytechnic, Vashi, during STTP on “Renewable Energy Sources” on October 10, 2013.
- Webinar delivered on” Role of Electrical Vehicle (EV) in Demand Side Management,” at A. C. Patil College of Engineering, under EESA activity on May 04, 2021

Short Term Training Programmes attended:

- Participated & completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on Sustainable Health with Technological Advancements at B.M.S College of Engineering from 17th-22nd February, 2025.
- Participated and successfully completed the ISTE approved Self-Financing Faculty Development Program on “Research Proposal Writing & AI Tools in Education and Research” organized by P.R. Pote Patil College of Engineering & Management, Amravati from 06th – 11th May, 2024.
- Participated & completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on Institutional Restructuring and Strengthening Autonomy through NEP at Fr. Conceicao Rodrigues College Of Engineering from 20th-25th November, 2023.
- Participated in Hybrid Mode Short Term Course and Faculty Development Programme on “Sustainable Technologies & Energy Management of Hybrid Microgrid (STEMM-2023)” organized by Department of Electrical Engineering from 12th -16th July, 2023.
- Participated in five days online Faculty Development Program on the topic “Research Proposal and Academic Writing” organised by IQAC and Research Cell, Deviprasad Goenka Management College of Media Studies, on 03rd -8th July, 2023.
- Participated in five days online Faculty Development Program on the topic “Futuristic Electrical Power Systems” organised by FCRIT, Navi Mumbai from 10th -16th November, 2022.
- Participated in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on “online Elementary FDP on “Power Electronic Systems and its Real Time Control Implementation in DSP” organised by FCRIT, Navi Mumbai from 08th -12th November, 2021.
- Participated in AICTE sponsored Two Weeks FDP on “Sustainable Technologies for Electric Transportation Systems”, organised by GRIET, Hyderabad from 12th -24th July, 2021.
- Participated in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on “One week online FDP on “Electric Vehicles” organised by VESIT, Mumbai from 05th -09th July, 2021.

- Attended National Level FDP on “Research Initiatives in Advanced Control Systems”, conducted by Department of Electrical and Electronics Engineering, Muthoot Institute of Technology and Finance from 22nd -26th, February 2021.
- Participated in Five Days online FDP on “Inculcating Universal Human Values in Technical Education”, organised by AICTE from 14th -18th, June, 2021.
- Attended Three Days e-Program on “Ensuring Physical and Mental Well-being during COVID”, organised by CNDS, Department of Electrical Engineering under TEQIP-III, VJTI, from 27th February-01st March 2021.
- Participated in AICTE sponsored STTP on “Automotive Technology for a Sustainable Future”, organised by GRIET, Hyderabad from 14th-19th, December 2020.
- Completed 4 weeks online non-credit course on “Cybersecurity and the Internet of Things”, authorized by University System of Georgia and offered through Coursera from 05th – 28th July 2020 with 98.75% grade.
- Attended Five days Online FDP on “Cutting-Edge Technologies for Electrical Engineering”, Organized by Department of Electrical & Electronics Engineering , Andhra Loyola Institute of Engineering and Technology, Andhra Pradesh from 18th – 22nd May 2020.
- Attended Three days Online workshop on “Education 4.0”, Organized by IQAC, Atharva College of Engineering, from 28th – 30th April 2020.
- Attended one week Workshop on “Power Electronics & Application to Renewable Energy Conversion”, Organized by TEQIP-II, VJTI in collaboration with Quality Improvement & Continuing Education Program, IIT Bombay, 17th – 22nd Feb. 2017
- Attended one week Workshop on “Robotics for Human Movement Training”, Under GIAN, VJTI, 8th – 12th August 2016
- Attended one week workshop on "Recent Trends in Power Electronics, Drives and Storage Technologies for Emerging Applications", organised jointly by CoE CNDS, VJTI and L & T (Electrical & Automation) under Industry - Institute -Interaction activity of TEQIP-II. ISGF and IESA, VJTI, Mumbai, 5th-9th October, 2015
- Attended MHRD-AICTE Sponsored, one week FDP on "Research and Technical Challenges of Smart Grid", organized by NIT Calicut, India, 16th-22nd June, 2013.
- Attended AICTE- ISTE approved five days STTP program under TEQIP on “Power Quality “at SSGM College of Engineering, Shegaon in 2006.
- Attended four days training programme on “AC Drive: Micro Master MM4” Technical Skills Development Centre, Kalwa, Siemens on March 6-9, 2006.
- Attended two day training programme on “Reactive Power Management (RPM)” at L & T Switchgear Training Centre, Pune in 2000. Participated in two day’s workshop on “Recent Trends in Electrical Power Systems” held at PVG’s College of Engineering & Technology, Pune on December 5-6, 2003

I hereby declare that all statements in this bio-data are true, complete and correct to the best of my knowledge and belief.

Place: Navi Mumbai

Date: March 03, 2025

Dr. Mahendra Sitaram Rane