Faculty Profile

Dr. Francis M Fernandez

Adjunct Professor

Department of Electrical & Electronics Engineering

Marian Engineering College, Trivandrum - 695582

Email: fmfcet@gmail.com

Date of Joining MEC: 01-07-2025

Professional Experience:

Total experience 31 years

Teaching experience: 26 years

Previous institutions:

College of Engineering Trivandrum

Government Engineering College Barton Hill, Thiruvananthapuram

ANERT, Thiruvananthapuram

Educational Profile

PhD

University of Kerala / College of Engineering, Trivandrum

Specialisation: Power Quality

M.Tech

Electrical & Electronics Engineering Specialisation: Electrical Machines

University of Kerala / College of Engineering, Trivandrum

B.Tech

Electrical & Electronics Engineering

University of Kerala / T. K. M College of Engineering, Kollam

Courses handled recently

DC Machines and Transformers

Synchronous and Induction Machines

Power Quality

Life Skills

Research Methodology (MTech)

Design of Power Electronic Systems (MTech)

Research and guidance

Area of interest:

Harmonics in Power Systems
Motor drives
Instrumentation

Number of PhDs produced: 2

Ongoing PhD guidance: 1

List of Publications

1. Francis M. Fernandez, P. S. Chandramohanan Nair, "Method for separation of customer and utility contributions of harmonics at point of common coupling", IET Transactions on Generation, Transmission and Distribution, vol. 7, no. 4, pp. 374-381, April 2013.
2. Rijo Rajan, Francis M. Fernandez, "Power control strategy of photovoltaic plants for frequency regulation in a hybrid power system", Elsevier International Journal of Electrical Power & Energy Systems, Volume 110, pp 171-183, September 2019
3. Rijo Rajan, Francis M. Fernandez, "Power control strategy of photovoltaic plants for frequency regulation in a hybrid power system", International Journal of Electrical Power & Energy Systems, Volume 110, September 2019, Pages 171-183
4. Rijo Rajan, Francis M. Fernandez, "Power control strategy of photovoltaic plants for frequency regulation in a hybrid power system", International Journal of Electrical Power & Energy Systems, Volume 110, September 2019, Pages 171-183
5. Anu Gopalapillai and Francis M Fernandez, “A review on reactive power measurement in harmonic environment, International Journal of Power and Energy Conversion, Vol. 14, No.4, pp.311-331, https://doi.org/10.1504/IJPEC.2023.135475(SCOPUS)
6. Anu Gopalapillai and Francis M Fernandez, “Quantification of harmonic pollution using non-fundamental apparent power, Electrical Engineering, Springer (2024). https://doi.org/10.1007 /s00202-024-02267-1.(SCIE)
7. Francis M. Fernandez, P. S. Chandramohanan Nair, “A New Expression for Power Factor under Nonsinusoidal Conditions”, 2011 IEEE-PES International Conference on Innovative Smart Grid Technologies (ISGT-2011), Kollam, Kerala.
8. Francis M. Fernandez, P. S. Chandramohanan Nair, “Estimation of Supply Side Harmonics by Using Network Impedance Data”, 2010 Joint International Conference on Power Electronics, Drives and Energy Systems (PEDES), New Delhi.

9. Francis M. Fernandez, P. S. Chandramohanan Nair, “Influence of Power Factor Compensating Capacitors on Estimation of Harmonic Distortion”, 9th International Conference on Power Quality and Utilisation (EPQU-2007), Barcelona, Spain

10. Harikrishnan R., Francis M. Fernandez, "Improved online torque-sharing-function based low ripple torque control of Switched Reluctance Motor Drives", IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Thiruvananthapuram, 2016

11. Rijo Rajan, Francis M Fernandez, "Fuzzy-Based Control of Grid-Connected Photovoltaic System for Enhancing System Inertial Response", 53rd International Universities Power Engineering Conference, IEEE Power and Energy Society (PES), Glasgow, Scotland, 2018

12. Rijo Rajan, Francis M Fernandez, "Grid Inertia Based Frequency Regulation Strategy of Photovoltaic System Without Energy Storage", IEEE International Conference on Control, Communication, and Computing (IC4), Thiruvananthapuram, 2018

13. Rijo Rajan, F. M. Fernandez, “Impact of Increased Penetration of Photovoltaic Sources on Small-Signal Stability of Hybrid and Multi area Power Systems,” IEEE Banglore Section, Innovations in Power and Advanced Computing Technologies (i-PACT), Vellore, India, Mar. 2019, pp. 1-6

14. Rijo Rajan, F. M. Fernandez, “Impact of Distributed Virtual Inertia from Photovoltaic Sources on Frequency Regulation in Hybrid Power System,” IEEE Industry Application Society, 2nd International Conference on Innovative Mechanisms for Industry Applications (ICIMIA), Bangalore, India, Mar. 2020, pp. 13-18

15. Athira Venugopal, Francis M. Fernandez, "Solar Powered Switched Reluctance Motor Drive for Hybrid Electric Boat", International Conference for Convergence of Technology (I2CT), Mangalore, India, Oct 2018

16. M S Sujith, Francis M Fernandez, "Minimisation of Torque Ripple and Power Factor Correction of Low Cost BLDC Motor drive", International Conference for Convergence of Technology (I2CT), Mangalore, India, Oct 2018

17. Anu G. and F. M. Fernandez, “Identification of Harmonic Injection and Distortion Power at Customer Location”, 2020 19th International Conference on Harmonics and Quality of Power (ICHQP), UAE, 2020, pp. 1-5, doi: 10.1109/ICHQP46026.2020.9177869.

18. Anu G. and F. M. Fernandez, “Shunt Active Power Filter for Single Phase Low Voltage Distorted Networks”, 2023 International Conference on Control, Communication and Computing (ICCC), Thiruvananthapuram, India, 2023, pp. 1-6, doi: 10.1109/ICCC57789.2023.10165377.

19. Anu G and F. M. Fernandez, “Reactive Power Measurement in Power Systems with Harmonic Currents”, 2024 Third International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), Trichirappalli, India, 2024, pp. 1-7, doi: 10.1109/ICEEICT61591.2024.10718434.