Name:

Dr. Kalyani Makarand Kurundkar

Designation:

Assistant Professor

Contact Details:

Email id: kmk_elect@pvgcoet.ac.in

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Educational Qualifications:

- Ph.D (Electrical), Savitribai Phule Pune University, Pune, Oct 2024
- M.E. (Electrical Power Systems), Pune University, Pune, May 2006.
- B.E. (Electrical), Amravati University, Pune, August 2002.
- Sustainable Energy Conversion & Storage Conducted by Stanford Center for Professional Development at Stanford University, USA
- The Entrepreneurial Engineer Conducted by College of Engineering, University of Illinois at Urbana-Champaign, USA.
- Have undergone training in PLC Programming of Siemens and Allen Bradley PLCs at the University of Pune, India.
- Received a special Training for 4 weeks on ‘Soft Skills’ at PVG’s COET.
- Professional Certification in ETAP

Experience:

- Industrial: 1.5 Years
- Teaching: 17 Years
- Research: 10 Years

Research Interests:

- Electrical Power systems
- Smart Grid
- Microgrid
- Power system Protection

- **Research Projects:**
- Mircrogrid Installation In Lab 104 of Electrical Engineering Dept.
- **MODROB** prepared and submitted in 2012 for Switchgear and Protection Lab.
- Submitted to UGC as **Minor Research Project**: 'study and analysis of optimal construction and performance enhancement of Microgrid by control and Power management' in 2014 July.

Number of Publications:

International Journal:6

National Journal:7

International Conference:6

National Conference:7

Number of Books / Book chapters Published: 01

Number of PG Students Guided: 03

Recognition/ Awards:

- Awards to guided projects: 2020- First prize at the 'DIPEX 2020'.
  2019- AVISHKAR, 2018-19.
  2018- Appreciation award at MITSUBISHI Electric Cup
  2017- Coordination of 'CEEMATECH E-quiz"

Number of FDPs / STTPs organized: 01

Number of Workshops organized: 05

Number of Conferences / Seminars organized: 06

Number of FDPs / STTPs attended: 08

Number of Workshops attended: 10

Number of Conferences / Seminars attended: 10

Number of Online Certification Courses done: 05

Number of Webinar attended: 08

Number of times served as a Resource Person: 01

Number of times served as a Reviewer / Judge: 06

Details of Research papers published:

- Bulleted list of research papers published Special Invited Speaker at Annual International Congress of Electrical Engineering held at Oxford, UK, on May 8th and 9th 2025, Topic of talk *"Congestion Management by Optimal Placement and Sizing of DGs by IEHO-TOPSIS Approach".*
- Mrs. Kalyani Kurundkar and Dr. Mrs. Geetanjali Vaidya, 'Stochastic Security-Constrained Economic Dispatch of Load-following and Contingency reserves ancillary service under uncertainty', *MDPI 'Energies', Special Issue on 'Optimization and Energy Management in Smart Grids)',* Web of Science Emerging Sources Citation Index (ESCI), SCOPUS indexed, (Q1) 2023, *16*(6), 2607; https://doi.org/10.3390/en16062607,
- Mrs. Kalyani Kurundkar and Dr. Mrs. Geetanjali Vaidya, "Voltage Control Ancillary Service through grid-connected microgrid by optimized active power and reactive power management", *'Iranian Journal of Science and Technology, Transactions of Electrical Engineering'* by *Springer Nature,* 10.1007/s40998-023-00655-0. Indexed in: Web of Science and SCOPUS.
- Mrs. Kalyani Kurundkar and Dr. Mrs. Geetanjali Vaidya, "Congestion Management Ancillary Service at Distribution level through grid-connected microgrid based on DLMP and HFPSO-TOPSIS approach" *Cogent Engineering by Taylor & Francis,* 10:2, 2288411, Indexed in: Web of Science and SCOPUS, https://doi.org/10.1080/23311916.2023.2288411
- Mrs. Kalyani Kurundkar, and Dr. Mrs. G. A. Vaidya, "Application of HFPSO-TOPSIS approach for optimally locating and sizing of reactive power compensating devices for voltage control ancillary service", *International Journal of Electrical and Electronics Research*, Vol 9, pp 16-26, Issue 4.e-ISSN: 2347-470X (SCOPUS). doi: 10.37391/ijeer. 090301.
- Mrs. K. M. Kurundkar, Dr. Mrs. G. A. Vaidya co-authored a research paper titled, 'A Review of Ancillary Services through DER's for Grid Stability: Its Prospects, Benefits, Policies And Regulatory Reforms in Context of Growing Indian Power Sector', was presented and published in *'Proceedings of the National Conference on Energy and Environment for Sustainable Development (NCEESD-2022)',July*

5-6, 2022, Government College of Engineering and Research Avasari Kh), Taluka: Ambegaon, District: Pune, Maharashtra, INDIA.

- Mrs. K. M. Kurundkar and Dr. Mrs. G. A. Vaidya co-authored a research paper titled,"Application of IEHO for optimization of operation cost of grid-connected microgrid with energy storage". This paper was presented by Mrs. Kalyani Kurundkar and received "Best Paper Presentation" award in the *2nd International Conference on Research Trends in Engineering and Management " jointly organized by RR Institute of Technology, ICRTEM Bengaluru, Karnataka,* and IFERP, organised on 25th -26th Aug, 2022. ISBN : 978-93-92105-01-2
- Mrs. Kalyani Kurundkar along with Prof. Mrs.Gauri Karve, Prof. Dr. Mrs.Geetanjali Vaidya co-authored a book chapter titled ' Community Energy Storage- National & International Scenario-A Review' in a book titled 'Research Challenges in Science, Engineering and Technology' *by NOVA Book Publishers, USA,2021(SCOPUS INDEXED)*
- Mrs. Kalyani Kurundkar, G. M. Karve, Dr. Mrs. G. A. Vaidya co-authored a research paper titled,
- ''Multi-objective Multi-Criteria Optimal Placement of Reactive power compensating devices in Distribution Network by IEHO-TOPSIS Approach''. This paper is presented at *International Virtual Conference on Emerging Trends in Engineering and Management Sciences (ICETEMS),*held at MMCOE,Pune, from 23rd July to 24th July, 2021.
- Mrs. Kalyani Kurundkar, G. M. Karve, Dr. Mrs. G. A. Vaidya co-authored a research paper titled, ''Techno-Economic Analysis and Optimal Sizing of Stand-alone Hybrid AC-DC Microgrid by Nature inspired Firefly algorithm and Particle Swarm Optimization''. This paper is presented at 2021 *International Conference on Intelligent Technologies (CONIT) SCOPUS indexed conference,* during 25th to 27th June, 2021.
- Mrs. Kalyani Kurundkar, G. M. Karve, Dr. Mrs. G. A. Vaidya co-authored a research paper titled, 'Comparative performance analysis of Firefly algorithm and Particle swarm Optimization for Profit Maximization of Grid connected Microgrid providing energy and ancillary service', published in SCOPUS indexed Journal till 2021, *'Journal of Solid-State Technology'* Vol.64. No.2 (2021), pp 4607-4626.
- Ms. Ravina R. Kale, co-authored a paper with Prof. Mrs. Gauri Karve (Guide), Prof. Mrs. Kalyani Kurundkar, Prof. Dr. Mrs. Geetanjali Vaidya titled as - 'Implementation Of Fuzzy Logic Controller (FLC) For Energy Management Of HESS (Hybrid Energy Storage System) of Battery and Supercapacitor in PV Based Microgrid' and presented it at - 'All India Seminar on Green Energy Technologies for Sustainable Environment ' on 20th October 2019, at *The Institution of Engineers(India),* Pune Local Centre, Pune. *Annual Technical Journal* Vol.43- ISBN- 978-81-924990-7-9.
- Mrs. Kalyani Kurundkar, Dr. Mrs. G. A. Vaidya, co-authored an article, 'Power Electronics in Smart Grid', in *Electrical India*, National Journal, September 2019, Vol 59. No. 9, Pp 36-40.

- Prof.Gauri M. Karve, Prof.Kalyani M. Kurundkar and Dr. Geetanjali A. Vaidya, 'Implementation of Analytical Method and Improved Particle Swarm Optimization Method for Optimal Sizing of a Standalone PV/Wind and Battery Energy Storage Hybrid System', *IEEE, Bombay section, 5th I2CT ,* 2019 Pune (SCOPUS Indexed Conference).
- Neha Bondarwad and Prof.Mrs.Kalyani Kurundkar and co-authored a paper titled 'Fault ride through capability for grid connected PV system with Supercapacitor energy storage system' presented and published in *3rd National conference on Recent Trends in Mechanical Engineering[NCRTME-2018]*, WCE Sangli held on 21st and 22nd June 2018.
- An Article in *Electrical India* Coauthored by Mrs. Kalyani Kurundkar and Dr. Mrs. G. A. Vaidya on 'Ancillary services through Microgrid for Grid Support and reliability' published in Sept. 2017.
- Mrs. Renu Lohana and Prof. Mrs. Kalyani Kurundkar 'Performance analysis of Hybrid power filter to improve Power Quality' *Presented at National Power Energy and Control Conference(NPSE)-2016,* K. K. Wagh Institute of Engg in Dec 2016.
- Miss. Sonal B. Baravkar, Mrs. K. M. kurundkar, 'Comparison of PI controller And PR controller for Grid connected mode of operation of Micro Grid.', *National Journal at The Institution of Engineers* (India) Pune, Vol 40, pp 266-270, Nov 2016, ISBN No. 978-81-924990-4-8.
- A research Paper titled 'Microgrid Assessment: its Policy Framework, Governance and Experiences in different Countries' was presented by Prof. Mrs. K. M. Kurundkar at *Annual Technical Paper meet, Institution of Engineers, PLC*, held on 11th-12th Nov.2016. This paper was co-authored by Dr.Mrs.G.A.Vaidya.
- Dr. Mrs. G. A. Vaidya, Mrs. Kalyani Kurundkar 'A necessity of Hybrid AC/DC Microgrids in Indian Electricity Sector' in *'Electrical India',* January 2016, Vol 56 No 1. Pp 66-68.
- Miss Renu C. Lohana, Prof. Mrs. Kalyani. M. Kurundkar, 'Study of different Control Strategies of Shunt Active Power Filter and its Implementation to Mitigate harmonics', in *National Journal at The Institution of Engineers (India)* Pune Local Centre, Vol. 39, pp. 246-253, ISBN No. 978-81-924990-3-1.
- 'Cogeneration and Trigeneration' Coauthored by Deepika Raghani and Prof.Mrs.Kalyani Kurundkar Presented at *AISSMS 'Ashwamedh'* paper presentation competition and won 2nd prize.
- 'Use of Power convertors for transformer inrush current mitigation' [Presented & Published on IEEE Explorer] With Manisha Wani and Prof. M.P.Bhawalkar IEEE *Int'l Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012)*, Bengaluru, (SCOPUS Indexed)
- 'Digital harmonic restraint differential relay for power transformer protection' Coauthored by Dr.V.A.Joshi, at the *Institute of Engineers (Pune local chapter)* in Nov 2012 – won "Best paper prize" for this paper.

- ‘Digital Protection: Backbone of smart grid’ coauthored by Prof. Mrs.Laxmi Sovani and presented at *National conference on Innovative Smart Grid Technologies* held at AISSMs College of Engg, Pune in March 2012.
- ‘LASER Application in Medical Field’ presented this paper in the *National Level Competition 'PERSUIT - 2001’* held at S.S.G.M.C.E. Shegaon, India. It highlights the advanced applications of LASER in medical field for the curing diseases and in surgical purposes.

Details of books / book chapters published:

- Mrs. Kalyani Kurundkar along with Prof. Mrs.Gauri Karve, Prof. Dr. Mrs.Geetanjali Vaidya co-authored a book chapter titled ‘ Community Energy Storage- National & International Scenario-A Review’ in a book titled ‘Research Challenges in Science, Engineering and Technology’ by NOVA Book Publishers, USA,2021(SCOPUS INDEXED)

Details of FDPs / STTPs attended in last 5 years:

- Attending Online NPTEL FDP on “ Soft skill and personality Development” Sept Oct 2025.
- Attended one week STTP organized by Electrical Engineering Department of National Institute of Technology, Srinagar on ‘Large scale grid integration of renewable sources: challenges, issues, modelling and solution’ under TEQIP-III, from 23rd Sept. to 27th Sept.2020.
- Attended ATAL AICTE approved FDP at COEP, Pune on ‘Electrical & Computer Engineering’ from 21-9-2020 to 25-9-2020 at College of Engineering Pune.

Major Portfolios Handled: (college level and department level)

- Working as Research and Development Co-cordinator at Departmental level from July 2025.
- Working as IQAC Co-cordinator at Departmental level from July 2025.
- Working as NBA Co-cordinator at Departmental level from July 2025.
- Coordinated Art Exhibition activity Feb, of F.Y in January, 2025.
- Coordinated internships of students in industry, this have drastically increased from 5% to 95% (total 276 students till now) in my department and have been considered as the ‘Best Practices’ for the college NAAC report and NBA, 2019.
- Working as NSS coordinator from Electrical engineering dept.
- Worked as a committee member at annual social gathering held at PVG’s COET.
- Coordinated the e-quiz activity for PVG’s COET at the CEEMATECH exhibition, students have won a rank and a prize in complete Maharashtra consistently for two years.
- Guided more than 9 UG Groups for BE project and 2 PG students.

- Guided successfully, B.E Project,''Performance analysis and Design of E-Bike for rural **consumers'' First prize at DIPEX 2020 State level Project Competition** at Solapur in March, 2020, **2nd runner prize at the state-level E-Project Competition**, This Group won **2nd Prize in renewable, EV and Multidisciplinary domain at the State level**.
- Subjects taught: Industry and technology management, Power Electronics, Electrical and Electronics Engineering, Basic Electrical Engg, Electrical Technology, Electronics and Electrical Engg, Soft skills. Power electronics Drives and Control (Practical).
- Coordinated Industry – Institute Meet, that was organized by the Department.
- Co-ordinated T & P Activities at department level from 2014 to 2019.
- Worked as EESA coordinator.
- Class teacher and Mentor SE to BE and FE.
- Department Coordinator for HOPE from 2014 - 2018.

Role in University Bodies….

- SSPU's examiner at FY Level for the Subject of BEE.
- SPPU's 'Post Graduate Research Guide': Guided successfully 3 Post Graduate students for their Project at the Masters level as a post- graduate research Guide.
- Worked as an external and internal examiner at PG level for the University of Pune.
- External examiner at PG level more than 2 times.
- Worked as a paper setter for 'Industrial and Technology Management' subject for more than 7 years at UG level.
- Worked as an Industrial and technology management expert in Syllabus revision workshops for TE Electrical.

Any other information which is not covered in above points:

- **Bachelor's Degree** in Indian Classical Music **('Sangeet Visharad')**
- Awarded with **'Author of the week', 'Literary Captain' certificates** by "*Story Mirror"* for contribution to Marathi literature