

Faculty Profile



Dr. K R. Devabalaji, M.E., Ph.D, PDF.
Associate Professor – EEE

HIGHLIGHTS:

- Number of Journal Publications: 32
- H-Index:25
- Project Funding Received: 01
- Patents Published: Nil
- Patents Granted: 02 (Design Patent)

PROFESSIONAL LINKS:

- Scopus ID: 56267369700
- Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=56267369700>
- Google Scholar ID: <https://scholar.google.com/citations?user=PgTHnkIAAAAJ&hl=en>
- Anna University Faculty ID:
- AICTE Faculty ID:1-3715153714
- Anna University Supervisor ID:
- LinkedIn: <https://www.linkedin.com/in/devabalaji-k-r-77725166/>

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 13 years
- Industrial Experience: Nil

INTERNATIONAL EXPOSURE:

- Countries Visited: Indonesia, Singapore, Thailand, United Kingdom, South Africa.
- Presented a paper titled “Optimal Placement and Sizing of a Capacitor in a Radial Distribution System using Harmony Search Algorithm” at the International Conference on Electrical Engineering, Computer Science and Informatics (EECSI 2014), Yogyakarta, Indonesia.
- Presented a paper titled “Power Loss Minimization in Radial Distribution System” at the AEDCEE 2015 Conference, held during May 28–29, 2015, Bangkok, Thailand.
- Visited Imperial College London, University of Bradford, and University of Leeds during 29 June 2019 – 5 July 2019 as part of the project review meeting for the Royal Academy of Engineering

(UK) sponsored project titled “*Optimal Dispatch of Virtual Power Plant Using Cyber-Physical Controller for Real-Time Energy Management System (EMS)*”, with a funding value of £50,000 (₹45 Lakhs).

- Visited the University of Cape Town, South Africa, to carry out Post-Doctoral Research on “Power System Resilience and Cyber Security Studies”, funded by the National Research Foundation (NRF), South Africa.

AREA OF SPECIALIZATION:

- Renewable Energy
- Virtual Power Plant
- Electric Vehicle
- Power System Resilience.

Ph.Ds AWARDED WITH DETAILS:

S:No	Name of Scholar	Title of Thesis	Year of Completion	Full Time/Part Time
1	Poushali Pal	Optimal Dispatch Strategy of Distributed Generations in Virtual Power Plant using Cyber Physical Controller for Real Time EMS.	2022	Full Time
2	Sivasankar N	Design of Non-Isolated Bidirectional Multiport DC-DC Converter For Solar and Energy Storage Integration.	2023	Part Time

Ph.Ds GUIDING:

- **Full Time Scholars: Nil**
- **Part Time Scholars : Nil**

SPONSORED RESEARCH / FUNDING APPLIED / CONSULTANCY:

S.No	Title	Funding Agency	Year	Status
1	Optimal Dispatch Of Virtual Power Plant Using Cyber-Physical Controller For Real -Time EMS	Royal Academy of Engineering, United Kingdom. Funding Value £ 50,000 = 45 Lakhs.	April -2018 – Feb 2023	Completed
2	National level Seminar on Digital Twin for Sustainable Energy Management	SERB- Two Lakhs	1st April 2024 to 5th April 2024	Completed
3	Advanced ATAL FDP on Digital Twin for Smart	ATAL FDP – 6 Lakhs	25 th Nov 2024- 05 th Dec 2024.	Completed

PATENTS PUBLISHED/GRANTED:

Granted Indian Design Patent on Solar Electric Bike on 23-04-2024.

COURSES CERTIFIED:

- Completed the AICTE QIP PG Certificate Programme on Artificial Intelligence and Data Science offered by Indian Institute of Information Technology Kottayam, sponsored by All India Council for Technical Education, during July 2024 – December 2024.
- Attended the CEEE Program 2025 (Certificate Program in Engineering Excellence) in the domain of Electrical, Electronics, and Instrumentation Engineering, conducted at Indian Institute of Technology Kanpur from 28 May 2025 to 8 June 2025, organized by the Indian National Academy of Engineering with support from Infosys Foundation.

ACHIEVEMENTS AND AWARDS:

- Received Research Promotion Award from Hindustan Institution of Technology and Science in 2019 and 2022.
- Received a Research Award in the years 2014, 2015, and 2016 for contributions to research through publication in peer-reviewed journals at VIT University.

SPECIAL SESSIONS DELIVERED:

- Delivered Guest Lecture on Innovation and Design Thinking at Adhiparasakthi Dental College and Hospital, Melmaruvathur on 02-09-2023.
- Delivered Guest Lecture on Introduction to MATLAB for Electrical Engineers at Aarupadai Institute of Technology, 14-08- 2024.

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

Sunil, V., Pal, P., Prakash, N., & Devabalaji KR. (2024). Implementation of inductive power transfer method for dynamic wireless charging of electric vehicle. AIP Conference Proceedings, 3044, 030014. https://doi.org/10.1063/5.0208879
R, H., M, T., T, Y., P, B., & Devabalaji KR. (2024). Enhancing resilience of distribution systems through microgrid formation and integration of DERs using group teaching optimization algorithm. 2024 10th International Conference on Electrical Energy Systems (ICEES), 1-4. https://doi.org/10.1109/icees61253.2024.10776918
Chitra, L., Devabalaji, K., Manobala, M., Yogesh, S., & Raj, N. (2024). Design and optimization of light weight materials for E bike chassis. 2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT), 1-8. https://doi.org/10.1109/iccant61001.2024.10724137
Sunil, V., Pal, P., Nava Prakash, N., Devabalaji, K. R., & Saloney, D. K. (2023). Design, analysis and development of cost effective wireless charging for solar powered electric Vehicle-A future perspective. 2022 OPJU International Technology Conference on Emerging Technologies for Sustainable Development (OTCON), 1-6. https://doi.org/10.1109/otcon56053.2023.10113903
Solaiyappan, V. A., Yuvaraj, T., Thirumalai, M., Sivasankar, N., & Devabalaji, K. R. (2022). Optimal sitting and sizing of DSTATCOM using fruit fly algorithm. AIP Conference Proceedings, 2541, 020003. https://doi.org/10.1063/5.0114595
Pal, P., Parvathy, A. K., Devabalaji, K., & Antony, S. J. (2022). Design of IoT based load management for off-grid renewable energy sources. AIP Conference Proceedings, 2541, 060002. https://doi.org/10.1063/5.0116228
Devabalaji KR., & Folly, K. A. (2022). Performance analysis of multiple distributed generation placement in radial distribution system using reptile search algorithm. 2022 Third International Conference on Smart

Technologies in Computing, Electrical and Electronics (ICSTCEE). https://doi.org/10.1109/icstcee56972.2022.10100223
Sivasankar, N., & Devabalaji, K. (2022). Smart Multiport bidirectional non-isolated DC-DC converter for solar PV-battery systems. 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT). https://doi.org/10.1109/iceeict53079.2022.9768656
Sivasankar, N., & Devabalaji, K. R. (2022). Integration of solar power system with existing UPS-battery pair: A case study in an educational institution. 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS). https://doi.org/10.1109/icais53314.2022.9742884
V. Chalapandian, T. Yuvaraj and K. R. Devabalaji, "Optimal Allocation of Capacitor Banks in Distribution Networks using Cuckoo Search Algorithm," 2021 7th International Conference on Electrical Energy Systems (ICEES), 2021, pp. 475-478, doi: 10.1109/ICEES51510.2021.9383764.
R. Reshma, Uppu Ramachandraiah, Devabalaji KR, R. Sitharthan, "Liquid metal level measurement techniques", IOP Conference Series: Materials Science and Engineering, Volume 937, Recent Trends on Renewable Energy Smart Grid and Electric Vehicle Technologies (RESGEVT 2020) 9 July 2020, Vellore, India.
Poushali Pal, A K Parvathy and Devabalaji K R, "A broad review on optimal operation of Virtual power plant", 2 nd International Conference on Power and Embedded Drive Control ICPEDC- 2019, August 21-23, 2019, SSN College of Engineering, Chennai.
Poushali Pal, Parvathy A.K, Devabalaji K.R, Deivasundari P, Joseph S.J, Petros Aristidou and Ocheme S.E, "Analysis of Bidding strategies in virtual power plant", 11th International Exergy, Energy and Environment Symposium (IEEES'11-2019)
Sivasankar, K. R. Devabalaji, "A High Gain Non Isolated DC-DC Boost Converter With Two Level Output voltage for PV Applications", 11th International Exergy, Energy and Environment Symposium (IEEES'11-2019)
Priyadarshini S, Devabalaji K R, Sajnu Alex, Shinu B Shajan," Iot Based Performance Monitoring And Control System For Real-Time Transformer", 11th International Exergy, Energy and Environment Symposium (IEEES'11-2019)
Devabalaji K R, Priyadarshini S, Venkatesh K, Santhosh Reddy Y and Sai Krishna, "Energy Meter With Real Time Electricity Bill Prediction" 11th International Exergy, Energy and Environment Symposium (IEEES'11-2019)
T. Yuvaraj, K. R. Devabalaji and K. Ravi, "Optimal allocation of DG in the radial distribution network using bat optimization algorithm" Proceedings of ETAEERE-2017, Sikkim, India.
K.R.Devabalaji, A.Mohamed Imran,T.Yuvaraj, K.Ravi, "Power loss minimization in radial distribution system", May 28-29, Proceedings of AEDCEE 2015, Bangkok, Thailand,
T. Yuvaraj, K. Ravi, and K. R. Devabalaji, "Optimal Placement and Sizing of DSTATCOM Using Harmony Search Algorithm" May 28-29, Proceedings of AEDCEE 2015, Bangkok, Thailand,
K.R.Devabalaji, K.Ravi, Optimal Placement and sizing of capacitor in Radial Distribution System using Harmony Search Algorithm. EECSE 2014, Yogyakarta. Indonesia.
K.R.Devabalaji (4th author), "Problems in conventional energy sources and subsequent shift to green energy" ICETS 2014. Muthayammal college of engineering, Tamil Nadu, INDIA
K.R.Devabalaji, K.Ravi, Power Quality Improvement in Wind Farm Connected to Grid Using STATCOM. ICAEE 2014, VIT University. (Published in IEEE Xplore)
K.Ravi, K.R.Devabalaji, Solving Optimum Power Flow in Dynamic Environments to minimize tracking errors using Dynamic Bacterial Foraging Algorithm. (ICACCS -19,21-december-2013, Sri Eshwar College of Engineering. (Published in IEEE Xplore).
K.R.Devabalaji, N.Manimaran, Analysis and Design of Speed Control of the BLDC Motor Using Soft Switching, ICCPECI-2013, Adhiparasakthi Engineering College, INDIA.

PROFESSIONAL MEMBERSHIPS:

- IEEE