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Google citation:

https://scholar.google.co.in/citations?hl=en&user=ImaWP3sAAAAJ&view_op=list_works&sortby=pubdate



Academic Profile:

Post- Doctoral Fellow

- Central Power Research Institute, Bengaluru.
- 21st December 2015 to 20th December 2016
- Power Systems Division/R&D Division
- Mentor-Dr.J.Sundara Rajan, Additional Director, R&D Division & Ms Meera, Additional Director, Power Systems Division

Ph.D

- Title: Investigation and solution methodologies for a deregulated electricity market.
- August 2013.
- Under the Guidance of **Prof. D.P.Kothari**, FNAE, FNASc, Fellow IEEE, formerly, Vice Chancellor, VIT University, Tamil Nadu, INDIA. 632014.
- VIT University, Vellore. Tamil Nadu.

M.E

- Electrical Power Engineering.
- First class with 61%-Dec-'99
- The M.S University of Baroda, Gujarat. INDIA

B.E

- Electrical & Electronics Engineering.
- First class with 69%-Apr-'97
- University of Madras. Tamil Nadu. INDIA.

H.S.C

- First class with 81%-Mar-'93
- Board of higher secondary Education, Tamil Nadu

S.S.L.C

- First class with 79%-Apr-'91
- Board of Matriculation, Tamil Nadu

Undergone Summer Internship by Indian National Academy of Engineering (INAE), New Delhi at IIT Delhi under the guidance of Prof. Sukumar Mishra and Prof.A.R.Abhayankar for two months (May-June, 2011).

Teaching Experience:

Presently working as Associate Professor in the School of Electrical Engineering (SELECT), VIT University, Vellore, Tamil Nadu. 632014.

Having 20 years of Experience in Engineering institutions (16+ years in VIT University) as on date

Handled papers like

- Deregulation and restructured Power Systems
- Power System Operation and Control
- Power System Protection
- Power Systems
- Energy Management Systems and SCADA
- Software systems for Energy management
- Network Analysis and Synthesis
- Electrical Circuits
- Electrical Machines
- Basic Electrical and Electronics Engineering

and conducted Machines and Power System Simulation based labs.

Received Seed Money from VIT for Rs. 3, 00, 000/= for the project “Effective IoT based Energy Management with Grid connected modified Solar Inverter at VIT” (2019)

Consultancy work with VOLTECH, Chennai is in progress- Co-Team members: Prof. S.Venkatesh, Prof.R. Mageshwaran, SELECT- For solving Power System Problems, Insulation co-ordination etc.

Book-Chapter Authored:

Book Title: Power Quality

Chapter Name: **Intelligent Techniques and Evolutionary Algorithms for Power Quality Enhancement in Electric Power Distribution Systems.**

Authors: S.Prabhakar karthikeyan, K.Sathish Kumar, I.Jacob Raglend, D.P.Kothari

Publishers: Intechweb, Croatia, 2011

Book Tittle: Research Trends and Challenges in Smart Grids

Academic Co-Editors: S.Prabhakar Karthikeyan, K.Sathish Kumar

Publishers: Intechweb, Croatia, 2019

Book Title: Splines

Chapter Name: **Application of Cubic spline interpolation technique in Power Systems-A Review**

Authors: S.Prabhakar karthikeyan, Atul Manmohan, Akhil Prasad, D.P.Kothari

Publishers: Intechweb, Croatia, 2018

Book Title: Microgrids

Authors: Sanjeevikumar Padmanaban, K.Nithyanandam, S.Prabhakar Karthikeyan, Jens Bo-Holm Nielsen, Frede Blaabjerg CRC press, 2020 (production stage)

Association with IEEE

- **Senior Member-Membership No: 41419647**
- **IEEE chapter coordinator for the School of Electrical Engineering** from 15-09-2011 till 20-12-2015. The nature of job includes
 - Single point communication with IEEE-USA regarding membership process (including IEEE-PES) for the school.
 - To coordinate with VIT branch counselor for school related activities.
 - To create awareness on various programmes/conferences among the faculties of the school.
- **International Travel grants received from IEEE-Madras section**, to present paper at TENCON 2015 at Macau during November 1-4, 2015.
- **Received the appreciation for the Professional achievement during the year 2016 from IEEE-Madras section**
- **Organized/Chaired a special session, “Recent Advancements in Power Systems” in TENCON 2016 to be organized at Singapore during 22-25, November 2016.**
- **Organized a special session, Smart Grids – Smart Cities – Transforming Life – Transforming the World**, in IEEE 17th International Conference on Environment and Electrical Engineering and 1st Industrial and Commercial Power Systems Europe, organized at Milan, Italy, 6-9, June, 2017.
- **Organized a special session on “Smart Grid Technologies-Challenges and Opportunities” in TENCON 2017, a Region 10 International IEEE Conference to be held at Malaysia during 5-8, November 2017.**
- **Organized a special session on Smart Power and Energy Systems in World Summit on Advances in Science, Engineering and Technology (Cambridge Summit 2018), January 4-6, 2018, Cambridge, UK**

Has served as **guest editor for “WSEAS Transactions on systems, special issue on deregulated electricity market: Investigations and solution methodologies”** along with Prof. Filippo Neri, Department of Computer Science, University of Naples, Italy.

Faculty coordinator for India smart grid forum (ISGF), VIT chapter, VIT University, Vellore

List of Articles:

1. ***S.Prabhakar karthikeyan***, K.Sathish Kumar, I.Jacob Raglend, D.P.Kothari, "Deregulation in Electrical Power Systems-A Bird's view", article published in Electrical India, India's oldest magazine on power and electrical products industry, Volume 51, No 12, December 2011.
2. ***S.Prabhakar karthikeyan***, Sarat Kumar Sahoo, I.Jacob Raglend, D.P.Kothari, "Indian Solar Power Sector-Vision 2022", article published in Electrical India, India's oldest magazine on power and electrical products industry, Volume 52, No 12, December 2012.
3. ***S.Prabhakar karthikeyan***, I.Jacob Raglend, D.P.Kothari, “Market power- A threat to Deregulated Power Systems”, article published in Energitica-India, an International power generation magazine, November-December 2012 issue, pp. 68-69.
4. Sarat Kumar Sahoo, ***S.Prabhakar Karthikeyan***, Subhronil Dey, Suba srinivasan, “SCADA and benefits”, article published in Electrical India, India's oldest magazine on power and electrical products industry, Vol 53, No. 9, September 2013.
5. Sarat Kumar Sahoo, ***S.Prabhakar Karthikeyan***, W.Razia Sultana, “Recent advances in Multilevel Converter and its Applications”, article published in Electrical India, India's oldest magazine on power and electrical products industry, Vol 54, No. 12, December 2014.

6. Krishna Prabhakar Lall, Sarat Kumar Sahoo, **S.Prabhakar Karthikeyan**, “Grid connected Solar PV Systems”, article published in Electrical India, India's oldest magazine on power and electrical products industry, Vol. 55, No. 8, August 2015, pp. 40- 42.
7. **S.Prabhakar Karthikeyan**, D.P.Kothari, “Negative Pricing”, article published in Electrical India, India's oldest magazine on power and electrical products industry, February 2016.
8. **S.Prabhakar Karthikeyan**, Kshitij Sharma, IoT: Empowering Energy management, article published in Electrical India, India's oldest magazine on power and electrical products industry, January 2019.
9. **S.Prabhakar Karthikeyan**, Sarvesh rathi, Narala Anudeep reddy, “Transformer oil and its evolution”, article published in Electrical India, India's oldest magazine on power and electrical products industry, July 2019.

Recent Industry Projects with Students:

Sl. No	Title of the Project	Company Name	Status	Period
1	An Optimization of Electrical Unit Sub-station (USS) for Wind Plants on Techno-commercial frame-work.	Vestas India Limited, Chennai	Completed	1 ½ months Nov-Dec 2013
2	A holistic comparison between Overhead Line System & Under-ground Cabling system for wind power evacuation & optimized solution finding on case-to-case basis	Vestas India Limited, Chennai	Completed	1 ½ months Nov-Dec 2013
3	System Integration Protection Scheme for Southern region with N-E-W Grid	SRLDC, Southern Regional Load Despatch Centre, Bangalore	Completed	6 months Dec-2013 to May-2014
4	Harmonic Analysis and filter design for power quality studies	Power Research & Development Consultants, Bangalore	Completed	6 months Dec-2013 to May-2014
5	EH Vehicle impact on pricing mechanism	IIT Indore	Completed	May-June 2017
6	IoT based Home Energy Management systems	VIT, Vellore	Completed	Jan-Feb 2019

List of Inter- National Journals

2020

1. Rangarajan Varadan Ramesh Ananthavijayan, Prabhakar Karthikeyan Shanmugam, “Software System Architecture of Power Grid with IPMI Approach – A Demand Aware Smart Grid, published in International Journal of Emerging Trends in Engineering Research, vol. 8, Issue 9, pp.5367-5375.
2. Jishu Mary Thomas, Prabhakar Karthikeyan Shanmugam, “Frequency and inertia response- effects, capabilities, and possibilities in renewable energy sources” paper communicated to Bentham sciences. Under review
3. Senthil Prabu Ramalingam, **S.Prabhakar Karthikeyan**, “A Comprehensive review on wired and wireless communication for Home Energy Management Systems, communicated to Bentham Sciences, under review

4. Srihari Mandava, Prabhakar Karthikeyan Shanmugam, Abhishek Gudipalli, Anthriksh Gupta , C.Christober Asir Rajan, "Design and development of Epoxy Polyester Mix Insulation Dry Type Current Transformer" paper communicated to Bentham sciences. Under review

2019

5. Madhuresh Gupta, Soumyakanti Giri, **S.Prabhakar Karthikeyan**, Sanjeevikumar Padmanaban, Jens Bo-Holm Nielsen "Adoption of Block chain Platform for Security Enhancement in Energy transaction", paper communicated to Engineering reports, Wiley publishers, under review.
6. A.Ramesh, **S.Prabhakar Karthikeyan**, Sanjeevikumar Padmanaban, Jens Bo-Holm-Nielson, Frede Blaabjerg "Software Architectures for Smart Grid System- A Bibliographical survey, Energies, MDPI-open access journal, <https://doi.org/10.3390/en12061183>

2018

7. Shafeeque Ahmed, **S.Prabhakar Karthikeyan**, "An Investigation on Apportion of Mathematical loss in Transmission Loss/Cost Allocation Approach", paper published in Indonesian Journal of Electrical Engineering and Computer science, vol.15, issue 1, ISSN: 2502-4752, DOI: 10.11591/ijeecs.v15.i1.pp1-8
8. Shafeeque Ahmed, **S.Prabhakar Karthikeyan**, "Modified Penalized Quoted Cost based Transmission Loss Allocation Approach including Reactive Power Demand in Deregulated Electricity Market, paper published in Sustainable Energy, Grids And Networks, Elsevier, Vol. 16, Dec. 2018. pp. 370-379.
9. Ravi Dharvath, I.Jacob Raglend, **S.Prabhakar Karthikeyan**, "A Bibliographical Survey on Integration of Hybrid Renewable Energy Sources with Diesel Generator and Storage System", paper published in Journal of Engineering science and technology review.

2017

10. N.Vinoth kumar, V.Kumar Chinnaiyan, , Pradish M , **S.Prabhakar Karthikeyan**, "A Recommended Cascaded Structure for Multilevel Inverter with Minimum Power Electronic Components", paper published in Electrical Power components and Systems, Taylor and Francis, <https://doi.org/10.1080/15325008.2018.1496370>

2016

11. N.Vinoth kumar, V.Kumar Chinnaiyan, **S.Prabhakar Karthikeyan**, Pradish M, "A Multilevel Inverter topology using Single Source and Double Source Module with reduced Power Electronic Components", IET-Journal of Engg. pp. DOI: [10.1049/joe.2017.0068](https://doi.org/10.1049/joe.2017.0068) , Online ISSN 2051-3305, 2017.
12. Shafeeque Ahmed, **S.Prabhakar Karthikeyan**, "penalized quoted cost based approach on transmission loss allocation for a bilateral contract in deregulated Electricity market, paper published in IET-Generation, Transmission and Distribution. Vol. 10, Issue 16, December 2016, pp. 4078-4084.

2015

13. Anusha Pillay, **S.Prabhakar Karthikeyan**, D.P.Kothari, "Congestion management in power systems-A review, paper published in International Journal of Electrical Power and Energy Systems, volume 70, Feb, 2015, pp. 83-90.
14. Fini Fathima, **S.Prabhakar Karthikeyan**, Harmonic analysis on various traction transformers in co-phase traction systems (2015), paper published in paper published in Ain shams Engineering Journal, Elsevier publications, volume 7, Issue 2, June 2016, Pages 627-638.

List of Papers in Inter-National Conferences

2020

1. Polly Thomas. Prabhakar Karthikeyan Shanmugam, "ACO Based Optimal Route Scheduling for EV Fleet Operation" paper accepted in SocPros 2020, organized by IIT Indore during December 2020
2. Puja Chaudhury, Abhishek Tyagi, and Prabhakar Karthikeyan Shanmugam, "Comparison of Various Machine Learning Algorithms for Predicting Energy Price in Open Electricity market", paper presented in ICUE 2020, an International IEEE conference organized by Asian Institute of Technology, Thailand

2019

3. Jahanvi Jahanvi Singh, Sneha Poddar, Senthil Prabu Ramalingam, Prabhakar Karthikeyan Shanmugam, Akhtar Kalam "Investigation on Dynamic Dispatch Problem of Micro Grid using Cuckoo search Algorithm-Grid connected and Islanded mode", paper presented in TENCON 2019, Kerala Section.
4. Anish Kumar Saha, Tuneer Tuneer Bhattacharjee, Senthil Prabu Ramalingam, Prabhakar Karthikeyan Shanmugam, Sanjeevikumar Padmanaban, "Server Monitoring and Priority based Automatic load shedding Algorithm (SEMPALS)", paper presented in TENCON 2019, Kerala Section.
5. Ankit, S.Prabhakar Karthikeyan, "A Modified PV Fed Single-Phase Single-Stage Switched-Capacitor Inverter for a Stand-alone Load Using Lower Number of Controlled-Switches", paper presented in ICPEs 2019, 9th International Conference on Power and Energy Systems, Perth, Australia.
6. Ankit, S.Prabhakar Karthikeyan, Ramchandra Bhosale, Farhad Shahnia, An Interleaved Switched Capacitor Based PV-fed Standalone Single-Stage Single-phase Inverter Using Minimum Number of Controlled Switches, paper presented in ICPEs 2019, 9th International Conference on Power and Energy Systems, Perth, Australia.
7. Sarat Kumar Sahoo, Kshitij Sharma, Samiksha Nayak, S Prabhakar Karthikeyan, Ann Jerin Amalorpavaraj, "Indian Power Sector-Need of Privatization and Current Status", paper presented in International Conference on Computer Communication and Informatics (ICCCI), 2019.

2018

8. Shekhar Nair, R.Senthil Prabu, *S.Prabhakar Karthikeyan*, C.Rani, "Techno-Economic Aspects on Renewable Energy Management by Indian Engineering Institutions-A Case Study", paper presented in SocPros 2018, 8th International Springer conference organized by Vellore Institute of Technology, Vellore, Tamil Nadu, India during 17-19, December 2018.
9. R.Senthil Prabu, *S.Prabhakar Karthikeyan*, "Scheduling and Energy Management of Smart Homes using Customer Choice Based Algorithm", paper presented in ICUE 2018, an IEEE International Conference on Green Energy and Sustainable development, organized by Asian Institute of Technology, Pathumthani, Thailand and IEEE-PES, Thailand Section during 24-26, October 2018.
10. D Ritwik, *S.Prabhakar Karthikeyan*, An Efficient EV Fleet Management for Charging at Workplace Using Solar Energy, IEEE National Power Engineering Conference (NPEC), TCE, during 9-10, March, 2018, Madurai
11. Impact of Vehicle-to-Grid on Voltage Stability - Indian Scenario, G Madhuresh, G Soumyakanti, *S. Prabhakar Karthikeyan*, IEEE National Power Engineering Conference (NPEC), TCE, during 9-10, March, Madurai
12. Impact of Generator/Demand Constraints on Market Clearing Price under Pool Market with Elastic Demand, *S.Prabhakar Karthikeyan*, S. Madhankumar, Atul Manmohan, Akhil Prasad, National Power Engineering Conference (NPEC), TCE, during 9-10, March 2018, Madurai.
13. Poly Thomas, *S.Prabhakar Karthikeyan*, "Assessment on Impact of Aggregated EVs on Peak Demand Profile in a Grid Integrated System, paper presented in VIT-Cambridge Summit during 4-6, January 2018

2017

14. K.Shafeeqe Ahmed, *S.Prabhakar Karthikeyan*, Mannam Venugopala Rao, "Proportional generation and proportional load based transmission loss allocation considering reactive power demand in restructured environment", poster presentation during TENCON 2017, an IEEE International conference at Penang Malaysia
6. *Veena Manikuttan; Poly Thomas; Emil Ninan Skariah; S. Prabhakar Karthikeyan*, "Optimization of market clearing price using firefly and PSO algorithm in bilateral electricity market", paper presented in an IEEE International conference, TENCON 2017, at Penang, Malaysia
7. Satyanarayana Vanapalli; M. Venu Gopala Rao; S. Prabhakar Karthikeyan "Performance analysis of unified power quality conditioner controlled with ANN and fuzzy logic based control approaches", paper presented in an IEEE International conference, TENCON 2017, at Penang, Malaysia
8. Ramesh Ananthavijayan; S. Prabhakar Karthikeyan; I. Jacob Raglend; J. Belwin Edward; K. Sathish Kumar, "Requirement framework of smart grid software architecture, paper presented in ICHVEPS 2017, an International IEEE Conference at Indonesia.
9. K.Shafeeqe Ahmed, S.Prabhakar Karthikeyan, " Impact of Transmission Line Mutual Inductance on Transmission Loss/Cost Allocation in Deregulated Electricity Market, paper presented in IEEE 17th

- International Conference on Environment and Electrical Engineering and 1st Industrial and Commercial Power Systems Europe, organized at Milan, Italy, 6-9, June, 2017.
10. K.Shafeeque Ahmed, S.Prabhakar Karthikeyan, "Comparison of various Transmission Loss/Cost Allocation Methods-A Review" paper presented in iPact 2017, an IEEE international conference on "Innovations in Power and Advanced Computing Technologies, i-PACT-2017" organized by VIT University during 21-22, April 2017.
 11. Atul Manmohan, Akhil Prasad, Prabhakar Karthikeyan and Jacob Raglend, "An Efficient DC Grid Based PV – Wind Power Generation Using Modified P&O Tracking Technique", paper presented in iPact 2017, an IEEE international conference on "Innovations in Power and Advanced Computing Technologies, i-PACT-2017" organized by VIT University during 21-22, April 2017.
 12. Atul Manmohan, Akhil Prasad, S. Prabhakar Karthikeyan, I.Jacob Raglend, "Up and Down Conversion of Photons with modified Perturb and Observe MPPT technique for Efficient Solar Energy Generation", 1st International Conference on Power Engineering, Computing and CONTROL, PECCON-2017, 2-4 March 2017, VIT University, Chennai Campus, Tamil Nadu

2016

13. Jyothi B, M.Venugopala Rao, **S.Prabhakar Karthikeyan**, "Experimental Investigation of Peculiar Transformer fed Multi Phase Induction motor", paper accepted in TENCON 2016. An International IEEE Region 10 conference to be held at Singapore during 22-25, November 2016.
14. **S.Prabhakar Karthikeyan**, Ashok Lal, Tulika Bhattacharya, "Sensitivity Assessment on Locational Marginal Price under Deregulated Electricity Market", paper presented in TENCON 2016. An International IEEE Region 10 conference to be held at Singapore during 22-25, November 2016.
15. **S.Prabhakar Karthikeyan**, Syed Yusuf Ahmed, "Realization of effect of relative humidity on Domestic tariff for low tension customers in India", paper presented in TENCON 2016. An International IEEE Region 10 conference to be held at Singapore during 22-25, November 2016.
16. Somlal Jarupula, M.Venugopala Rao, **S.Prabhakar Karthikeyan**, "Experimental Investigation of an Indirect Current Controlled Fuzzy-SVPWM based hybrid Active power filter", paper presented in TENCON 2016. An International IEEE Region 10 conference to be held at Singapore during 22-25, November 2016.
17. Shafeeque Ahmed, **S.Prabhakar Karthikeyan**, "Proportional Generation and Proportional load based Approach for transmission loss/cost allocation in Deregulated Electricity market", paper presented in TENCON 2016. An International IEEE Region 10 conference to be held at Singapore during 22-25, November 2016.
18. Baishalli Mullick, Debraj Das and **S.Prabhakar Karthikeyan**, "A Heuristic Approach on Economic Dispatch Problem considering Generation Efficiency and Emission constraints with load curtailment", paper presented in ICUE 2016 on Cogeneration, small power plants and District Energy, organized by Asian Institute of Technology, Pathumthani, Thailand and IEEE-PES, Thailand Section during 14-16, September 2016.
19. Akhil Prasad, Aman Kumar, Atul Manmohan, **S.Prabhakar Karthikeyan**, "Determination of TTC and Application of SVM for Demarcation of Stability limits", paper presented in ICUE 2016 on Cogeneration, small power plants and District Energy, organized by Asian Institute of Technology, Pathumthani, Thailand and IEEE-PES, Thailand Section during 14-16, September 2016.
20. Anusha Pillay, Aniketh Roshan, **S.Prabhakar Karthikeyan**, D.P.Kothari, "Impact of Market power on static ATC determination using Honey Bee Foraging Algorithm under deregulated electricity market, paper presented at International conference on Energy systems 2016, organized by Elsevier, UK and Energy institute, UK at Westminster, London, UK on 14-15 June 2016.
21. Debraj Das, Bhaishalli Mullick, **S.Prabhakar Karthikeyan**, "A solution to Economic Dispatch problem using Heuristic based optimization under pool market with Elastic Demand and Efficient Generation, paper presented at International conference on Environmental and Electrical Engineering (IEEE-EEEIC) 2016 at Florence, Italy on 7-10, June 2016.

Abroad visit

Sl. No	Country	Details
1	Thailand	ICUE-2011, An IEEE International Conference organized by AIT, Bangkok
2	Macau, SAR China	TENCON 2015, An IEEE Region 10 conference
3	Florence, Italy	EEEIC 2016, an IEEE Conference
4	Singapore	TENCON 2016, An IEEE Region 10 conference
5	Malaysia	TENCON 2017, An IEEE Region 10 conference
6	Cambridge, UK	VIT-Cambridge Summit 2018
7	Indianapolis, USA	Indiana summit-2019 at IUPUI, Indianapolis

Membership Details:

1. Life Membership No: LM 29159 -System Society of India.
2. Life Membership No: LM 33536 -Indian Society for Technical Education.
3. **Senior Membership** No: 41419647, Institute of Electrical & Electronics Engineers, (IEEE) since 2003.
4. Life Membership No: L20556, The Indian Science Congress Association, Kolkata.
5. Life Membership No: 7000096, The Association of Computer, Electronics & Electrical Engineers (ACEEE), (Reg. No. T1846/08) <http://www.theaceee.org>
6. Membership No: 80334024, International Association of Computer Science and Information Technology (IACSIT) www.iacsit.org
7. Membership No: 105304, International Association of Engineers (IAENG) www.iaeng.org and the IAENG society of Electrical Engineering.