## Faculty Profile

### Basic Information:



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| NAME | : | **Dr. P. Balachennaiah** |
| DESIGNATION | : | **Associate Professor & Associate Dean-Academics** |
| DEPARTMENT | : | **EEE** |
| DATE OF BIRTH | : | **02-06-1976** |
| DATE OF JOINING | : | **01-09-2008** |
| EMAIL ID | : | **Pbc.prudhvi@gmail.com** |
| EMPLOYEE ID | : | **08** |

### Academic Profile:

| Qualification | Name of the Board/University | YEAR |
|---|---|---|
| Ph. D | JNTUA, Ananthapuramu | 2017 |
| M. Tech | JNTUH, Kukatpalli | 2007 |
| B. Tech | JNTUA, Ananthapuramu | 1998 |

### Research Details:

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|---|---|---|
| 1. Areas of Specialization : | | Electrical Power Systems |
| 2. No. of Publications : | | 42 |
| 3. Awards Received : | | Nil |
| 4. Research Guidance | | |
| | No. of Ph. D Guided: | Nil |
| | No. of M. Tech. Guided: | 18 |
| | No. of B.Tech. Guided: | 20 |
| 5. Details of Professional Membership: | | MISTE, MIE, IAENG |
| 6. Subjects Taught : | | Basic Electrical Engineering, Electrical Circuits-I & II, Electrical Machines-I, II & II, Transmission of Electrical power, Power System Analysis, Power system operation and control, Optimization techniques, Soft computing techniques, Renewable Energy sources, System Modeling &simulation, Power System Control & Stability |

## Publication Details:

| Title | Publisher | Published Year |
|---|---|---|
| Application of multi agent systems for advanced energy management in cyber physical hybrid microgrid systems | Ain Shams Engineering journal (ASEJ) Elsevier Science | 2024 |
| Inner Resonance and Outer Current Based Control Strategy for Inductive Power Transfer System Used in Wireless Charging for Electric Vehicle | IET Electrical Systems in Transportation | 2024 |
| AC-DC-AC 3-level PWM Converter | International Journal of Mechanical Engineering | 2022 |
| Optimal setting of OUPFC Device for real power loss minimization using symbiotic organisms search algorithm | International Journal of Advanced Science and Technology | 2020 |
| Symbiotic Organisms search algorithms-based solution for real power loss minimization using OUPFC device | International Journal of Recent Technology and Engineering (IJRTE) | 2020 |
| A Superior Control Technique in Wind Generation System under grid faults | International Journal of Innovative Technology and Exploring Engineering (IJITEE) | 2019 |
| Firefly Algorithm based solution to minimize the real power loss in a power system | Ain Shams Engineering journal (ASEJ), Elsevier Science, | 2018 |
| Modified HCS MPPT Control Algorithm for Wind Energy Conversion Systems | International Journal of Scientific engineering and Technology research | 2017 |
| Symbiotic Organisms search algorithm-based solution to optimize both real power loss and voltage stability limit of an electrical energy system | Advances in Energy research an international journal | 2016 |
| Nature inspired Meta-heuristic Algorithm for reduction in real Power loss and improvement in voltage stability limit of an interconnected power system network | i-managers journal on power system engineering | 2016 |
| Optimization of real power loss and voltage stability limit of a large transmission system | Engineering Science and Technology an International journal (JESTCH), Elsevier Science. | 2016 |
| Deployment Of Distributed Energy Resources In Distribution Systems Using Fuzzified Improved Particle Swarm Optimization | International Journal of applied engineering research (IJERD) | 2015 |
| Optimal Placement of SVC Using Fuzzy and Firefly Algorithm | IAES International Journal of Artificial Intelligence (IJ-AI) | 2015 |
| Optimal placement and sizing of SVC in a power system for voltage stability improvement using Harmony search algorithm | International Journal of engineering research and development | 2014 |

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| AC Transmission with Low Frequency for Renewable Energy Sources in Offshore location" | Science and International Journal of Computer Information Security (IJCSIS), | 2014 |
| Optimization of Real Power Losses and Voltage Stability Limit Enhancement by using Bacteria Foraging Algorithm | International Journal of Engineering Research and Development (IJERD) | 2014 |
| Real Power Losses minimization and Voltage Stability Limit Enhancement by using shuffled frog leap Algorithm | IOSR journal of Electrical and Electronics Engineering (IOSR-JEEE) | 2014 |
| Optimal Location of SVC for real power loss minimization and voltage stability enhancement using harmony search algorithm. | International Journal of Electrical Engineering & Technology (IJEET). | 2014 |
| ABC Algorithm for voltage stability enhancement in power system | International journal of applied engineering research | 2014 |
| Design of Electronically coupled distributed resource unit under islanding condition with voltage/frequency control strategy | International journal of Electrical Engineering | 2014 |
| Economic Generation of Electrical Power by using SFL Algorithm | International Journal of Innovative Technology and Exploring Engineering (IJITEE) | 2012 |

## Conference Details:

| Title | Name of the Conference | Date |
|---|---|---|
| Distributed control based multi agent system for energy management of hybrid microgrids system | International Conference on Emerging Trends in Engineering and Medical Sciences (ICETEMS) | 18th-19th November, 2022 |
| Energy management of Hybrid microgrid system using Multi agent system: A distributed control Approach | Interdisciplinary Conference on Mechanics, Computers and Electrics | 6th October, 2022 |
| Modelling of Symmetrical 13 level and Asymmetrical 31 level generalized cascaded multi-level Inverters | International Conference on Cognitive & Intelligent Computing (ICCIC-21) | 22nd November, 2021 |
| SOS Based Solution for Optimization of Indian Power System | Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET) | 10-11 July 2020 |
| Optimal setting of OUPFC device for real power loss minimization using Symbiotic organisms search algorithm | International Conference on Cognitive Informatics & Soft Computing (ICCISC –2019) | 09th – 10th April 2019 |
| Firefly algorithm based multi-objective optimization using OUPFC in a power system | IEEE-TENCON | 8-November, 2017 |
| 'A Fast Assessment Method for Voltage Stability in Multi-Bus Power System | IEEE-TENCON | 8-November, 2017 |

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|---|---|---|
| Hybrid MPPT Control Algorithm for Wind Energy Conversion Systems | International conference on internet of things for future smart cities | 21st – 22nd June 2017 |
| Real Power Loss Minimization using Symbiotic Organisms Search Algorithm | IEEE -INDICON.2015 | 17-20 December, 2015 |
| Firefly Algorithm for optimization of real power loss and voltage stability limit | IEEE international conference on Electrical, Electronics, Signals, communication and optimization (EESCO) | 24-25, January, 2015 |
| Multi-variable optimization for transmission loss minimization by UPFC and firefly algorithm | IEEE international conference on Electrical, Electronics, Signals, communication and optimization (EESCO) | 24-25, January, 2015 |
| A novel algorithm for voltage stability augmentation through optimal placement and sizing of SVC | IEEE conference on Signal processing, Informatics, Communication and Energy Systems (SPICES) | 19-21, February,2015 |
| Control Scheme for Stand-Alone Wind Energy Conversion Systems (WECS) Using Hybrid Wind Battery for DC Base Telecom Loads | International Conference on Emerging Trends in Science and Technology Engineering and Management of Power Electronic Applications (ICETSTEM) | October 2015. |
| Control Design and Mathematical Modelling of Voltage/Frequency Regulation strategy for an Islanded Electronically-Coupled Distributed Resource Unit | International Conference on Emerging Trends in Sciences Technology Engineering and Management of Power Electronic Applications (ICETSTEM) | October 2015. |
| Deployment of Distributed Energy Resources in Distributed Systems Using Particle Swarm Optimization | All India conference on Energy Security through new & Renewable Energy Resources | July 2015 |
| , Optimal Location of SVC in Transmission system for real power loss minimization and voltage stability enhancement using PSO Algorithm | International Conference on Energy efficient Technologies for sustainability | April,7-9,2014 |
| Application of harmony search algorithm for optimal placement and sizing of SVC in power systems, | Emerging trends in science, Technology and management (NCETSTM-2K14), | 8th and 9th august 2014. |
| Application of Shuffled Frog Leap Algorithm to Minimize Real Power Loss and Enhance Voltage Stability Limit | AICTE sponsored 2nd Conference on High-Performance Computing and Networking | 2014 |
| Continuation power flow method for static voltage stability analysis using PSAT | National conference on Electrical power engineering and Industrial drives (NCEPEID) | July 12-13, 2013 |

## Patent Details:

| Title of Patent | Submitted/Published/Awarded |
|---|---|
| Real time implementation of distributed control for advanced energy management of cyber physical micro-grid using multi agent system | Published |
| System and a method for an intelligent/automatic tuning of power converter of electric vehicle for charging the battery thereof | Published |
| IEMG- Power bank: Intelligent Electronics modern Gaugeate Power bank | Published |

## Sponsored Projects

| Year of Sanction | Title of the Sponsored Project | Duration of Project | Name of the Funding Agency | Grant Amount in Rupees | Status |
|---|---|---|---|---|---|
| 20/12/2018 | Modelling Analysis and Real time implementation of distributed control for Advanced Energy management of cyber physical Microgrids using Multi Agent system | 3 years | DST<br><br>File No: DST/ICPS/ CPS-Individual/ 2018/607(G) | 14.51 Lakhs | Completed |

## Seminars/Workshops/Conferences Organized

1. Organizing Secretary for two days DST-ICPS sponsored national level workshop on Multi Agent system and it application in cyber physical microgrid, held during 3rd-4th August, 2019, conducted by the department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

2. Coordinator for National level workshop on Electrical power systems, held during July-3-8, 2017 conducted by department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet and NMEICT-IIT Kharagpur.

3. Organizing secretary for national level seminar on "Nanogrids for future power systems", held during 27-28, February 2017 conducted by department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet and Institution of engineers (India) Kadapa local centre.

4. Organizing convener for national conference on recent advances in power and energy systems (NCRAIPES-16), held during 25th-26th April, 2016, conducted by the department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

5. Convener for national conference on Electrical Sciences (NCES-14), held during 26th July, 2014, conducted by the department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

6. Co-coordinator for national conference on Electrical Sciences (NCES-12), held during 7th-8th September, 2012, conducted by the department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

7. Co-coordinator for AICTE Sponsored Staff Development Program on "Artificial Intelligence in Power Systems", held during 3rd-8th march, 2010, conducted by the Department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

## List of workshops attended:

1. AICTE sponsored Two-week faculty development programme on Big Data Analytics and Machine learning from 18th -30th November, 2019, organized by department of computer science, Annamacharya institute of technology and sciences, Rajampet.

2. MHRD sponsored NPTEL-AICTE sponsored National level workshop on "DC microgrid" with consolidated score of 61% from July-sep, 2019.

3. AICTE sponsored short term course on "Artificial Intelligence & Optimization through ICT" conducted by National Institute of Technical Teachers training and Research, Chandigarh, MHRD from 21/1/2019 to 25/1/2019 at AITS, Rajampet.

4. Workshop on IUCEE International Engineering Educator held during 12th July to 14th July, 2018, VIT-AP University, Amravati.

5. MHRD sponsored NPTEL-AICTE sponsored National level workshop on "Introduction to smart grid" with consolidated score of 70% from Aug-Sep, 2018.

6. AICTE sponsored short term course on "MATLAB & LABVIEW with its Hardware Interface through ICT" conducted by National Institute of Technical Teachers training and Research, Chandigarh, MHRD from 29/1/2018 to 2/2/2018 at AITS, Rajampet.

7. AICTE sponsored short term course on "hardware in loop for smart grid applications through ICT" conducted by National Institute of Technical Teachers training and Research, Chandigarh, MHRD from 9/10/2017 to 13/10/2017 at AITS, Rajampet.

8. NMEICT (MHRD) sponsored Short term training program on Electrical power systems, held during 1st may to 5th may, 2017, organized by IIT Kharagpur.

9. NMEICT (MHRD) sponsored Short term training program on "Control systems", held during 2nd to 12th December, 2014, organized by IIT Kharagpur

10. National level workshop on "MATLAB, simulink& Related Tool Boxes for Engineering Education on 11th and 12th sep 2014, conducted by department of Electrical & Electronics Engineering, AITS, Rajampet in association with Capricot Technologies Pvt.Ltd.

11. A National Level Workshop on "Research Methodology in Engineering, held on 10th&11th December2011, conducted by the Department of Electrical and Electronics Engineering, Annamacharya Institute of Technology &Sciences, Rajampet, Kadapa (dt).

12. A National Level Workshop on "Thrust Areas in Power system held on 18th&19th November, 2011, conducted by the Department of Electrical and Electronics Engineering, JNTU College of Engineering, Pulivendula.

13. UGC sponsored short term course on High Voltage Testing and Measurement Techniques, held During Oct 31st –Nov5th2011, conducted by JNTUH, Kukatpally, Hyderabad.

14. National Level Workshop on "Smart Grid Technologies-Issues And Challenges, held on 20th August, 2011, conducted by the Department of Electrical and Electronics Engineering, S.V. U. college of Engineering, Tirupathi.

15. AICTE Sponsored Staff Development Program on "Artificial Intelligence in Power Systems", held During March3-8, 2010, conducted by the Department of Electrical and Electronics Engineering, Annamacharya Institute of Technology & Science, Rajampet.

16. National Level Workshop on "Simulation of Electrical Systems using MATLAB", held During December1-3, 2010, conducted by the Department of Electrical and Electronics Engineering, G. Pulla Reddy Engineering College, Kurnool.

17. A National Level Workshop on "Soft computing Techniques in Power Systems", held on December16th, 2010, conducted by the Department of Electrical and Electronics Engineering, Vagdevi Institute of Technology & Sciences, Proddatur.

18. A National Level Workshop on "Recent Trends in Electrical Power Systems& Control Systems Using MATLAMB", held on January3rd, 2009, conducted by the Department of Electrical and Electronics Engineering, Gokula Krishna College of Engineering, Sullurpet.

19. National Level Seminar on "Power Distribution Automation", held During February14- 15, 2009, conducted by the Department of Electrical and Electronics Engineering, Sree Vidyanikethan Engineering College, Chittoor.

20. AICTE Sponsored Quality Improvement Program on "Analysis of Modern Power System", held during 16th-20th March2009, conducted by the Department of Electrical and Electronics Engineering, Centre for Continuing Education, Indian Institute of Science, Bangalore.

21. A National Level Workshop on "Power System Operation, Dynamics & Control", held on 4Th July, 2009, conducted by the Department of Electrical and Electronics Engineering, K. S. R. M. College of Engineering, Kadapa.

22. National Level Seminar on "Computer Applications to Power Systems", held during 24th-26th July, 2009, conducted by the Department of Electrical and Electronics Engineering, Narayana Engineering College, Nellore in Association with Power Research& Development Consultants Private Limited, Bangalore.

23. MHRD Sponsored Short Term Course on "Soft Computing Techniques in Electrical Engineering", held during 7th-19th December2009, conducted by the Department of Electrical and Electronics Engineering, National Institute of Technology (NIT), Warangal.

24. A National Level Workshop on "Advances in Power electronics & Drives", held during 27th-28thDecember, 2008, conducted by the Department of Electrical and Electronics Engineering, G.Pulla Reddy Engineering College, Kurnool.

25. A National Level Workshop on "Recent Trends in Power Electronics & Drives", held during 22nd-24thmarch,2007, conducted by the Department of Electrical and Electronics Engineering, G. Pulla Reddy Engineering College, Kurnool.

## Guest Lectures/ Invited Lectures Delivered

1. Delivered Lecture on Voltage stability Enhancement Using FACTS controllers held on 26th February 2012 in Institution of Engineers (IE) India, Kadapa Local Center.

2. Delivered Lecture on Analysis of short circuit faults in a power system using advanced simulation tools held on 9th February 2019 in Institution of Engineers (IE) India, Kadapa Local Center.

## Certifications

1. NPTEL online certification, funded by the Ministry of HRD, Govt. of India on "DC microgrid" with Elite Certification.
2. NPTEL online certification, funded by the Ministry of HRD, Govt. of India on "Introduction to smart gird" with Elite Certification.

## Achievements

1. UGC recommended Travel grant (TG) for presenting the paper entitled "Firefly Algorithm based multi objective optimization using OUPFC in a power system network" in the conference IEEE TENCON-2017held in Malaysia from 5th to 8th, 2017(File No: 6-274/2018(TG)
2. Received a grant of 14.51 Lakhs from DST for research proposal in the year 2018. Chaired a session in the 10th national level students technical, managerial, cultural and sports fest "SIGMA 2K17" held at SREC, Nandyal on 7th &8th October, 2017
3. Received grant of Rs 30,000 from Institution of Engineers (India) for national level Seminar on "Nanogrids for future power systems" during 24 to 25, February 2017 Review Member for International Journal of Electric Power and Energy systems (ELSEIVER Journal)
4. Review Member for IEEE conference organized by NIT Calicut.
5. Elected as committee member in Electrical Engineering Division in Institute of Engineers (IE) India Kadapa Local centre for the year 2013-2014
6. Ratified as Assistant professor from JNTUA, Ananthapuramu, on 4/9/2010.

## Academic Responsibilities

1. Member, Academic council in Department of EEE, AITS, Rajampet
2. Member, Board of Studies in Dept of EEE, AITS, Rajampet.
3. In-Charge of Enterprenurership Development Cell in Dept of EEE, A. I. T. S. 2009 till date.

4. In charge of Machines & Power System Lab in dept of EEE, A.I.T.S. 2010 to till date.

5. Dept. Coordinator for Mini-Project Works in Dept of EEE, A.I.T.S., 2009 till date.

6. Dept. Coordinator for IV B. Tech academic seminars in Dept of EEE, A.I.T.S., 2009 to till date.

**7.** Dept. Coordinator for M. Tech academic seminars in Dept of EEE, A.I.T.S.2009 to till date.