

## DR. MANOJ KUMAR MERUGUMALLA

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### PROFESSIONAL SUMMARY:

An astute professional with thirteen years of experience in teaching and industry, dedicated to provide an informative learning environment for students.

### ACADEMIC EXPERIENCE:

June, 2019 – Till date	<b>Associate Professor &amp; Head</b> , Department of Electrical & Electronics Engineering, Tirumala Engineering college, Guntur, A.P.
July, 2014 – April, 2019	<b>Assistant professor (Adhoc)</b> , Department of Electrical Engineering, Andhra University, Visakhapatnam, A.P.
June, 2012 - April, 2014	<b>Assistant professor</b> , Department of Electrical & Electronics Engineering, Andhra Loyola institute of Engineering & Technology, Vijayawada, A.P.
June, 2011 - June, 2012	<b>Assistant professor</b> , Department of Electrical & Electronics Engineering, Universal college of Engineering & Technology, Guntur, A.P.
June, 2009 - June, 2011	<b>Assistant professor</b> , Department of Electrical & Electronics Engineering, PNC & VIJAI institute of Engineering & Technology, Guntur, A.P.

### INDUSTRIAL EXPERIENCE:

August, 2006 - July, 2007	<b>Trainee Engineer-Electrical</b> , IJM Infrastructure Limited, Bengaluru, Karnataka.
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### EDUCATION:

April, 2019	<b>Doctor of Philosophy (Ph. D)</b> , Department of Electrical Engineering, Andhra University Visakhapatnam, A.P.
Title of Thesis	<i>Implementation of nature inspired optimization algorithms to photovoltaic powered BLDC motor drive control.</i>

2007-2009	<b>Master of Technology (M. Tech)</b> in Power Electronics and Electric Drives, passed in first class with distinction, JNTUK, Kakinada.
Title of the Project	<i>One cycle control of shunt active power filter.</i>
2002-2006	<b>Bachelor of Technology (B. Tech)</b> in Electrical and Electronics Engineering, passed in first class, JNTUH, Hyderabad.
Title of the project	<i>Power transfer capability computation of interconnected power systems.</i>
2000-2002	<b>Intermediate, MPC</b> , passed in first class, Bhanu Jr. College, Guntur, A.P.
1999-2000	<b>10<sup>th</sup> class</b> , passed in first class, G.K.R Public school, Guntur, A.P.

#### **ACHIEVEMENTS:**

- Awarded **UGC National Fellowship** by University Grants Commission, New Delhi, for the year 2016 – 17.
- Awarded **TEQIP Fellowship** Funded by World Bank, for the year 2014– 15.

#### **REVIEWER:**

- IEEE Access Journal.
- The open cybernetics and systems journal
- Engineering Optimization, Taylor & Francis

#### **ADMINISTRATIVE RESPONSIBILITIES:**

- Head, Department of Electrical & Electronics Engineering.
- SPOC, NPTEL Local chapter
- Co-Convenor, Research & Development
- Co-Convener, Department Academic Committee.

#### **ADDITIONAL RESPONSIBILITIES:**

- Incharge, Electrical simulation Laboratory
- Member, Academic planning
- Member, Discipline & Anti ragging

#### **PROFESSIONAL BODY MEMBERSHIP:**

- Life Member, Indian Society for Technical Education (ISTE)

#### **BOOK/ MONOGRAPH Published:**

1. “Nature Inspired optimization algorithms to BLDC motor drive”. Lambert Academic Publishers, By: **M.K Merugumalla**, International book market service Ltd, Mauritius, ISBN: 978-620-0-47313-4.

### **BOOK CHAPTER published:**

**2. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Inertia weight strategies in PSO for BLDC motor drive control* ” Lecture Notes in Electrical Engineering, Springer book series, chapter no.49, chapter DOI: 10.1007/978-981-13-1906-8\_49.

### **JOURNAL/CONFERENCE Publications:**

**3. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*FFA Based speed control of BLDC motor drive*”, International journal of Intelligent Engineering Informatics (ESCI Indexed), Inderscience publishers. Vol.6, Nos. 3/4, 2018, pp. 325-342.

**4. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Chaotic inertia weight and Constriction factor based PSO algorithm for BLDC Motor Drive control*”, International Journal of Process Systems Engineering, Inderscience publishers Vol.5, No.1, 2019, pp.30-52.

**5. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Optimized PID controller for BLDC motor using Nature-inspired Algorithms*” International journal of Applied Engineering Research, Vol.12, No.1, 2017, pp.415-422.

**6. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Impact of Constriction factor on PSO algorithm for BLDC Motor Drive control*”, International journal of Computational intelligent studies, Inderscience publishers Vol.8, Nos. 1/2, 2019, pp. 27-58.

**7. Manoj Kumar Merugumalla** “*Implementation of nature inspired algorithms for BLDC motor drive control*”, Journal on Instrumentation and Control Engineering, I-manager publishers Vol.7.No.2, 2019, pp.32-41.

**8. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Population Algorithms for optimal control of BLDC motor drive*”, Helix International Journal (ESCI Indexed) Vol. 3,No.8, pp. 3350-3355.

**9. Manoj Kumar Merugumalla**, Prema Kumar Navuri “*Sensorless control of BLDC motor using bio-inspired optimization algorithm and classical methods of tuning PID controller*”, Journal on Instrumentation and Control Engineering, I-manager publishers Vol.5.No.1, 2017, pp.16-23.

**10. Prema Kumar Navuri, Manoj Kumar Merugumalla** “*Cascade control of BLDC motor drive using MOMI tuning method*”, Helix International Journal ( ESCI Indexed) Vol. 3,No.8, pp. 3343-3349.

**11. Manoj Kumar Merugumalla**, P. Vishnu Vardhan and P. I. Sireesha, “*Robotic Cable Inspection System using Micro Controller and GPS Tracker*”, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 3, No. 3, 2014.

- 12. Manoj Kumar Merugumalla, Prema Kumar Navuri** “*Implementation of GBMO algorithm to photovoltaic powered BLDC Motor Drive control*”, International journal of Electric power components and systems, Taylor& Francis publishers. (Under review)
- 13. Manoj Kumar Merugumalla, Prema Kumar Navuri** “*Implementation of WDO algorithm to photovoltaic powered BLDC Motor Drive control*”, Journal of Electrical Systems and Information Technology, Elsevier. (Under review)
- 14. Manoj Kumar Merugumalla, Prema Kumar Navuri** “*PSO and Firefly Algorithms based control of BLDC motor drive*” IEEE Conference on Inventive systems and control, Coimbatore on 19 - 20, January 2018.
- 15. Manoj Kumar Merugumalla, Prema Kumar Navuri** “*BLDC Motor Drive Control using MOMI Tuning Method*” IEEE Conference on Electrical, Electronics, Computers, Communication, Mechanical and Computing, Vaniyambadi on 28 - 29, January 2018.
- 16. Manoj Kumar Merugumalla, Prema Kumar Navuri, Sri Latha Eti,** “*Closed Loop Speed Control of a BLDC Motor Drive using Adaptive Fuzzy Tuned PI Controller*” International Conference on High Voltage Engineering & Technology, ICHVET-2015, organized by CPRI Hyderabad on 29<sup>th</sup> - 30<sup>th</sup> January 2015.
- 17. Manoj Kumar Merugumalla, Anil Kumar Yaramala and Prema Kumar Navuri,** “*Comparison of Speed control methods of PMSM Drives*” International Conference on Green Power Technologies in Power grid: Issues, Challenges & Control (GPTPG-2016) at SV University, Tirupathi on 27<sup>th</sup> – 29<sup>th</sup>, October 2016.
- 18. Manoj Kumar Merugumalla, Prema Kumar Navuri,** “*Evaluation of Performance of BLDC Motor with Conventional PI and Fuzzy Speed Controller*” National Conference on Smart Grids for Smart Cities (SGSC-2014), TEQIP- II at Andhra University College of Engineering (A), Andhra University, Visakhapatnam 7<sup>th</sup> - 8<sup>th</sup> November 2014.
- 19. G. Kusuma, Manoj Kumar Merugumalla, T. Lova Lakshmi,** “*Performance of Load Frequency Control using Internal Model Control Scheme*”, IEEE Technically Co-Sponsored Conference on Emerging trends in signal processing and Communication engineering (SPACE-2015) at Aditya institute of Technology (A), Tekkali.
- 20. Manoj Kumar Merugumalla** “*Comparison of Single loop and Cascade loop Control BLDC motor drive*”, Journal of Electrical Engineering, I-manager publishers. I-manager publishers Vol.13.No.3, 2020, pp.38-44.
- 21. Manoj Kumar Merugumalla** “*Stability region computation of BLDC motor drive using boundary locus method*”, Journal of Information and computational science, Vol.13.No.9, 2020, pp.95-100.
- 22. Manoj Kumar Merugumalla** “*Kronecker summation method for Stability region computation of BLDC motor drive*”, Journal of Information and computational science, Vol.13.No.9, 2020, pp.101-106.

## **WORKSHOPS/FDPs/ STCs ORGANIZED:**

Convener, A five days FDP on “RESEARCH TRENDS IN ELECTRICAL ENGINEERING ” during 25<sup>th</sup>–29<sup>th</sup> june, 2021, at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.

Convener, A five days FDP on “RESEARCH OPPORTUNITIES IN ELECTRICAL ENGINEERING ” during 01<sup>st</sup>–5<sup>th</sup> june, 2020, 2020 at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.

Convener, A five days short term course on “RESEARCH OPPORTUNITIES IN POWER ELECTRONICS ” during 26<sup>th</sup> – 30<sup>th</sup>, june, 2020 at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.

Co-ordinator, A three day work shop on “PLC BASICS” during 30<sup>th</sup> January,2020 –Ist February, 2020 at Tirumala engineering College,Jonnalagadda, Guntur.

Convener, A ten days short term course on “PROGRAMMING LANGUAGES ” during 22<sup>nd</sup>–31<sup>st</sup> july, at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.

## **WORKSHOPS ATTENDED:**

1. One week faculty development programme on “*PLC AUTOMATION*” at Tirumala College of Engineering, Jonnalagadda, Guntur, 27<sup>th</sup> November - 1<sup>st</sup> December, 2018, organized by: Department of EEE, ECE & APSSDC.

2. One week continuing Education Programme on “*Contemporary Applications of Control Engineering*” (APPCON-2015) at College of Engineering, Andhra University, 25-29<sup>th</sup> April, 2015, sponsored by TEQIP-II.

3. One week faculty development programme on “*Hands on Training in Power Electronics and Power Systems using Advanced Analytical Tools (PEPS-AAT-2018)*” at College of Engineering, Andhra University, 5<sup>th</sup> -9<sup>th</sup> February, 2018, sponsored by TEQIP-III.

4. One week workshop on “*Power Electronic Technologies and Opportunities (PETO-2017)*” at College of Engineering, Andhra University, 18<sup>th</sup> -22<sup>nd</sup> December, 2017, sponsored by TEQIP-III.

5. One week faculty development programme on “*Process Automation and Research Opportunities (PARO-2016)*” at College of Engineering, Andhra University, 13<sup>th</sup>-17<sup>th</sup> September, 2016, sponsored by TEQIP-II.


6. One week foundation course on “*Matlab and Latex (MAL-2016)*” at College of Engineering, Andhra University, 5<sup>th</sup> - 9<sup>th</sup> December, 2016, sponsored by TEQIP-II.

7. An IEEE Three day National Workshop on “*Approach for Research in Power Electronics, Power and Control Systems Engineering*” at College of Engineering, Andhra University, 28<sup>th</sup> -30<sup>th</sup> June, 2016.

8. A Two Day Short Term Course on “*Fuzzy Systems and Neural Networks in Power System Optimization*” under TEQIP-II at College of Engineering, Andhra University, on 4<sup>th</sup> - 5<sup>th</sup> April, 2014.

- 9.** A Two day National Workshop on “*Synchrophasor Application to Power Systems (SAPS-2014)*” at College of Engineering, Andhra University, 29-30<sup>th</sup> June, 2014, sponsored by TEQIP-II.
- 10.** A Two day National Workshop on “*Green Power Technologies for Healthy Environment-Issues and Opportunities (GPTHEIO-2017)*” at College of Engineering, Andhra University, 25<sup>th</sup> -26<sup>th</sup> March, 2017, sponsored by TEQIP-II.
- 11.** A Two day National Workshop on “*Low Voltage Hybrid AC- DC Micro Grid*”, at College of Engineering, Andhra University, Feb 21-22, 2015, sponsored by TEQIP-II.
- 12.** One-day National Workshop on “*Collaborative Research and Funding Opportunities in Power Engineering*” at College of Engineering, Andhra University, 26<sup>th</sup> -27<sup>th</sup> November, 2015, sponsored by TEQIP-II.
- 13.** One week workshop on “*Automation Tools for Engineering Applications (ATEA-2018)*” at Department of Electrical engineering, College of Engineering, Andhra University, 9<sup>th</sup> -13 November, 2018, sponsored by TEQIP-III.
- 14.** A five days FDP on “Research Opportunities In Electrical Engineering ” during 01<sup>st</sup>-5<sup>th</sup> June, 2020, 2020 at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.
- 15.** A five days short term course on “Research Opportunities In Power Electronics ” during 26<sup>th</sup> – 30<sup>th</sup>, June, 2020 at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.
- 16.** A three days FDP on “Driving technologies for smart grids ” during 25<sup>th</sup>-27<sup>th</sup> August, 2020, at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.
- 17.** A five days workshop on “Applications of Matlab In Electrical Engineering ” during 3<sup>rd</sup> – 7<sup>th</sup>, July, 2020 at Department of EEE, Tirumala engineering College, Jonnalagadda, Guntur.
- 18.** A Webinar on “FUTURE TECH-2020 ” during 18<sup>th</sup> May, 2020 at skycampus, ICT Academy.
- 19.** A Webinar on “The future of skills- Education, Employment & Enterpreneuership” during 15<sup>th</sup> May, 2020 at skycampus, ICT Academy.

Station: Guntur  
Date: 26.02.2021

  
(Dr.M.Manoj Kumar)