

CURRICULUM VITAE

Individual data:



Dr. Chitra A.

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Brief BIO:

Dr. Chitra A. received Bachelor of Engineering in Electrical and Electronics from Government College of Engineering, Tirunelveli, in the year 2001. She received the national merit scholarship from Govt. of India based on her 10th std performance. She is a UG level University Rank Holder (7th rank) in Manonmanium Sundaranar University, Tirunelveli. She completed her Master of Technology (Electric Drives and Control) in Pondicherry Engineering College, Puducherry, India. She received the Gold Medal from Pondicherry University for University First Rank in M.Tech (PED). One of the project under her guidance has won the Danfoss Innovator Award, from Danfoss India and the students' team won a cash award of 2 lakhs. She received her Ph. D from Pondicherry University. She is currently working as an Associate Professor in the School of Electrical Engineering, at Vellore Institute of Technology, Vellore, India. She has published many papers in reputed journals like IET power Electronics, Springer, Elsevier, etc. and in conferences. She is one of the Board of Studies member in Pondicherry Engineering College. She has been engaged in teaching and research work for the past 17 years in the area of Power Electronics, Renewable Energy Systems and Intelligent Drives. Her research areas include PV based systems, Neural Networks, Induction motor drives, Reliability analysis of multilevel inverters, and Electrical Vehicles. Recently her book is published and details are given below., "Artificial Intelligent Techniques for Electric and Hybrid Electric Vehicles", (Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1. She has also successfully conducted many workshops and conferences. Also few workshops conducted by her have been funded by CSIR, India.

Specialization

- BE (Electrical and Electronics Engineering)
- M. Tech (Electric Drives and Control)
- PhD (Green Energy Drive with intelligent Estimator)

Experience

Professional Experience

- Associate Professor, School of Electrical Engineering, Vellore Institute of Technology, Vellore (2009 till date)
- Assistant Professor, Department of Electrical and Electronics Engineering, I.F.E.T. College of Engineering, Villupuram (2001-2009)

Education

B.E.

<i>Specialization</i>	Electrical and Electronics Engineering.
<i>Year</i>	2001
<i>Percentage/Class</i>	81.6 / First Class
<i>Institution</i>	Government College of Engineering, Tirunelveli.

M.Tech

<i>Specialization</i>	Electric Drives and Control.
<i>Year</i>	2008
<i>CGPA</i>	9.34, First Class with Gold Medal
<i>Institution</i>	Pondicherry Engineering College, Puducherry

Ph.D

<i>Specialization</i>	Green Energy Drive with intelligent Estimator
<i>Year</i>	2016
<i>Class</i>	Highly Commended
<i>Institution</i>	Pondicherry Engineering College, Puducherry

Membership in Professional Bodies

- ISTE Life Member
- National Science Congress Life Member
- IEEE member
- Soft Computing Research Society Life Member

Professional Activities

Reviewer of the following

- Solar Energy Journal-Elsevier publishers
- Applied Soft Computing Journal- Elsevier publishers
- International conference on IPACT-2017
- Reviewer for International Conference IPACT-2019.

Research Guidance (Areas)

1. Reliability of Multilevel Inverters.
2. Motor Control Schemes for Hybrid Electric Vehicles
3. Wind Energy Conversion Systems
4. DC to DC converters for datacenter and telecom applications

Achievements

1. Received Research award for journal publications during last 7 years from VIT
2. National Merit Scholarship recipient from 10th standard onwards

3. Received the Gold Medal from Pondicherry University for the M. Tech course
4. Project Mentor for which Danfoss Innovator award was received

Events organized

1. One of the Teaching Assistant in the Two week ISTE workshop titled, "Solar photovoltaics: Fundamentals, Technologies and Applications" Conducted by IIT Bombay at VIT University from 12th to 22nd December 2011
2. Organized a 2 day workshop on "CSIR sponsored National workshop on Micro grid control and power Management" during May 9-10, 2013. Received a workshop grant of Rs. 30,000 from CSIR.
3. Organized a 2 day workshop on "Applications of Power Electronic Converters in Solar Photo Voltaic Systems –MATLAB Hands-on" on 28th & 29th September, 2018.
4. Organized a 1 day workshop on "CSIR Sponsored one day National Workshop on "Recent Trends and Challenges in Hybrid Electric Vehicles" on 8th December, 2018. Received a workshop grant of Rs. 15,000 from CSIR.
5. Organized a 1 day workshop on "One day National Workshop on "Trends in Hybrid Electric Vehicles – An Electrical Perspective" on 16th March, 2019. Received a workshop grant of Rs. 15,000 from CSIR.
6. Faculty Coordinator for the workshop "BIPED (ROBOTICS) in international knowledge carnival graVITas'11, on 16-18th September 2011.
7. One of the organizing committee member in the International conference on "Science, Engineering and Technology", SET during May 6-7, 2013.
8. One of the organizing committee member in the International conference on "17th INTERNATIONAL CONFERENCE ON SCIENCE, ENGINEERING AND TECHNOLOGY", VIT, Vellore. During 12th and 13th November, 2018.
9. One of the organizing committee member in the International conference on "18th INTERNATIONAL CONFERENCE ON SCIENCE, ENGINEERING AND TECHNOLOGY", VIT, Vellore. During 1st and 2nd April, 2019.

Publications

Books Edited:

1. Chitra A. (Editor), S. Padmanaban (Editor), Jens Bo Holm-Nielsen (Editor), S. Himavathi (Editor), Book titled "Artificial Intelligent Techniques for Electric and Hybrid Electric Vehicles", (Accepted and Under Process in press). Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1

Books Chapters published:

1. Daki krishnachaitanya, Chitra A, S.S. Biswas, "Reliability approach for the power semiconductor devices in EV Applications" chapter titled "Reliability approach for the power semiconductor devices in EV Applications", (Accepted and Under Process in press). Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1
2. Chitra A, Shivam Srivastava, Anish Gupta, Rishu Sinha, S. S. Biswas, J. Vanishree, chapter titled "Modelling, Simulation and Analysis of Drive Cycles for

- PMSM based HEV with Optimal Battery Type”,(Accepted and Under Process in press),Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1
3. Yogitha G, Chitra A, Karthik Sivaramakrishnan, Razia Sultana W, P. SANJEEVIKUMAR, chapter titled “Modified Firefly Based Maximum Power Point Tracking Algorithm for PV Systems Under Partial Shading Condition”, (Accepted and Under Process in press),Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1
 4. M. V. Sarin, Chitra A, P. SANJEEVIKUMAR, Venkadesan A., chapter titled “Induction Motor Control Schemes for Hybrid Electric Vehicles/Electric Vehicles”, (Accepted and Under Process in press) Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1
 5. A.Venkadesan, K.Sedhuraman, S.Himavathi, Chitra A., chapter titled “A New Approach for Flux Computation Using Intelligent Technique for Direct Flux Oriented Control of Asynchronous Motor”, (Accepted and Under Process in press), Wiley Publisher, July, 2020. ISBN: 978-1-119-68201-1

Journals

1. Indragandhi V, Chitra A, Singh RR, Bajiya A, Tilak Y, Subramaniaswamy V. Optimal design, control and implementation of multi-drones for commercial utility. International Journal of Intelligent Unmanned Systems. 2020 Dec 1.
2. S.Himavathi , A.Chitra, (2017) “Rotor resistance estimation methods for high Performance drives- A Review” Electrical India Magazine,Vol. 57 No. 3,March 2017.
3. Chitra A, Razia Sultana.W, J.Vanishree, Sreejith.S, Sherin Jose, Alphons J Pulickan, “Performance Comparison of Multilevel Inverter Topologies for Closed Loop v/f Controlled Induction Motor Drive”, Energy Procedia, Elsevier (2017). (Accepted)
4. Jose Jacob, Chitra A, “Field Oriented Control of Space Vector Modulated Multilevel Inverter fed PMSM Drive”, Energy Procedia, Elsevier (2017). (Accepted)
5. **Chitra, A., Himavathi S., “Investigation and analysis of high performance green energy induction motor drive with intelligent estimator”, Renewable Energy-Elsevier, vol. 87, pp. 965-976, Jan. 2017.(IF=5.439)**
6. **Chitra A., Himavathi. S, “Reduced Switch multilevel inverter for performance enhancement of IM drive with intelligent rotor resistance estimator”, IET Power Electronics, vol. 8, no. 12, pp. 2444-2453, Dec. 2016. (IF=2.839)**
7. **Chitra A., Himavathi. S, “A Modified Neural Learning Algorithm for On-Line Rotor Resistance Estimation in Vector Controlled Induction Motor Drives”, Frontiers in energy, Springer publishing Ltd, vol. 9, no. 1, , pp. 22-30, Mar. 2015. (IF=1.7)**
8. **Chitra A., Himavathi. S, “Investigations on the dynamics of seven level inverter fed induction motor drive with neural based rotor resistance estimator”, Lecture notes in Electrical Engineering, vol. 326, pp. 1261-1271,. 2015.**
9. **Chitra.A, S.Himavathi, and A.Muthuramalingam, “Design and FPGA Implementation of Rotor Resistance Estimator using Neural Learning Algorithms for Induction Motor Drives” International Journal of Computational Intelligence Research, Vol. 6. No. 4, pp. 871- 878, December 2010.**
10. A. Chitra, T.Meenakshi, J. Asha, “Fuzzy logic controller for Cascaded H-bridge multilevel Inverter” International Journal of Engineering Science and Technology, pp 1378 - 1387 Vol. 3 No. 2 Feb 2011.

11. A. Chitra, T.Meenakshi, J. Asha, published a paper titled "Fuzzy logic controller for Cascaded H-bridge multilevel Inverter" International Journal of Engineering Science and Technology, pp 1378 - 1387 Vol. 3 No. 2 Feb 2011.
12. K.Giridharan, A. Chitra and C. Chellamuthu, "Development of Diode Clamped Inverter based STATCOM using SVPWM Technique" Elixir Elec. Engg. 38 (2011) 4343-4347.
13. Chitra, K.Giridharan and C. Chellamuthu, "Grid Connected Inverter with SVPWM Technique for Photovoltaic Application", Elixir Elec. Engg. 38 (2011) 4438-4442.
14. Apoorva Saxena, Sayak Dutta, Chitra. A, "Artificial Neural Network Controller for Vector Controlled Induction Motor Drive", International Journal of Computer Applications (0975 – 8887) Volume 46– No.14, May 2012.
15. K. Giridharan, A.Chitra, J. Vanishree and W. Razia Sultana, "Simulation and FPGA modeling of a Virtual BLDC", International Review on Modelling and Simulations, Vol. 5, N. 3, June 2012, pp. 1282-1288.

International Conferences:

1. Kassim, Nabeel Najeeb, Sohail Akthar Khan, Kumar Devasish, A. Chitra, and Ryan Sujith. "Design and Real-Time Implementation of Economical Solar Car for Commercial Applications." In *Advances in Smart Grid Technology*, pp. 381-395. Springer, Singapore, 2020.
2. Gopi, R. Reshma, A. Chitra, Pujari Harish Kumar, and R. Mageshvaran. "Analysis of Wind Speed Data in Tadipatri Region in Andhra Pradesh." In *Advances in Smart Grid Technology*, pp. 457-466. Springer, Singapore, 2020.
3. Jose Jacob, Rohit Varghese Thomas, Rakesh E, Chitra A, Smitha Jacob, Mereya Baby and Cini K, "Space Vector Pulse Width Modulation for a seven level Inverter applied to Induction Motor Drive", ICIEEIMT17, Karunya University, 3-4 Feb., 2017. (Accepted and Presented)
4. Jose Jacob, Chitra A, Rohit Varghese Thomas, "Hardware realization and analysis of a seven level Reduced switch Inverter with Space Vector Modulation Technique" ICECCT 2017, SVS College of Engineering, 22-24 Feb., 2017. (Accepted and Presented)
5. Chitra A., Himavathi. S, "Modeling and experimental validation of solar PV system for cascade H-bridge multilevel inverter", Proceedings of 2013 International Conference on Power, Energy and Control, ICPEC 2013 , art. no. 6527662 , pp. 260-265, Feb. 2013.
6. Jayakrishnan, V.K., Sarin, M.V., Archana, K., Chitra, A. "Performance analysis of MLI fed induction motor drive with IFOC speed control" 2013 Annual IEEE India Conference, INDICON 2013, IIT, Mumbai
7. Chitra A., Himavathi. S, "Investigations on the dynamics of seven level inverter fed induction motor drive with neural based rotor resistance estimator", springer international conference on artificial, intelligence and evolutionary algorithms in engineering systems, ICAEES 2014, Nagercoil, India, 2014.
8. A. Chitra, S. Himavathi, A. Muthurmalingam, "Performance Comparison of Neural Network Learning Strategies for Rotor Resistance Estimation in Induction Motor Drives" POWERCOIN – 2008, International Conference, Sona College of Technology, Salem.
9. A. Chitra, S. Himavathi, A. Muthurmalingam, "Identification of Optimal Rotor Resistance Estimator for Vector Controlled Induction Motor Drives" TIMA – 2009, International Conference, Madras Institute of Technology, Chennai.
10. A. Chitra, T.Meenakshi, J. Asha, "A Rule based Fuzzy Logic Controller for Cascaded Multilevel Inverter in utility Applications" ICEESPEEE – 2009, International Conference, SRM university, Chennai.

11. A.Chitra, Dr.S.Himavathi, Dr.A.Muthuramalingam, "Design and FPGA Implementation of Rotor Resistance Estimator using Neural Learning Algorithms for Induction Motor Drives", International Conference on Computational Intelligence and Research Dec 9- 11, 2010, ICCI – 2010. Coimbatore.
12. R. Rajendra, A. Chitra, T. Meenakshi, "Digital Implementation of FPGA based PWM generator for Cascaded H-Bridge Multilevel Inverter", The International Conference on Control, Communication and Power Engineering CCPE 2010, July 28-29, 2010 Chennai, India.

National conferences:

1. T. Meenakshi, A. Chitra, S. Meenakshi, " Multilevel DC link Inverter with reduced number of Switching Devices", PPPS – 2008, National Conference, Vinayaka Mission Kirupananda Variyar Engineering College, Salem.
2. A. Chitra, T.Meenakshi, J. Asha, " Renewable Energy Source fed Multilevel DC Link Inverter with Reduced Switches - A Comparative Study", ITPED – 2009, National Conference, Velammal Engineering College, Chennai.
3. D. Bala Mahesh, A. Chitra, "Performance Analysis of Hexagram Inverter Through Simulation", National Conference on Smart, Electronics and Engineering Materials 2010, Conducted by "Baba Farid College of Engineering and Technology, Punjab" SEEMs'10, On March 5 & 6, 2010.
4. R. Rajendra, A. Chitra, "Modeling and Simulation of Carrier based PWM Generation for Cascaded H-Bridge Multilevel Inverter", National Conference on Emerging Trends in Power Systems, Conducted by "K.L.N College of Engineering, Sivagangai" ETPS-10, On May 5 & 6, 2010.
5. A. Chitra, K.Giridharan, C. Chellamuthu, "Grid Connected Inverter with SVPWM Technique for Photovoltaic Application" SOFTCOMP '11, VIT UNIVERSITY, VELLORE JULY 22-23, 2011
6. K.Giridharan, A. Chitra, C. Chellamuthu, "Development of Diode Clamped Inverter based STATCOM using SVPWM Technique" SOFTCOMP '11, VIT UNIVERSITY, VELLORE JULY 22-23, 2011