
Dr. AEIDAPU MAHESH

Assistant Professor

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Areas of interest

Hybrid Renewable Energy Systems, Evolutionary Optimization Techniques, Power Electronics and Drives.

Educational qualifications

Qualification	Discipline/Area	Year	Board/Institution
Ph.D.	Optimal Sizing and Energy Management Strategies for Hybrid Renewable Energy Systems	2018	National Institute of Technology Kurukshetra, Kurukshetra, India
M.E.	Electrical Engineering (Power Electronics and Electric Drives)	2012	PEC University of Technology, Chandigarh, India
B. Tech.	Electrical and Electronics Engineering	2010	JNT University, Hyderabad
Intermediate	Maths, Physics & Chemistry	2006	Board of Intermediate Education, A.P
SSC	Not Applicable	2004	Board of Secondary Education, A.P

Professional Details

Sl. No	Institute/Industry	Position	Duration	
			From	To
1.	Sharda University	Assistant Professor	July 2012	August 2013
2.	NIT Kurukshetra, Kurukshetra	Assistant Professor	September 2013	October 2019
3.	SVNIT Surat	Assistant Professor	October 2019	Till date

Skills

Simulation/Hardware platforms: MATLAB/Simulink[®], dSPACE[®].

Computer languages: C, C++

Highlights of PhD Research Work

1. The sizing of the stand-alone PV/wind/battery hybrid system has been successfully carried out by using pigeon inspired optimization. The cost-effectiveness of different combinations of energy sources is also analyzed.

2. To address the issue of fluctuations in the power injected into the grid, a novel energy filter algorithm has been developed and simulated.
3. A graphical user interface for the proposed size optimization strategies has been developed as a part of this work using the MATLAB GUIDE interface. This tool works on the optimization strategies developed and can be used as independent software for optimally sizing the PV/wind/battery HRES.
4. The sizing of the BESS for smoothing of the power fluctuations generated by the hybrid system has been investigated. The energy management strategy based on ANN is proposed and the comparative results are presented.

Academic Contributions

Seminar /Conference/workshop/Short-term courses Organized:

1. Organized TEQIP – III sponsored one-week short term course (STC) on, “Control of Power Electronic Converters for on Grid and off Grid Systems” during 03 – 07 August 2020, at EED, SVNIT Surat.
2. Organized one-week short term training program (STTP) on, “Real-time simulation and applications in power electronics, drives and renewable energy systems (RTSA – 2017)” during 18-23 December 2017, at EED, NIT Kurukshetra.
3. Organized a one-day workshop on “Reliability Engineering and Applications” (Sponsored by TEQIP-III) on 25 September 2018 at NIT Kurukshetra.

Guest Lecture delivered:

1. Delivered a guest lecture on “Size Optimization of hybrid renewable energy systems” in PEAS-STC 2017, at Department of Electrical Engineering, NIT Kurukshetra on 06/03/2017.
2. Delivered a guest lecture on “Optimal sizing of hybrid renewable energy systems” in PEAS-STTP 2016, at Department of Electrical Engineering, NIT Kurukshetra on 03/03/2016.
3. Delivered a guest lecture on “Hybrid renewable energy system developments”, at Department of Electrical Electronics Engineering, Chirala Engineering College, Chirala, AP on 26/09/2016.
4. Delivered a guest lecture on “Hybrid renewable energy developments”, at Department of Electrical Electronics Engineering, VRS&YRN college of Engineering & Technology, Chirala, AP on 26/09/2016.

Seminar /conference/workshop/short term attended:

1. Attended a workshop on “Building Management Systems”, Johnson Controls, Pune, during 7-9 March, 2018.
2. Attended a “Workshop on Smart Microgrids”, at Department of Electrical Engineering, IIT Kanpur, during 8 – 10 April, 2016.
3. Attended a “Workshop on Effective Teaching Learning Pedagogy”, Conducted by ISTE, at Trivandrum, during 4 – 6 Feb, 2014.

Administrative Contributions at SVNIT Surat

1. Additional Professor Incharge - Electrical and communication systems, November 2019 – till date.

Administrative Contributions at NIT Kurukshetra

2. Professor in-charge – Electrical Machines and Drives Lab, July 2014 – October 2019.
3. Professor in-charge – Departmental Information, July 2014 (01.07.2014) - July 2018 (13.07.2018).
4. Assistant Professor in-charge – Training and Placement, September 2014 (02.09.2014) – August 2015.
5. Faculty In-charge – SPICMACAY Club, January 2017 (26.01.2017) – June 2018.

6. Faculty In-charge – MAD Club, June 2018 – October 2019
7. Faculty In-charge – Electrical Maintenance and Telephones, October 2018 (03.10.2018) – October 2019.

Research publications

International Journals:

1. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, Hybrid wind/photovoltaic energy system developments: Critical review and findings, *Renewable and Sustainable Energy Reviews* (Elsevier), Volume 52, December 2015, Pages 1135-1147.
2. Kanwarjit Singh Sandhu, **Aeidapu Mahesh**, A new approach of sizing battery energy storage system for smoothing the power fluctuations of a PV/Wind hybrid system, *International Journal of Energy Research* (John Wiley & Sons). Volume 40, issue 9, Feb. 2016, Pages 1221-1234.
3. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, A genetic algorithm based improved optimal sizing strategy for solar-wind-battery hybrid system using energy filter algorithm, *Frontiers In Energy* (Springer), (DOI 10.1007/S11708-017-0484-4).
4. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, Venkata Rao Jagilinki, Optimal sizing of battery energy storage system for smoothing power fluctuations of a PV/Wind hybrid system, *International Journal of Emerging Electric Power Systems*, Volume 18, Issue 1, Feb 2017. (DOI:10.1515/IJEPS-2016-0105)
5. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, Optimal Sizing of a Grid Connected PV/Wind/Battery System Using Particle Swarm Optimization, *Iranian Journal of Science and Technology, Transactions of Electrical Engineering* (Springer), Vol. 43, Issue 1, pp 107–121, March 2019.
6. Rao, Jagilinki Venkata, and **Aeidapu Mahesh**. "Carrier Rotation Strategies for Equal Power Distributions in Cascaded H-Bridge Multilevel Inverters." *International Journal of Emerging Electric Power Systems* Vol. 18, no. 5, Sept, 2017. (DOI:10.1515/IJEPS-2017-0076)
7. Kanwarjit Singh Sandhu, **Aeidapu Mahesh**, Optimal sizing of PV/wind/battery Hybrid Renewable Energy System Considering Demand Side Management, *International Journal on Electrical Engineering and Informatics*, Vol 10, issue 1, 2018. (DOI: DOI: 10.15676/ijeii.2018.10.1.6)
8. Aeidapu Mahesh, Kanwarjit Singh Sandhu. "Optimal Switching Angle Scheme for a Cascaded H Bridge Inverter using Pigeon Inspired Optimization." *International Journal of Emerging Electric Power Systems*. Vol. 20, Issue 2, March 2019. (DOI:10.1515/IJEPS-2017-0205)
9. **Aeidapu Mahesh**, Balwinder Singh, "Vector control of Induction motor using ANN and Particle swarm optimization" in *International Journal of Emerging Technology and Advanced Engineering (IJETA)*, Vol. 2, Issue 9, Sept, 2012.

International Conferences:

1. Gangireddy Sushnigdha and **Aeidapu Mahesh**, On Convergence of Pigeon Inspired Optimization Algorithm, *Indian control conference (ICC – 2019)*, IIT Hyderabad, pp.1-6, December 2019.
2. Prashant Mishra and **Aeidapu Mahesh**, Sine cosine algorithm based staircase modulation for cascaded H-bridge inverter, *IEEE third international conference on electronics, communication and aerospace technology (ICECA 2019)* RVS Technical campus, Coimbatore, pp. 1-6,12-14, June 2019.
3. Shikha Gautam and **Aeidapu Mahesh**, Sine cosine algorithm based shunt active power filter for harmonic compensation, *IEEE third international conference on electronics, communication and aerospace technology (ICECA 2019)* RVS Technical campus, Coimbatore, pp. 1-6,12-14, June 2019.
4. Bogineni Jayachandra and **Aeidapu Mahesh**, "ANN Based Direct Power Control of 2-level PWM Rectifier," *IEEE International Conference on Power Energy, Environment & Intelligent Control*, G. L. Bajaj Inst. of Technology and Management Greater Noida, U. P., India, Apr 13-14, 2018.
5. Bogineni Jayachandra and **Aeidapu Mahesh**, "Pigeon Inspired Optimized PI-controller based Direct Power Control of 2-level PWM Rectifier," *International Conference on Trends in Electronics and Informatics*, SCAD College of Engineering and Technology Tirunelveli, Madras, India, May 11-12, 2018.
6. Nimmi and **Aeidapu Mahesh**, Carrier rotation schemes for equal device conduction periods in Cascaded H-bridge Multilevel Inverter, in *IEEE International Conference on Power Energy, Environment & Intelligent Control (PEEIC2018)* G. L. Bajaj Inst. of Technology and Management Greater Noida, U. P., India, Apr 13-14, 2018.

7. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, Evolutionary Algorithm based Optimal Angle strategy for a Cascade H-bridge Inverter, Sixth International Conference on Smart Computing & Communications 2017, pp. 1-6, 07-08 December, 2017
8. Jagilinki Venkata Rao, **Aeidapu Mahesh**, "Hardware implementation of carrier rotation strategy for Cascaded H-bridge Multilevel Inverters", *IEEE 3rd International Conference on Computing Communication and Automation (ICCCA-2017)*, pp.1-6, 05-06 May, 2017
9. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, "Optimal Sizing of a PV/Wind Hybrid System using Pigeon Inspired Optimization", 7th IEEE Power India Conference (PIICON – 2016), GEC Bikaner, pp. 1-6, 25-27 November, 2016.
10. **Aeidapu Mahesh**, Kanwarjit Singh Sandhu, "ANFIS Based Energy Management Strategy for PV/Wind/Battery Hybrid Energy System", 7th IEEE Power India Conference (PIICON – 2016), pp. 1-6, 25-27 November, 2016.
11. Jagilinki Venkata Rao, **Aeidapu Mahesh**, "Firing Angle Optimization of Seven-Level Cascaded H-bridge Multilevel Inverter with Un-Equal DC Sources using GSA approach", 7th IEEE Power India Conference (PIICON-2016), pp.1-6, 25-27 Nov, 2016.
12. Apar Bansal, **Aeidapu Mahesh**, Jagilinki Venkata Rao, "New Firing Scheme for a PV Based Hybrid CHB Multi-Level Inverter", 7th IEEE Power India Conference (PIICON-2016), pp. 1-6, 25-27 Nov, 2016.
13. Pratibha Singh, **Aeidapu Mahesh**, "GA-Lookup Table Based Firing Angle Optimization Method for a PV Connected CHB-MLI" IEEE First International conference on power electronics, intelligent control and energy systems (IEEE ICPEICES - 2016), pp. 1-6, 4-6 July, 2016.
14. Jagdish Chander, **Aeidapu Mahesh**, "Effect of recombination of charge carriers on modeling of PV array," IEEE International Conference on Energy, Power and Environment, NIT Meghalaya, June 12-13, 2015.
15. Jagdish Kumar, Pavan Kumar P, **Aeidapu Mahesh**, Ankit Shrivastava, "Power system stabilizer based on artificial neural network," 2011 IEEE International Conference on Power and Energy Systems (ICPS), pp.1,6, 22-24 Dec. 2011.
16. Shivam Kumar Yadav, Sunita Chauhan and **Aeidapu Mahesh**, A Novel Swarm Optimization Algorithm based on Cloud Travel Phenomena, 8th International Conference on Cloud Computing, Data Science and Engineering Confluence 11-12 Jan, 2018, pp. 1-5.
17. Shivam Kumar Yadav, Sunita Chauhan and **Aeidapu Mahesh**, A Novel Swarm Optimization Algorithm for Optimal performance of NPC Rectifiers, 1st IEEE International Conference on Power Energy, Environment & Intelligent Control (PEEIC)13-14 April, 2018, pp. 1-5.

Google Scholar Profile:

https://scholar.google.co.in/citations?user=Z_WAlokAAAAJ&hl=en