CURRICULUM VITAE

Dr.N.Sudhakar

Associate Professor
Dept. of Energy and Power Electronics
School of Electrical Engineering
Vellore Institute of Technology
Vellore – 632014
nsudhakar@vit.ac.in, sudhakarunya@gmail.com
9942002947, 8903309664

Summary:

- An outcome focused professional with around 19 years of experience in Teaching and Research.
- Completed Ph.D. in Electrical engineering and awarded Degree from Vellore Institute of Technology (VIT), Vellore, India.

Education

1. Ph.D. Electrical Engineering/Power Electronics (2014) Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India
   Thesis Title: DEVELOPMENT AND ANALYSIS OF EFFECTIVE EMI SUPPRESSION TECHNIQUES AND CHAOS CONTROL IN DC-DC BOOST CONVERTER
2. M.Tech. Electric Drives and Control (2005) Pondicherry Engineering College, Pondicherry.
3. B.E - Electrical and Electronics Engineering (2000)
   Karunya Institute of Technology, Coimbatore.

Experience

- Working as Associate Professor at Dept., of Energy and Power Electronics, School of Electrical Engineering, Vellore Institute of Technology, from 04-04-2019 to till date.
- Worked as Assistant Professor at Annai Teresa College of Engineering, Villupuram, Tamilnadu, India from June 2005 to December 2006.
- Worked as Lecturer at Dr.Navalar Nedunchezhiyan College of Engineering, Tholudhur, Tamilnadu, India from January 2001 to May 2005.

Research Insight

- Total No of Publications : 32
- Google scholar citations : 215, i10 index=8, h-index-8
- Scopus ID : 54914449900
- ORCID : 0000-0003-2947-9839
- Web of Science Researcher ID : W-8193-2019
- Google Scholar ID : MjFMtysAAAAJ&hl
- Google Scholar Link : https://scholar.google.com/citations?user=MjFMtysAAAAJ&hl=en

International Journals

1. Karthik Balasubramanian, Sudhakar Babu Thanikanti, Umashankar Subramaniam, N Sudhakar, Sam Sichilalu "A novel review on Optimization Techniques used in Wind Farm Modelling" Renewable Energy Focus, 2020.
2. Pydikalva Padmavathi, Sudhakar Natarajan. "Single switch quasi Z-source based high voltage gain DC-DC converter" International Transactions on Electrical Energy Systems, Wiley 2020.
3. KJ Reddy, N Sudhakar "RBFN-Based MPPT Technique for PV System with High Voltage Gain Four-Phase Interleaved Boost Converter" Advances in Energy Research, Springer (Selected Papers from ICAER 2017) 2020 Vol. 2, 763-772
4. Sudhakar, N., Sudhakar Babu, T., Balasubramanian, K., Subramaniam, U., Almakhles, D.J. "A State-of-the-Art Review on Conducted Electromagnetic Interference in Non-Isolated DC to DC Converters" IEEE Access 2020 8, 8941119, pp. 2564-2577.
5. Padmavathi, P., Natarajan, Sudhakar. "Solar based high gain power converter with efficient controller for LED application" International Journal of Engineering and Advanced Technology, 2019 8(6), pp. 1583-1591.
6. Natarajan, Sudhakar., Padmavathi, P., Kalvakurthi, J.R., Ramachandaramurthy,V.K., Padmanaban, S. "Conducted Electromagnetic Interference Spectral Peak Mitigation in Luo-Converter Using FPGA-Based Chaotic PWM Technique" Electric Power Components and Systems, 2019 47(9-10), pp. 838-848
7. Reddy, K.J., Sudhakar, N. "ANFIS-MPPT control algorithm for a PEMFC system used in electric vehicle applications" 2019 International Journal of Hydrogen Energy 44(29), pp. 15355-15369.
8. Reddy KJ, Natarajan S. "Energy sources and multi-input DC-DC converters used in

hybrid electric vehicle applications–A review." Elsevier, International Journal of Hydrogen Energy. 2018; 43: 17387-408.

9. Reddy KJ, Sudhakar N. "A new RBFN based MPPT controller for grid-connected PEMFC system with high step-up three-phase IBC." Elsevier, International Journal of Hydrogen Energy. 2018; 43(37):17835-48.
10. Reddy KJ, Sudhakar N. "High Voltage Gain Interleaved Boost Converter With Neural Network Based MPPT Controller for Fuel Cell Based Electric Vehicle Applications." IEEE Access. 2018; 6:3899-908.
11. I Devadoss, P Sakthivel, S Muthukumaran, N Sudhakar. "Enhanced blue-light emission on Cd0. 9-xZn0. 1CrxS (0≤ x≤ 0.05) quantum dots". Elsevier, Ceramics International 2019 45(3): 3833-3838.
12. Reddy KJ, Sudhakar N, Saravanan S, Babu BC. "High Step-Up Boost Converter with Neural Network Based MPPT Controller for a PEMFC Power Source Used in Vehicular Applications." International Journal of Emerging Electric Power Systems. 2018;19 (5).
13. Reddy J, Natarajan S. "Control and Analysis of MPPT Techniques for Standalone PV System with High Voltage Gain Interleaved Boost Converter." Gazi University Journal of Science. 2018;31(2)
14. Reddy J, Sudhakar N. "Design and Analysis of a Hybrid PV-PEMFC System with MPPT Controller for a Three-Phase Grid-Connected System." Journal of Green Engineering. 2018;8 (2):151-76.
15. Sudhakar N, Rajasekar N, Akhil S, Reddy KJ. "Chaos control in solar fed DC-DC boost converter by optimal parameters using nelder-mead algorithm powered enhanced BFOA." In IOP Conference Series: Materials Science and Engineering 2017(Vol. 263, No. 5, p. 052018). IOP Publishing
16. Sudhakar N, Jain S, Reddy KJ. "Solar PV fed stand-alone excitation system of a synchronous machine for reactive power generation." In IOP Conference Series: Materials Science and Engineering 2017 Nov (Vol. 263, No. 5, p. 052017). IOP Publishing.
17. Dhanup S. Pillai, Bidyutprava Sahoo, J. Prasanth Ram, Antonino Laudani, N. Rajasekar, N. Sudhakar,Modellingof Organic Photovoltaic Cells Based on an Improved Reverse Double Diode Model, Energy Procedia, Volume 117,2017,Pages 1054-1061
18. Sudhakar N, Rajasekar N and Shanmuga Sundari A, "FPGA based Chaotic PWM combined with soft switching for effective EMI mitigation in boost converter," 2016 International Conference on Energy Efficient Technologies for Sustainability

(ICEETS), Nagercoil, 2016, pp. 148-152.

19. K. Sangeetha, T. Sudhakar Babu, N. Sudhakar, N. Rajasekar, Modeling, analysis and design of efficient maximum power extraction method for solar PV system, Sustainable Energy Technologies and Assessments, Volume 15,2016,Pages 60-70.
20. Sudhakar Natarajan & Rajasekar Natarajan (2014) Effective Suppression of Conducted Electro Magnetic Interference in DC-DC Boost Converter Using Field Programmable Gate Array Based Chaotic Pulse Width Modulation Switching, Electric Power Components and Systems, 42:5, 471-480.
21. Sudhakar Natarajan and Rajasekar Natarajan, "An FPGA Chaos-Based PWM Technique Combined with Simple Passive Filter for Effective EMI Spectral Peak Reduction in DC-DC Converter," Advances in Power Electronics, vol. 2014, Article ID 383089, 11 pages, 2014.
22. Shanmuga Sundari, A & Natarajan, Dr. Sudhakar & Kaliannan, Palanisamy & Subramaniam, Umashankar. (2014). Conducted EMI suppression in DC-DC boost converter using Labview. International Journal of Applied Engineering Research. 9. 9353-9364.
23. Sudhakar N, Rajasekar N, Rohit V T, Rakesh E and J. Jacob, "EMI mitigation in closed loop boost converter using soft switching combined with chaotic mapping," 2014 International Conference on Advances in Electrical Engineering (ICAEE), Vellore, 2014, pp. 1-6.
24. N. Sudhakar, N. Rajasekar, S. Arun and A. S. Sundari, "Mitigation of EMI in DC-DC converter using analogue chaotic PWM technique," International Conference on Sustainable Energy and Intelligent Systems (SEISCON 2011), Chennai, 2011, pp. 272-277.

Project proposal.

1. **Executive Member of FIST program 2016**, sanctioned fund of Rs. 115.0 Lakh (215580 USD) by Department of Science and Technology, Reference number: **SR/FST/ETI-420/2016**.

2. Submitted a Project titled "**Mitigation of radiated and conducted Electromagnetic Interference in DC-DC units used in Space Vehicles.**" to ISRO on the scheme Development of Technologies for sustained Indian Human Space Program and Space Exploration.

3. Established a Solar Energy Research Cell (SERC); in School of Electrical Engineering, VIT University funded by Department of Science and Technology Government of India, New Delhi & VIT University cost of 60 Lakhs INR and Inaugurated Mr. Suresh Kumar,

TATA Steel Vice President and Dr G Viswanathan, Chancellor, VIT Unviersity, on 16 Oct 2015.

Familiar on hardware and software Technologies:

- Typhoon HIL
- dSPACE controller ds1104
- Matlab - simulink
- PSIM
- PSPICE
- Verilog

Invited speaker

1. Delivered a guest lecture as speaker for the three days National Workshop "Modelling of power electronic systems using Simulink" organized by Government College of Engineering, Bargur under TEQIP on 19-21, February 2015.

2. Delivered a guest lecture as speaker for the three days National Workshop "Advanced trends in power electronics" organized by Government College of Engineering, Bargur under TEQUIP on 22, July 2016.

Reviewer of international journals

- IEEE Transactions on Industrial Electronics
- IEEE Journal of Emerging and Selected Topics in Power Electronics
- ISA Transactions
- IET Power Electronics
- IET Electric Power Applications
- Electric Power Components and Systems Taylor and Francis
- Journal of Green Engineering
- IEEE Access

Membership in professional bodies

- Member of IEEE, Membership number: 92331796

- Life member of SCRS (Soft Computing Research Society)

Workshop / Conference organized

International / National Conference /FDP	Coordinator/Organizing Committee Member/ Session Chair	2001-till date	More than 80 Events

Workshop	Workshop Convener	2001-till date	5 Events

Attainments

- Secured 83.10 %ile in GATE 2002.
- Published Manual cum Observation in Alternating Current Machines, Direct Current Machines (for EEE & ECE) in the name of FLUX PARK for ANNA UNIVERSITY Syllabus by ANURADHA publication, Chennai during the year 2002-2005.
- Completed the MxLA certification of MISSION 10X (Second Level) programme and course material available in MISSION 10X portal.
- Established IEEE school chapter and held the in-charge at Dr.NNCE and Annai Teresa College of Engineering in the year 2001 and 2004

Ph.D Supervision

- Thesis titled "Modeling and Analysis of High Step-up DC-DC Boost Converters for Fuel Cell Applications" by Dr.Jyotheeswara Reddy. Completed in September 2019.

PG Dissertations supervised

S.No	Title of Project	Name of the Student	Year
1	Conducted EMI suppression in an interleaved boost converter	Biprashish	2016
2	Advanced speed control technique for universal motors with PWM based chopper	Aswathy	2016
3	Chaos Control in Solar Photo Voltaic Fed DC-DC Boost Converter Using Parameter Optimization by Bacterial Foraging Algorithm	Gouvrav Kumar	2014
4	Effective Conducted Noise Mitigation in DC-DC Power Converters a Combined Approach	Saya Akhil	2014
5	Conducted Electromagnetic Interference	Aparajitha	2015

	Suppression in Luo Converter Using Chaotic PWM Technique		
6	Chaotic pwm spread spectrum scheme for Conducted noise mitigation in DC-DC Converters	Gishin Jacob George	2012

Administrative Responsibilities (at the present institute)

Event/Program	Role	Year
gravitas (International Tech. fest)	Co-Convenor	2016, 2017
Riviera (International Cultural fest)	Core Coordinator	2009-2015
graVITas	Core Coordinator	2011-2015
VIT Mens Hostel	Deputy warden	2008 – till date
VITEEE (Renowned UG Entrance Exam)	Representative	2007- till date (13 years)
UG Counselling	Admission Team Member	2017, 2018
Festivity (Faculty Cultural Program)	Core Coordinator	2016, 2017
Website Update/ Revamp	School Coordinator	2011-13, 2018 –till date
Energy Conservation Week	Core Coordinator	2016, 2017, 2018

Reference

1. Prof. Dr.Rajasekar, Senior Professor, Department of Energy and power Electronics, Vellore Institute of Technology, Vellore-14, nrajasekar@vit.ac.in
2. Dr. Kalaiselvi, Assistant Professor, IIT Ropar, India kalaiselvi@iitrpr.ac.in

Declaration: I Dr. N. Sudhakar, hereby declare that all the information's given above are genuine.

(N. Sudhakar)