

Dr. Sandeep Vuddanti, *Senior Member IEEE*

Assistant Professor & Coordinator
Department of Electrical Engineering
Central University of Karnataka
Kadaganchi, Aland Road,
Gulbarga District - 585367, Karnataka, INDIA

E-mail: vsandee@cuk.ac.in
Mobile no : +91- 8861290060
www.sites.google.com/view/vsandee
www.cuk.ac.in

Academic Qualifications:

- **Ph.D - Electrical Engineering, Indian Institute of Technology (IIT) Delhi**, New Delhi, 2009 - 2013.
Dissertation Title: *Investigations on Renewable Energy based Single Phase Power Generation using Self Excited Induction Generators*
- **M.Tech - Power Electronics and Drives, Vellore Institute of Technology (VIT), Vellore**, 2007 – 2009.
- **B.Tech - Electrical & Electronics Engg, Jawaharlal Nehru Technological University, Hyderabad**, 2003 – 2007.

Teaching Experience:

- **Assistant Professor**, Dept. of Electrical Engineering, Central University of Karnataka, Nov 2013 to till date.
- **Teaching Assistant**, Dept. of Electrical Engineering, IIT Delhi, Aug 2009 – May 2013.
- **Teaching Assistant**, Dept. of Electrical Engineering, IIT Ropar, Jan 2010 – May 2010.

Industrial Experience:

- **Intern Researcher, General Electric (GE) Global Research Centre**, Bangalore, May 2010 – July 2010.
Project Title: *Design, Simulation and Optimization of Energy Efficient Single phase Induction Motor for domestic appliance applications*

Administrative Experience at Central University of Karnataka (CUK):

- **Coordinator**, School of Engineering, CUK, Nov 2013 to till date.
- **Coordinator**, Placement and Training Cell, School of Engineering, CUK, Sep 2016 to till date.
- **Coordinator**, Examination Section, CUK, April 2014 to March 2016.
- **Faculty In-charge**, Guest House, CUK, Nov 2013 to May 2016.
- **Member**, Local Purchase Committee, School of Engineering, CUK, March 2015 to till date.
- **Member**, Board of Studies, Integrated Engineering programs, CUK.
- **Member**, Board of Studies, Integrated Science Programs, CUK.
- **Member**, Board of Studies, Community College Programs, CUK.
- **Member**, Board of Studies, Aerospace Engineering programs, CUK.
- **Member**, Selection Committee, Contractual faculty, CUK.
- **Member**, Prospectus Committee – 2014, 2015 and 2016, CUK.
- **Member**, Distinguished Lecture Series Committee – 2017, CUK.
- **Coordinator**, School of Engineering – NAAC Accreditation 2016, CUK.
- **Member**, Expert Committee, Karnataka German Technical Training Institute, Gulbarga, Govt of Karnataka.
- **SWAYAM - NPTEL Brand Ambassador & SPOC - Local Chapter**, Central University of Karnataka.

Sponsored Projects Undertaken:

- **UGC Research Grant** for “Design and Development of Efficient & Low Cost Electric Generator for Small Scale Renewable Energy Applications”

Research Interests:

- Renewable Energy Systems, Micro grids, Smart Grids, Electric Vehicles, Computer-aided design of Electric Machines, Power Electronics & Drives, Energy Conversion and Energy Management.

Software Proficiency:

- MATLAB/Simulink , SPEED, Motorsolve, Flux, Motor-CAD, Maxwell.

Publications:

International Journals:

1. S.S. Murthy, Bhim Singh and **V. Sandeep**, “A Novel and Comprehensive Performance Analysis of Single Phase Two Winding Self- Excited Induction Generator” *IEEE Transactions on Energy Conversion*. vo1. 27, no.1, pp. 117- 127, March 2012.
2. S.S. Murthy, Bhim Singh, and **V. Sandeep**, “Design-Based Computational Procedure for Performance Prediction and Analysis of Single Phase Self-Excited Induction Generator” *IET Electric Power Applications*, vo1. 7, no. 6, pp. 477 - 486, 2013.
3. S.S. Murthy, Bhim Singh, and **V. Sandeep**, “An Analytical Performance Comparison of Two Winding and Three Winding Single Phase SEIGs” *Electric Power Systems Research, Elsevier Journal*, vol. 107, pp. 36-44, Feb. 2014.
4. S.S. Murthy, Bhim Singh, and **V. Sandeep**, “Experience in Developing a Single-Phase Two Winding 5 kW Self-Excited Induction Generator for Off-grid Renewable Energy based Power Generation” *Journal of The Institution of Engineers (India): Series-B – Springer Journal*, vol. 97, no.2, pp. 127-137, June 2016.
5. S. Surender Reddy, **Vuddanti Sandeep**, and Chan-Mook Jung “Review of Stochastic Optimization Methods for Smart Grid” *Frontiers in Energy – Springer Journal*, vol. 11, no.2, pp. 197-209, June 2017.

International Conferences:

1. S.S. Murthy, Bhim Singh, **V. Sandeep** and Gurdiyul Singh “Design and Development of a Novel Single-Phase Self-Excited Induction Generator for Bio-Energy Based Power Generation” Proceedings of Centenary Conference, 2011 - Electrical Engineering, **Indian Institute of Science, Bangalore**, Dec. 14-17, 2011, pp. 204-209.
2. **V. Sandeep**, S.S. Murthy and Bhim Singh “A Comparative Study on Approaches to Curve Fitting of Magnetization Characteristics for Induction Generators” *IEEE International Conference on Power Electronic, Drives and Energy Systems (PEDES 2012)* 16-19, December 2012, Bengaluru India, pp. 1-6.
3. Adlan Pradana, **V. Sandeep**, S.S. Murthy, and Bhim Singh “A Comprehensive MATLAB –GUI Based Analysis and Performance Evolution of Single Phase SEIG” *IEEE International Conference on Power Electronic, Drives and Energy Systems (PEDES 2012)* 16-19, December 2012, Bengaluru India, pp. 1-6.
4. Ankur Garg, Ankit Singhal, S.S. Murthy and **V. Sandeep** “Online Parameter Determination and Performance Analysis of Three Phase Induction Motor using Virtual Instrumentation” *IEEE International Conference on Power Electronic, Drives and Energy Systems (PEDES 2012)* 16-19, December 2012, Bengaluru India, pp. 1-6.
5. **V. Sandeep**, Bala Murali krishna.V, Kiran Kumar Namala and Nagesrara Rao.D “Grid Connected Wind Power System Driven by PMSG With MPPT Technique using Neural Network Compensator” *IEEE International Conference on Energy Efficient Technologies for Sustainability*, 7-8 April 2016, Nagercoil, India, pp. 1-5.
6. **Sandeep Vuddanti**, Adlan Pradana, S S Murthy and Bhim Singh “An Optimum solution for Field Development of Single Phase Power Generation using 3-Phase Self Excited Induction Generator” *IEEE International Conference on Power Electronic, Drives and Energy Systems (PEDES 2016)*, 14-19, December 2016, Trivandrum, India, pp. 1-6.
7. C. Sreenath and **V. Sandeep** “SWOT Analysis of Smart DC Microgrids” *IEEE International Conference on Innovative Technologies in Engineering (ICITE2018)*, 11 – 13, April 2018

National Symposiums:

1. **V. Sandeep** “FACTS for Effective & Reliable Transmission of Electrical Power” National Level Technical Symposium, B.I.T.S, WARANGAL, A.P., 24- 25 Feb. 2006
2. **V. Sandeep** “Information Technology in Electrical Power Systems” National Level Technical Symposium, K.S.R.M College of Engineering, KADAPA, A.P., 4th March 2006
3. **V. Sandeep** “Advanced HVDC Technologies” National Level Technical Symposium, VITS, KAVALI, A.P., 2005.
4. Sharankumar Shastri, Shubhojit Ghosh, **V.Sandeep** “Novel Smart Bladed Wind Turbine Design” *IEEE UVCE's Fourteenth National Annual Technical Symposium, KAGADA 2017*, 14 Oct 2017.

Awards/ Achievements:

- **Gandhian Young Technological Innovation Award 2013** for “Novel Stand-alone 1-Phase AC Generator for Rural Electrification using Renewable Energy” by SRISTI Foundation and Supported by National Innovation Foundation & Dept. of Science & Technology, Govt. of India.



- Selected as **amongst the top 24 innovators across the country by Economic Times NOW and Times NOW** for the show “**Power of Shunya - Challenge for Zero**” in Sep. 2013.
- Recognized as a “**Corporate Finalist**” at the **3M-CII Innovation Challenge 2014**.
- Selected in **Top 10 Innovative Projects Award 2014 at Doctoral Level by Indian National Academy of Engineering (INAE), Govt of India**.
- **Best Research Paper Award and Silver Medal, by Railway Board and Institution of Engineers, Dec 2017**
- **Dr. APJ Abdul Kalam Life Time Achievement National Award 2017** for remarkable achievements in field of Teaching, Research and Publications by **International Institute for Social and Economic Reforms**.
- Participated in **Festival of Innovation at Rashtrapati Bhavan on 07th March 2015** by National Innovation Foundation, Govt of India.
- **Best socially relevant academic project** on “Design and Development of a novel 5 kW 1- Phase AC Generator for Bio-energy based power generation” at **Gandhi Jayanti Celebrations, NRCVEE, IIT Delhi, 2nd Oct. 2011**.
- **Best Poster presentation Award** for “Analysis, Design and Development of a novel 1- phase 5 kW Self Excited Induction Generator for Renewable Energy Applications” at **Seminar cum exhibition on “Renewable Energy – Technology, Production, Finance & Research** organized by IIT Delhi Alumni Association on 12th Nov. 2011.
- **Best Poster presentation Award** for “Low Carbon Novel Stand-Alone Green Technology for Renewable Energy Based Power Generation” at **National Science Day celebrations** at IIT Delhi, 28th Feb, 2012.
- **One of Finalist of IITD Class of 89 Innovation Award –2012** for the topic on Standalone Single Phase AC Generator for Rural Electrification in India – A Novel Green Energy Technology.
- **Reviewer for International Journals** like IEEE, Elsevier, Taylor & Francis, InderScience

Special / Popular lectures delivered:

- “Opportunities for a B.Tech Graduate – Job & Higher Education” at PBR VITS, Kavali on 22 Aug 2013.
- “Current Research Trends and Innovations” at Dept of Mathematics, CUK on 25 Nov 2016
- “Linkage of Knowledge through Engineering Education, Project Work, Research & Innovation” at SECAB, Bijapur, 17 Oct 2017.
- “Recent Technologies in Power Electronics and their Applications” at SECAB, Bijapur, 17 Oct 2017.
- “Successful Journey of A Student in 21st Century” at JNTU, Hyderabad on 12 Dec 2018
- “Successful Journey of A Student in 21st Century” at University of Mysore on 20 March 2018
- “Emerging Smart Grids” at MSRIT Bangalore on 13 April 2018
- “Renewable Energy, Microgrids and Smart Grids” at GRIET, Hyderabad on 10 May 2018

Courses taught to Undergraduate and Post-Graduate students:

- Introduction to Engineering, Interdisciplinary Engineering, Control Systems, Measurements and Instrumentation, Elements of Electrical Engineering, Power Systems Analysis and Stability, Environmental Science and Technology, Engineering Workshop, Modeling of Electric Machines, Electric Drives, Smart grids, Micro grids, Electric Vehicles, Electrical Machines, Power Electronics, Measurement and Instrumentation Lab, Control Systems Lab, Power Electronics Lab, Power Systems Lab, Electro Mechanics Lab, Electric Machine Design Lab.

Seminars/ Workshops / Programs organized:

- Organized a Seminar on Biology by Dr. Narendra Jawali (BARC, Mumbai) on 20th Aug 2014
- Organized a Seminar on Biology by Dr. P. Anil Kumar (UoH, Hyderabad) on 25th Aug 2014
- Organized a Seminar on Sustainable Energy Technologies by Dr. YB Ramakrishna (Biofuel Board, Karnataka) on 22 Oct 2014.
- Organized a Seminar by Prof. Jagadheesh, IISc Bangalore on 15th Sep 2014
- Organized a Seminar on “Inclusive Innovation” by Prof. Aravind Chinchure, Symbiosis, Pune on 28th Feb 2015.
- Organised a Seminar on “Decoding the Life” by Dr. Gopalan Gnanaguru, Harvard Medical School, Boston, US on 12th Jan 2015
- Organised Seminars on “Mathematical Modeling & Simulation, Integral Transforms, Probability and Statistics” by Dr. Odolu Ojjela, Defence Institute of Advanced Technology, Pune on 29th and 30th Jan 2015.
- Organized “Science Day Celebrations 2015” on 28th Feb 2015.
- Organized “Abdul Kalam Jayanti Celebrations 2015” on 15th Oct 2015.
- Organized “Youth Day Celebrations 2016” on 12th Jan 2016.
- Organized 2-day workshop on “Auto Robotics” in association with BARC- IITD, Feb 2016.
- Organized 2-day workshop on “Home Automation” in association with BARC- IITD, Feb 2016.
- Organised a Seminar on “Power Electronics” by Dr. Bsavaraj Banakar, UBDT College of Engineering, Davangere on 26th March 2016
- Organized 2-day workshop on “Solar Panel Development” in association with Radiance - IITB, Aug 2016.
- Organized 2-day workshop on “Android App Development” in association with Radiance - IITB, Aug 2016.
- Organized 1 – day seminar on “Space Research and Applications” by Dr. Shankar, Ex- Director, ISRO on 15 Sep 2016.
- Organized 1 – day seminar on “Applications of Power Electronics in Solar Energy Systems” by Dr. Chinmay Jain, Shakti Pumps, Indore on 11 March 2017.
- Organized 1 – day seminar on “HVDC Technologies” by Prof. Arunachalam, BHEL on 27 July 2017.
- Organized “Engineers Day Celebrations 2014, 2015, 2016 & 2017” on 15th Sep.
- Organized 2-day workshop on “Internet of Things” in association with Radiance - IITB, Oct 2017.
- Organized 2-day workshop on “Quadcopter” in association with Radiance - IITB, Oct 2017.
- Organised a Seminar on “Power Electronics Applications in Smart Grid” by Dr. Chandrasekhar, NIT Warangal on 25 Nov 2016
- Organized 1-day workshop on “Arduirno Programming and Applications” on 13 Jan 2018.
- Organized workshop on Programming with Arduino for faculty and students on 10 – 11 Feb 2018 in collaboration with IIT Hyderabad
- Organized 2-day event “Festival of Innovations 2018” on 28th Feb 2018.
- Organized workshop on Programming with Python for faculty on 10 March 2018 in collaboration with IIT Hyderabad
- Organized 1-day workshop on “Scilab” by Dr. Vijay Babu, IIIT Dharwad on 24 March 2018.
- Organized workshop on Programming with Python for students on 07 April 2018 in collaboration with IIT Hyderabad
- Conducted workshops on Awareness programs on MOOCS / NPTEL / SWAYAM courses in 2017 and 2018.

Contribution to new Course/Lab development/Institute

- Instrumental in developing course structure and curriculum of electrical engineering programs of CUK
- Instrumental in developing course structure of electronics & communication, computer science, mechanical, civil engineering programs of CUK
- Convener of National Advisory Committee for curriculum development of engineering programs
- Established electrical engineering labs at CUK (Analog & Digital Circuits Lab, Measurement & Instrumentation Lab, Control Systems Lab, Microprocessor & Microcontroller Lab, Power Electronics Lab, Power Systems Lab, CAD of Electrical Machines Lab, Renewable Energy Lab).
- Instrumental in conducting All India Common Entrance Test (CUK-CET) in 2014 and 2015.
- Instrumental in setting up Chemistry Laboratory at CUK

- Instrumental in setting up 250 kW Solar energy plant at CUK
- Convener of 1st Curriculum development workshop for M.Sc. Chemistry program at CUK
- Established SWAYAM – NPTEL Local Chapter at CUK
- Instrumental in implementing MOOCs for students in CUK.
- Instrumental in formulating MOU between CUK and Centre of Excellence on Disaster Management, JNTUH University, Hyderabad
- Instrumental in formulating MOU between CUK and IIT Hyderabad.

Projected Guided:

Ph.D Thesis: (on-going)

- Bala Murali krishna “Investigations on Electric Generators for Renewable Energy Applications”
- Sudheer P “Analysis and Design of Smart MicroGrids in Indian Scenario”
- Srinath C “Analytical and Critical Studies on DC Smart Grids in Indian Scenario”

M.Tech Thesis: (completed)

- Afshan Nausheen “Study of Self-Excited Induction Generator for Wind Energy Systems” April 2018.
- Avijeet B “Power Quality Improvement in Solar PV System using UPFC” April 2018.
- Biswanath Hajoary “Performance Analysis of Single Phase Induction Motor in Ceiling Fan Application” April 2018.
- Mohd Sohail Jafar “Borewell Rescue Robot” April 2018.
- Sana Sumeen “Predictive Control of Battery / Ultra Capacitors based Hybrid Energy System in Electrical Vehicles” April 2018.
- Sharankumar “Design & Analysis of PMBLDC Motor for Electric Vehicles” April 2018.
- Spandana R M “Technology Foresight Study of Electric Aircraft” April 2018.
- Suchitra “Investigations on Future Electrochemical Energy Storage Technologies & their Impacts in Electric Vehicles” April 2018.
- Varun N John “Design & Analysis of C-dump Converter based SRM Drive” April 2018.

B.Tech Thesis: (completed)

- Avijeet and Biswanath “Design and Development of Electric Bicycle” Aug 2017
- Varun John “Design of Switched Reluctance Motor for Small Electric vehicles” Aug 2017
- Sharan Shastri “Design of Brushless DC Motor for Small Electric vehicles” Aug 2017
- Afshan “Modeling and Simulation of Solar Charging Station for Electric Vehicles” Aug 2017
- Spandana “Analysis and Control of Grid Interfaced Renewable Energy Systems” Aug 2017
- Suchitra “Analysis and Control of DC Micro Grid” Aug 2017
- Chandrika B H and Pooja S P and Vishnuvardhan “Design and Development of Small Scale Wind Energy Systems” April 2018.
- Shivanand and Y Maruti “Design and Modelling of Microgrid” April 2018.

Professional Memberships:

- **IEEE SENIOR MEMBER** (Power & Energy Society, Power Electronics Society, Industrial Applications Society and Industrial Electronics Society)
- **Member, E4C Community** (Supported by ASME, IEEE, ASCE)
- **Life Member, ISTE**

(V. SANDEEP)