

Dr. Phaneendra Babu Bobba

Areas of Interest:

- Electric Vehicles, Hybrid electric vehicles and Plug-in hybrid electric vehicles.
- Hybrid Energy storage systems (Battery and Supercapacitor combination)
- Power management systems in Electric vehicles.
- Electric Drives, Power Electronics, DSP based control of Drives
- Dynamic Wireless charging in supercapacitor based EVs.
- Design of Wireless power transfer systems for Mobile and Medical Applications.
- V2G and G2V communication / Smart Grid

Education

- Ph.D., Indian Institute of Technology Delhi (IIT Delhi)
- M.Tech. (Power Electronics), Jawaharlal Nehru Technological University, Hyderabad
- B.E., SRKR Engineering college, Bhimavaram, Affiliated to Andhra University

Academic/Industrial Experience

1. Professor, Electrical and Electronics Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, Jan 2018 to till date.
2. Assistant Professor and DUG coordinator, Department of Electrical Engineering, Shiv Nadar University, from Jan 2014- Dec 2017.
3. Research Scholar, Department of Electrical Engineering, Indian Institute of Technology Delhi, from July 2008 to Jan 2014.
4. Sr. Assistant Professor, Department of Electrical and Electronics Engineering, CVR Engineering College, from Nov 2004 to June 2008
5. Assistant Professor, Department of Electrical and Electronics Engineering, DVR CET, from Sep 2000 to Nov 2004.

R & D Projects:

IMPRINT II – MHRD and DST

1. Design and Development of Intelligent Microgrids for Communities, Submitted proposal – Rs 200 lacks (under Review)

Collaborative work:

2. V2G and G2V Ancillary Services – Woosong University South Korea and GRIET, Bachupally
Collaborators- Dr. Phaneendra Babu Bobba and Dr. S. Surender Reddy
3. Design and development of segmented SRM based E-bicycle –
Dr. Gaurang Vakil, Assistant Professor, University of Nottingham UK
Dr. Phaneendra Babu Bobba, Professor, GRIET, Bachupally
4. Developing EV Charging infrastructure as per Bharat EV charger standards – CUK Karnataka and GRIET, Bachupally

Collaborators- Dr. Phaneendra Babu Bobba and Dr. Sandeep Vuddanti

External Project grant From TI and DST: `

5. Design of a Smart Communication System for an In-motion Wireless Charging based Electric Vehicles, Rs: 500000 from DST and TI – (Completed)

Internal Grant at Shiv Nadar University under OUR Scheme:

6. Design of a Cost Effective Distributed Generation Model, Rs.30000 (Completed)
7. Dynamic wireless power transfer for roadway powered electric vehicles, Rs.30000 (Completed)
8. Improving the efficiency of a wireless power transfer system by using resonators in mobile applications, Rs.30000 (On going)
9. Design and Development of a Wireless Power Transformer for Deep Brain Stimulator, Rs.30000 (On going)

Selected Publications (IEEE)

1. M. Kavitha, P. B. Bobba and D. Prasad, "Comprehensive mathematical modelling and experimental analysis of a wireless power transfer system for neighborhood electric vehicles," *2015 IEEE International WIE Conference on Electrical and Computer Engineering (WIECON-ECE)*, Dhaka, 2015, pp. 275-279.
2. M. Kavitha, B. J. Varghese, P. B. Bobba and D. Prasad, "Extensive analysis on wireless power transformer for various core configurations," *2015 39th National Systems Conference (NSC)*, Noida, 2015, pp. 1-6.
3. B. J. Varghese and P. B. Bobba, "Design and analysis of a robust system for wirelessly powering implantable devices," *2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)*, Delhi, 2016, pp. 1-5.
4. V. Malyala and P. B. Bobba, "Realization of complete permanent magnet brushless DC motor drive for electric two-wheelers," *2016 IEEE 1st International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)*, Delhi, 2016, pp. 1-6.
5. M. Kavitha, P. B. Bobba and D. Prasad, "Investigations and experimental study on Magnetic Resonant coupling based Wireless Power Transfer system for neighborhood EV's," *2016 IEEE 6th International Conference on Power Systems (ICPS)*, New Delhi, 2016, pp. 1-6.
6. M. Kavitha, P. B. Bobba and D. Prasad, "A Comparative Analysis on WPT System using various Power Transfer Methodologies and Core Configurations," *2016 IEEE 7th India International Conference on Power Electronics (IICPE)*, Thapar University, Patiala, India, 2016
7. M. Kavitha, P. B. Bobba and D. Prasad, "Effect of coil geometry and shielding on wireless power transfer system," *2016 IEEE 7th Power India International Conference (PIICON)*, Bikaner, 2016, pp. 1-6.
8. B. J. Varghese, P. B. Bobba and M. Kavitha, "Effects of coil misalignment in a four-coil implantable wireless power transfer system," *2016 IEEE 7th Power India International Conference (PIICON)*, Bikaner, 2016, pp. 1-6.
9. Phaneendra Babu Bobba and K. R. Rajagopal "Modeling and Analysis of Hybrid Energy Storage Systems Used in Electric Vehicles", Proceedings of the IEEE International Symposium on Power Electronics, Drives and Energy Systems, PEDES-2012 held at Bangalore, India, 16-19 December 2012.

10. Phaneendra Babu Bobba and K. R. Rajagopal "Compact Regenerative Braking Scheme for a PMBLDC Motor Driven Electric Two-Wheeler", Proceedings of the IEEE International Symposium on Power Electronics, Drives and Energy Systems, PEDES–2010–Power India, held at New Delhi, India, 21-23 December 2010.
11. **Babu, B.P.**, Srinivas, J.V.S.; Vikranth, B.; Premchad, P., " Fault diagnosis in multi-level inverter system using adaptive back propagation neural network", Proceedings of the IEEE India International Conference (INDICON) 2008, 11-13th December 2008.
12. Merugu Kavitha, Phaneendra Babu Bobba and Dinkar Prasad," Effect of Lateral and Angular Misalignments on Power Transfer Efficiency of a Wireless EV Charging System," Proceedings of the IEEE India International Conference (INDICON) 2017, organized at IIT Roorkee, India.
13. Shruti Seshadri, Merugu Kavitha, and Phaneendra Babu Bobba," Effect of Coil Structures on Performance of a Four Coil WPT Powered Medical Implantable Devices," presented in IEEE- ICETEST_2018, Govt. Engg College, Thrissur, Kerala, India.
14. M. Kavitha, P. B. Bobba and D. Prasad, "A Study on Effect of Coil Structures and Core Configurations on Parameters of Wireless EV Charging System," Presented in International Transportation Electrification Conference, IEEE- ITEC India, 2017
15. S Sai Sreekar, Phaneendra Babu Bobba and P C Jain "Water Level Monitoring and Management of Dams using IoT", presented in IEEE, IoT-SIU 2018

Journals/ conferences under review:

16. Merugu Kavitha, Phaneendra Babu Bobba, Thota Venkata Pruthvi, and Dinkar Prasad, "New Methods for Lateral Misalignment Detection and Charging Track Control of a Dynamic Wireless EV Charging System," under first review in IEEE Transactions on Transportation Electrification, 2018.
17. Merugu Kavitha, Phaneendra Babu Bobba, and Dinkar Prasad, "Advancements in Wireless Power Transfer System based Electric Vehicles," under first review in IEEE.Trans.on Transportation Electrification, 2017.

Innovative Project reports submitted to Texas Instruments:

18. Merugu Kavitha, Thota Pruthvi, T Sriram, A sai Varun and Phaneendra Babu Bobba; "Design of a Smart Communication System for an In-motion Wireless Charging based Electric Vehicles", TI India Innovation challenge 2016, organized by DST and IIM Bangalore.
19. Bobba, Phaneendra Babu; Kavitha, M.; Bn, Sakthivel.; Sugnya, Siva; "Design and Control of Energy Efficient Supercapacitor based Wireless Power Transfer System for Neighborhood Electric Vehicles (NHEVs)", TI India Innovation challenge 2015.
20. Bobba, Phaneendra Babu.; M Varun, Vavya Chopra and Priyaam Awasthy, "Design and Control of Hybrid Energy Storage System based Small Plug-in Electric Vehicle", TI India Innovation challenge 2015.

Conference Papers presented in OUR Conference at SNU:

21. B. J. Varghese, and P. B. Bobba," Design of a Cost Effective Distributed Generation Model" Presented in a OUR Conference organized by SNU
22. Akanksha Soni and Phaneendra Babu Bobba," Dynamic wireless power transfer for roadway powered electric vehicles" Presented in a OUR Conference organized by SNU
23. Urvi Ahulwalia and Phaneendra Babu Bobba," Improving the efficiency of a wireless power transfer system by using resonators in mobile applications" Presented in a OUR Conference organized by SNU
24. Yuvraj Prabhakar and Phaneendra Babu Bobba," Design and Development of a Wireless Power Transformer for Deep Brain Stimulator" Presented in a OUR Conference organized by SNU.

Workshops Conducted/Attended

1. Attended and presented paper in International transportation electrification conference (ITEC 2017), Jointly Organized by ARAI Pune, IEEE and SAE India – 13 to 15th Dec, 2017.
2. FDP On Automotive Electronics and AUTOSAR organized by KPIT Systems PUNE, 28-30 Dec, 2015
3. Participated in IEEE International Conference on "Power Electronics Drives and Energy Systems (PEDES 2012)" held at IISC Bangalore, organized by CPRI, Bangalore during 16th - 19th Dec., 2012.
4. Participated in IEEE International Conference on "Power Electronics Drives and Energy Systems (PEDES 2010)" held at India Convection Centre, New Delhi, organized by IIT Delhi during 16th - 19th Dec., 2010.
5. MHRD Sponsored advanced technology program on "Digital signal processor applications to Modern industrial drives", held at NIT Warangal, during 16th-28th June, 2008.
6. Short-term course on "Utilization of solar energy and its applications" held at IIT Delhi, during 8th -22nd Feb, 2008.
7. Two day "National Workshop on Power Electronics" held at IIT Bombay during 6th –7th Sep 2007.
8. Short-term course on "HVDC Transmission & FACTS" held at CVR College of Engineering, during 3rd -7th, Dec, 2007.
9. Participated in "National Conference on Power Electronics" at IISC Bangalore, during 16th -19th Dec., 2007.
10. Short-term intensive course on "neural networks and fuzzy logic" held at CVR College of Engineering, during 12th- 17th DEC, 2007.
11. Three-day workshop on "power system operation and control "during November 27-29, 2006 organized by OU College of Engineering.
12. Short term course on "EMF THEORY "held at CVR College of Engineering, during 21st-27th, Jul 2004

Guest Lectures National/International

1. Resource person in FDP program on "Advances in Power Electronics & Drives" held at AKGEC, GHAZIABAD during 1-2nd April 2016.
2. Organization committee chairman for the National Systems Conference (NSC 2015) held at SNU during 14-16th December 2015, technically sponsored by IEEE and SSI.
3. Technical Program Co-Chair – PIICON 2016
4. Invited talk at Stanly college of engineering and technology for Woman, Hyderabad