Resume

Name	SANJEEV SINGH
Date of Birth	10.01.1972
Areas of specialization	Power Electronics & Drives, Power Quality and Energy Management
Post-Doctoral Research	Grid Integration of Renewable Energy Systems, at Electrical Engineering Department, Ecole de Technology Superiere (ETS) Montreal, Canada from 2nd Dec. 2016 to 28th June 2017.

Academic Background:

- Graduation (Bachelor of Engineering) in Electrical Engineering from Government Engineering College Rewa, MP (APS University, Rewa, MP), India in December 1993.
- Master of Technology in Energy Management from School of Energy and Environmental Studies, Devi Ahilya Vishwa Vidyalaya Indore, M.P., India in Jan 1997.
- Ph.D. from Indian Institute of Technology Delhi, India in May 2011.

Professional Background: Professional experience of more than 25 years as mentioned below.

- Professor, Electrical Engineering Department, Maulana Azad National Institute of Technology Bhopal from 24th Feb 2020 onwards.
- Associate Professor, Electrical Engineering Department, Maulana Azad National Institute of Technology Bhopal, from 10th Jan. 2019 to 23rd Feb 2020.
- Associate Professor, Electrical and Instrumentation Engineering Department, Sant Longowal Institute of Engineering and Technology Punjab, from 22nd Nov. 2013 to 9th Jan. 2019.
- Assistant Professor, Electrical and Instrumentation Engineering Department, Sant Longowal Institute of Engineering and Technology Punjab, from 6th Jan. 2000 to 21st Nov. 2013.
- Project Officer, North India Technical Consultancy Organization limited, Chandigarh from 15th April 1997 to 31st Dec. 1999.

Selected Publications:

1. Paramjeet Singh Jamwal, Sanjeev Singh and Shailendra Jain, " Fault-tolerant operation of the cascaded H-bridge three-level inverter for electric vehicle application," in International Journal of Ambient Energy, 2023.
2. Rheesabh Dwivedi, Sanjeev Singh and Bhim Singh, "Design and development of three-phase EV charger based on the integration of voltage-oriented pulse width modulation control and water cycle algorithm fractional-order PI controller," in International Journal of Ambient Energy, vol.44, no.1, pp.157-170, 2023.
3. Vinay Kumar, Sanjeev Singh and Shailendra Jain, "Single-phase cross-connected sources asymmetric T-type multilevel inverter with fault tolerant capabilities," in *Int. J. Power Electronics*, Vol. 17, No. 3, pp.280-298, 2023.
4. Siddhant Gudhe, Sanjeev Singh, Miloud Rezkallah and Ambrish Chandra, "Dynamic Control of Traction Motor for EV Fed via Dual Source Inverter with a Two Battery System," in Energies 2023, 16, 1754.
5. M. Rezkallah, Félix Dubuisson, Sanjeev Singh, Bhim Singh, Ambrish Chandra, Hussein Ibrahim and Mazen Ghandour, "Coordinated Control Strategy for Hybrid off-Grid System Based on Variable Speed Diesel Generator," in IEEE Trans. Ind. Appl., vol. 58, no. 4, pp. 4411-4423, July-Aug. 2022.
6. M. Rezkallah, Sanjeev Singh, B. Singh, A. Chandra, H. Ibrahim and M. Ghandour, "Implementation of Two-Level Coordinated Control for Seamless Transfer in Standalone Microgrid," in IEEE Trans. Ind. Appl., vol. 57, no. 1, pp. 1057-1068, Jan.-Feb. 2021.
7. M. Rezkallah, H. Ibrahim, F. Dubuisson, A. Chandra, Sanjeev Singh, B. Singh and M. Issa, "Hardware Implementation of Composite Control Strategy for Wind-PV-Battery Hybrid Off-Grid Power Generation System," in Clean Technologies, vol. 3, no.4, pp 821-843, Dec. 2021.
8. M. Rezkallah, Sanjeev Singh, A. Chandra, B. Singh and H. Ibrahim, "Off-Grid System Configurations for Coordinated Control of Renewable Energy Sources," in Energies, vol.13, no.18, 4950, pp.1-25, Sept. 2020.

9. M. Rezkallah, Sanjeev Singh, A. Chandra, M. Saad, B. Singh, M. Tremblay and H. Geng, "Comprehensive Controller Implementation for Wind-PV-Diesel based Standalone Microgrid," IEEE Trans. Industry Applications, vol. 55, no. 5, pp. 5416-5428, Sept.-Oct. 2019.
10. J. Singh Maan, Sanjeev Singh and A. Singh, "Impact of Harmonics on Power Transformer Losses and Capacity Using Open DSS", International Journal of Emerging Electric Power Systems, vol. 20, no. 4, pp. August 2019.
11. Jaspreet Singh, Sanjeev Singh and Amanpreet Singh, "Distribution transformer failure modes, effects and criticality analysis (FMECA)", Engineering Failure Analysis, vol.99, pp.180-191, May 2019.
12. M. Rezkallah, Ambrish Chandra, Bhim Singh and Sanjeev Singh, "Microgrid: Configurations, Control and Applications," IEEE Trans. Smart Grid, vol. 10, no. 2, pp. 1290-1302, March 2019.
13. Ruchi Agarwal and Sanjeev Singh, "Controller Optimization Algorithm for a 12-pulse Voltage Source Converter based HVDC System," Journal of Electrical Engineering and Technology (JEET), vol. 12, no. 2, pp. 643-653, 2017.
14. Umesh Chand Rathore and Sanjeev Singh, "Experimental Evaluation of Harmonics Mitigation Transformers for PQ control in 3ph SEIG feeding Isolated Domestic Load," International Journal of Electrical Engineering, vol. 24, no. 6, pp. 247-256, 2017.
15. Ruchi Agarwal and Sanjeev Singh, "Optimized Controller Design for a 12-Pulse Voltage Source Converter based HVDC System," Springer Journal of Institution of Eng. India Ser. B, vol. 98, no. 6, pp. 567-577, Dec. 2017.
16. Ruchi Agarwal and Sanjeev Singh, "Power Quality Control of Voltage Source Converter based HVDC System using Particle Swarm Optimization," International Journal of Power and Energy Conversion, vol.8, no. 4, pp.435 – 452, Sep. 2017.
17. Sachin Singh and Sanjeev Singh, "Position Sensorless Control for PMBLDC Motor Drive using Digital Signal Processor," Journal of Circuits Systems and Computers (JCSC), vol. 25, no. 7, July 2016.
18. Sanjeev Singh and Bhim Singh, "Optimized Passive Filter Design using Modified Particle Swarm Optimization Algorithm for a 12-Pulse Converter fed LCI-Synchronous Motor Drive," IEEE Trans. Ind. Appl., vol.50, no.4, pp.2681-2689, July-Aug. 2014.
19. Sanjeev Singh and Bhim Singh, "A Voltage Controlled PFC Cuk Converter based PMBLDCM Drive for Air-Conditioners," IEEE Trans. Ind. Appl., vol. 48, no. 2, pp 832-838, Mar./April, 2012.
20. Sanjeev Singh and Bhim Singh, "A PFC Based PMBLDCM Drive for Air-Conditioner using Half-Bridge Buck Converter," International Journal on Energy Technology and Policy (IJETP), vol.8, nos. 3/4/5/6, pp 255-266, 2012.
21. Sanjeev Singh and Bhim Singh, "Particle Swarm Optimization for Power Quality Improvement of A 12-pulse Rectifier-Chopper fed LCI -Synchronous Motor Drive," International Journal of Intelligent Systems Technologies and Applications (IJISTA), Vol.11, No.3/4, pp.267 – 285, 2012.
22. Sanjeev Singh and Bhim Singh, "A PFC Bridge Converter for Voltage Controlled Adjustable Speed PMBLDCM Drive," Journal of Electrical Engineering and Technology (JEET), vol. 6, no. 2, pp. 215-225, Apr. 2011.
23. Sanjeev Singh and Bhim Singh, "An Adjustable Speed PMBLDCM Drive for Air Conditioner using PFC Zeta Converter," International Journal of Power Electronics (IJPElec), vol. 3, no. 2, pp.171-188, Apr. 2011.
24. Bhim Singh, Sanjeev Singh, Ambrish Chandra and Kamal Al-Haddad, "Comprehensive Study of Single-Phase AC-DC Power Factor Corrected Converters with High Frequency Isolation," IEEE Trans. Industrial Informatics, vol. 7, no. 4, pp. 540-556, Nov. 2011.
25. Bhim Singh, Sanjeev Singh and Hemanth Chender S.P., "Harmonics Mitigation in LCI fed SM Drives," IEEE Trans. Energy Conversion, vol.25, no.2, pp.369-380, June 2010.
26. Bhim Singh, Sanjeev Singh and Hemanth Chender S.P., "Power Quality Improvements in LCI fed SM Drives," IET Power Electronics, vol.3, no.3, pp.411-428, May 2010.
27. Sanjeev Singh and Bhim Singh, "PFC buck-boost Converter Based Voltage Controlled Adjustable Speed PMBLDCM Drive for Air-Conditioning," European Transaction on Electric Power (ETEP), Vol. 21, Issue 1, pp.424-438, April 2010.
28. Sanjeev Singh and Bhim Singh, "Single-Phase SEPIC Based PFC Converter for PMBLDCM Drive in Air-Conditioning System," Asian Power Electronics Journal (APEJ), vol.4, no.1, pp.16-21, April 2010.
29. Bhim Singh and Sanjeev Singh, "Single Phase PFC Topologies for Permanent Magnet Brushless DC Motor Drives," IET Power Electronics, vol. 3, no. 2, pp.147-175, March 2010.

30. Bhim Singh and Sanjeev Singh, "State-of-Art on Permanent Magnet Brushless DC Motor Drives," Journal of Power Electronics, vol. 9, no. 1, pp.1-17, 2009.

National Journals / Magazines:

1. Sanjeev Singh, "Energy Efficiency Improvement in Lighting Systems: concerns and options," *Lighting India Magazine*, vol.8, no.2, pp. 18-20, Mar/Apr. 2013.
2. Sanjeev Singh, "Energy efficiency improvement in Air-Conditioning system," *Cooling India Magazine*, vol.8, no.8, pp. 76-81, Nov. 2012.
3. Bhim Singh and Sanjeev Singh, "An Improved Power Quality Drive for Air-Conditioners," *Cooling India Magazine*, vol.7, no.1, pp. 24-38, Jan.-Feb. 2011.
4. Sanjeev Singh and Bhim Singh, "Modelling, Simulation and Design of Single-stage PFC Forward Boost Converter based Adjustable Speed PMBLDCM Drive for Small Air-conditioner," *IE (I) Journal-EL*, vol. 91, pp.55-62, Sep. 2010.

International Conferences:

1. P. S. Jamwal, Sanjeev Singh and S. Jain, "Three-Level Inverters for Induction Motor Driven Electric Vehicles," *in Proc. IEEE ICEPE*, Shilong, India, Mar. 2021, pp. 1-6.
2. Shiv Pratap Singh Rajawat, U. K. Kalla and Sanjeev Singh, "A Comprehensive Study on Torque ripple Reduction in Sensorless PMBLDCM Drive," in Proc. IEEE SEFET, Hyderabad, India, Jan. 2021, pp. 1-6.
3. Shiv Pratap Singh Rajawat, U. K. Kalla and Sanjeev Singh, "A New BEMF Technique for the Sensorless Control of PMBLDC Motor Drive," in Proc. IEEE SEFET, Hyderabad, India, Jan. 2021, pp. 1-6.
4. S. Kumar, B. Singh, U. Kalla, Sanjeev Singh and A. Mittal, "Power Quality Control of Small Hydro-PV Array and Battery Storage Based Microgrid for Rural Areas," in Proc. IEEE SEFET, Hyderabad, India, Jan. 2021, pp. 1-6.
5. U. K. Kalla, P. Kumar, K. L. Agarwal, S. Singh and S. Kumar, "A State of Art and Comprehensive Study of Renewable Energy Systems Based on Three-Phase Self Excited Induction Generator Feeding SinglePhase Loads," in Proc. IEEE SEFET, Hyderabad, India, Jan. 2021, pp. 1-6.
6. Sanjeev Singh, S. Kumar, U. K. Kalla, A. Chandra and M. Saad, "Optimization of Rooftop PV System Deployment for LV Distribution Network," in Proc. IEEE SEFET, Hyderabad, India, Jan. 2021, pp. 1-8.
7. U. K. Kalla, K. Lata Agarwal, N. Bhati, Sanjeev Singh, S. Kumar and B. Singh, "Battery Powered LSB Converter Fed BLDC Drive System for Electric Vehicle Applications," *in Proc. IEEE INDICON*, New Delhi, India, Dec. 2020, pp. 1-6.
8. M. Rezkallah, A. Chandra, S. Singh, B. Singh, H. Ibrahim and M. Gandour, "Coordinated Control Strategy for Hybrid Off-Grid System based on Variable Speed Diesel Generator," in Proc. IEEE PEDES, Jaipur, India, Dec. 2020, pp. 1-6.
9. S. Kumar, B. Singh, S. Singh and U. K. Kalla, "Multiple Sinusoidal Signal Integrators and Unintentional Islanding Controlled PV-BES System at Unbalanced Grid Conditions," in Proc. IEEE PEDES, Jaipur, India, Dec. 2020, pp. 1-5.
10. Ranjan Kumar, Sanjeev Singh, Rishi K Singh and R D Kulkarni, "DSP Controlled Twelve-pulse 24 kA Thyristorised AC-DC Converter for Nuclear Application," in Proc. IEEE ICPECTS, Chennai, India, Dec 2020, PP.1-6.
11. S. Singh, S. Kumar, U. K. Kalla and Sanjeev Singh, "Reduced Sensor PMBLDC Motor Drive with Power Factor Correction and Speed Control," in Proc. IEEE PEREA, Kannur, India, Nov 2020, pp. 1-6.
12. Ranjan Kumar, Sanjeev Singh, and Rishi K Singh, "Impact Analysis of Inter-phase Transformer on A Double Star AC/DC Controlled Converter," in Proc. IEEE CISPSSE, Keonjhar, India, July 2020, PP.1-6.
13. R. Dwivedi, Sanjeev Singh and B. Singh, "A Single Phase Modified Bridgeless Single Ended Primary Induction Converter Based EV Battery Charger with Enhanced Power Quality," in Proc. IEEE SCES, Prayagraj, India, July 2020, pp. 1-6.
14. V. Kumar, S. Singh and S. Jain, "Fault Tolerant T-Type Cross Connected Source Nine Level Inverter," in *Proc. IEEE PIICON*, SONEPAT, India, Feb-Mar. 2020, pp. 1-6.
15. M. Rezkallah, S. Singh, A. Chandra, B. Singh, M. Tremblay, M. Saad and H. Ibrahim, "Design and Implementation of Decentralized Control for Distributed generation based Off-grid System," in *Proc.* IEEE PESGRE, *Cochin, India*, Jan. 2020, pp.1-6.
16. M. Rezkallah, A. Chandra, M. Saad, M. Tremblay, Bhim Singh, Sanjeev Singh and H Ibrahim, "Composite Control Strategy for a PV-Wind-Diesel based Off-Grid Power Generation Sy stem Supplying Unbalanced Non-Linear Loads," in *Proc. IEEE IAS Annual Meeting*, Portland, OR, 2018, pp. 1-6.

17. M. Rezkallah, A. Chandra, M. Tremblay, Sanjeev Singh, Bhim Singh and H Ibrahim, "Control of Standalone Microgrid for Mine Site," in *Proc IEEE CCECE*, Quebec, Canada, 2018, pp. 1-6.
18. M. Rezkallah, Sanjeev Singh, A. Chandra, M. Saad, Bhim Singh, M. Tremblay and H Geng, "Real-time hardware testing, control and performance analysis of hybrid cost-effective wind-PV-diesel standalone power generation system," in *Proc IEEE Industry Appl. Society Annual Meeting*, Cincinnati, OH 2017, pp. 1-8.
19. S. Benhalima, A. Chandra, M. Rezkallah and Sanjeev Singh, "New control approach for high performance of offshore wind farm under DC fault using three-level NPC VSC-HVDC and DC chopper," in *Proc IEEE Industry Applications Society Annual Meeting*, Cincinnati, OH, 2017, pp. 1-7.
20. Ruchi Agarwal and Sanjeev Singh, "Power Quality Improved 18-pulse VSC based BTB HVDC System with Reduced Current Sensors," in *Proc. IEEE PIICON Bikaner* India, Nov. 25-27, 2016, pp.1-5.
21. Sachin Singh and Sanjeev Singh, "Complete Position Sensorless Control of PMBLDC Motor for Variable Speed Applications," in *Proc. IEEE PIICON Bikaner* India, Nov. 25-27, 2016, pp.1-6.
22. Umesh C Rathore and Sanjeev Singh, "Designing of Electronic Load Controller for 3-φ SEIG used in Constant Power Prime-Mover Driven Pico/Micro Hydro Power Generation System," in *Proc. IEEE PIICON Bikaner* India, Nov. 25-27, 2016, pp.1-6.
23. Umesh C Rathore and Sanjeev Singh, "Simulated Performance Evaluation of SEIG with Electronic Load Controller used in Renewable Energy Conversion System," in *Proc. IEEE IICPE Patiala* India, Nov. 17-19, 2016, pp.1-6.
24. Saptarshi Pal Choudhury and Sanjeev Singh, "Power Quality Improvement in a Vector Controlled PMSM Drive using Non-Isolated PFC Zeta Converter," in *Proc. IEEE IICPE Patiala* India, Nov. 17-19, 2016, pp.1-6.
25. Sachin Singh, Kanwar Pal and Sanjeev Singh, "Single Current Sensor based Control Scheme for Position Sensor-less Starting and Running of PMBLDC Motor," in *Proc. IEEE ITEC* Chennai India, Aug. 27-29, 2015, pp.1-4.
26. Kanwar Pal, Saurabh Shukla and Sanjeev Singh, "Single Current Sensor PMBLDC Motor Drive with Power Quality Controller for Variable Speed Variable Torque Applications," in *Proc. IEEE ICEEI* Bali Indonesia, Aug. 10-11, 2015, pp.1-6.
27. Ruchi Agarwal and Sanjeev Singh, "Harmonic mitigation using multipulse voltage source converter based HVDC system," in *Proc. IEEE ICEEE,* Greater Noida (India), Mar. 2015, pp.1-6.
28. Umesh C Rathore, Sachin Singh and Sanjeev Singh, "Virtual experimentation for enhancing conceptual understanding and innovation in electrical engineering," in *Proc. IEEE MOOC, Innovation and Technology in Education (MITE),* Dec. 2014, pp.142-147.
29. Sachin Singh and Sanjeev Singh, "Power Quality Improvement of a Position Sensorless Controlled PMBLDCM Drive using Boost Converter," in *Proc. IEEE IICPE,* Kurukshetra (India), Dec. 2014, pp.1-6.
30. Umesh C Rathore and Sanjeev Singh, "Power Quality Control of SEIG based Isolated Pico Hydro Power Plant Feeding Non-Linear Load," in *Proc. IEEE IICPE,* Kurukshetra (India), Dec. 2014, pp.1-5.
31. Saurabh Shukla and Sanjeev Singh, "Improved power quality PMBLDC motor drive for constant speed variable torque load using non-isolated SEPIC converter," in *Proc. IEEE INDICON,* Pune (India), Dec. 2014, pp.1-6.
32. Ruchi Agarwal and Sanjeev Singh, "Harmonic mitigation in voltage source converters based HVDC system using 12-pulse AC-DC converters," in *Proc. IEEE INDICON,* Pune (India), Dec. 2014, pp.1-6.
33. Umesh C Rathore and Sanjeev Singh, "Isolated 3-phase self-excited induction generator in pico-hydro power plant using water pump load in remote mountainous region of Himalayas," in *Proc. IEEE Global Humanitarian Technology Conference-South Asia Satellite (GHTC-SAS),* Kerala (India), Sep. 2014, pp.40-44.
34. Sachin Singh and Sanjeev Singh, "A control scheme for position sensor less operation of PMBLDC Motor from standstill to rated speed," in *Proc. IEEE CIEC,* Kolkata (India), Jan-Feb., 2014, pp. 426-430.
35. Umesh C Rathore and Sanjeev Singh, "Performance Evaluation of Isolated 3-Phase Self-Excited Induction Generator for Remote Mountainous Region of Himalayas," in *Proc. IEEE CIEC,* Kolkata (India), Jan-Feb., 2014, pp. 421-425.
36. Sanjeev Singh and Bhim Singh, "PFC Buck Converter Fed PMBLDCM Drive for Low Power Applications," in Proc. IEEE 5th POWER INDIA Conference 2012, Murthal, India, Dec. 19-22, 2012
37. Sanjeev Singh and Bhim Singh, "Improved Power Quality Flyback Converter fed PMBLDCM Drive," *in Proc. IEEE Int. Conf. on Power Electronics (IICPE) 2012*, Delhi, India, Dec. 06-08, 2012.
38. Sanjeev Singh and Bhim Singh, "PQ Improved PMBLDCM Drive for Adjustable Speed Application with Reduced Sensor Buck-Boost PFC Converter," *in Proc. IEEE ICETET,* Mauritious, Nov. 2011, pp.180-184.

39. Sanjeev Singh and Bhim Singh, "PFC Push-Pull Converter for PMBLDCM Driven Air-Conditioner," in Bhim Singh and Sanjeev Singh, "Isolated Zeta PFC Converter Based Voltage Controlled PMBLDCM," *in Proc. IEEE IICPE-10*, New Delhi, Jan 2011, pp.1-6.
40. Sanjeev Singh and Bhim Singh, "Power Quality Improvement in LCI fed SM Drives using a 12-Pulse AC/DC Converter with Optimized Passive Filter," *in Proc. IEEE PEDES 2010*, New Delhi, Dec 2010, pp.1-6.
41. Sanjeev Singh and Bhim Singh, "Voltage Controlled PFC Zeta Converter based PMBLDCM Drive for an Air-Conditioner," in *Proc. IEEE ICIIS*, NIT Surathkal (India), July- August, 2010, pp.550-555.
42. Sanjeev Singh and Bhim Singh, "A Power Factor Corrected PMBLDCM Drive for Air-conditioner Using Bridge Converter," in *Proc. IEEE PESGM 2010*, Minnesota (USA), July 2010, pp.1-6.
43. Sanjeev Singh and Bhim Singh, "A Voltage Controlled Adjustable Speed PMBLDCM Drive using A Single-Stage PFC Half-Bridge Converter," in *Proc. IEEE APEC 2010*, California (USA), Feb. 2010, pp.1976-1983.
44. Sanjeev Singh and Bhim Singh, "PQ Improvement of PMBLDCM Driven Air-conditioner using a Single-Stage PFC Boost Bridge Converter," in *Proc. IEEE INDICON*, Gandhinagar (India), Dec. 2009, pp.333-338.

National Conferences:

1. Paramjeet Singh Jamwal, Sanjeev Singh and Shailendra Jain, "Improved Power Quality Buck-Boost Converter fed PMSM Drive," in Proc. *SLIETCON 2019*, Chandigarh, Mar. 1-2, 2019, PP.1-6.
2. Munesh Kumar Singh, Sachin Singh and Sanjeev Singh, "Experimental Evaluation of Solar Photovoltaic based PMBLDCM Drive for Low Power Application", in *Proc. National Conf. on Advanced Computational Methods in Electrical Engineering*, Mar. 25-26, 2016, SLIET Longowal, Punjab, pp.1-4.
3. Kanwar Pal and Sanjeev Singh, "Single Current Sensor based Speed Controller for PMBLDC Motor Drive in Pumping Application", in *Proc. National Conf. on Advanced Computational Methods in Electrical Engineering*, Mar. 25-26, 2016, SLIET Longowal, Punjab, pp.1-4.
4. Jaspreet Singh, Sanjeev Singh and Amanpreet Singh, "Transformer failure analysis: reasons and methods", in *Proc. National Conf. on Advanced Computational Methods in Electrical Engineering*, Mar. 25-26, 2016, SLIET Longowal, Punjab, pp.1-6.
5. Paramjeet Singh Jamwal and Sanjeev Singh, "Comparative Analysis of Hysteresis and PWM Current Controllers For PMSM Drive," *in Proc. National Conf on Advances in Power and Control*, Manav Rachana International University Faridabad, Aug. 28, 2015, pp.38-42.
6. Munesh Kumar Singh and Sanjeev Singh, "Design and simulation of boost converter for SPV fed water pumping system," *in Proc. National Conf on Advances in Power and Control*, Manav Rachana International University Faridabad, Aug. 28, 2015, pp. 52-57.
7. Rinku K Chandolia and Sanjeev Singh, "Power Quality improvement control using isolated CUK converter for PMBLDCM drive," *in Proc. National Conf on Advances in Power and Control*, Manav Rachana International University Faridabad, Aug. 28, 2015, pp. 110-117.
8. Sanjeev Singh and Bhim Singh, "A Voltage Controlled Variable Speed PMBLDCM Drive for Air-Conditioner using A Single-Stage PFC Forward Converter," *in Proc. NPSC*, Osmania University Hyderabad, Dec. 2010, pp.417-422.
9. Sanjeev Singh and Bhim Singh, "Voltage Controlled Push-Pull Converter based PFC Drive for PMBLDC Motors," in *Proc. NPEC*, IIT Roorkee (India), June 2010, pp.1-8.
10. Rambabu B. and Sanjeev Singh, "Low cost, Energy efficient DC Motor Control using Microcontroller and Digital Signal Processor," in *Proc. NCDDM-07*, March 2007, SLIET Longowal, pp.374-379.
11. Sachin Singh, Manoj Kumar and Sanjeev Singh, "Simulation and Implementation of Single Switch AC-DC Converter with Uniform PWM Technique for Universal / DC Motor Control," in *Proc. NSC-06*, Nov 2006, National Institute of Oceanography, Goa, pp.1-4.
12. Sanjeev Singh and V.K. Jain, "Energy Conservation in Hydro Power Plants," in *Proc. National Workshop on Emerging Scenario in Hydro-Thermal Power*, September 15, 2004, SLIET Longowal, Punjab, pp.127-130.
13. Sanjeev Singh, J.S. Dhillon and D.P. Kothari, "Evolutionary Search Method for Load Flow Problem," in *Proc. 27th National Systems Conference (NSC-2003)*, December 17-19, 2003, IIT Kharagpur, pp.393-396.
14. Sanjeev Singh and S.P. Singh, "Irrigation Load Management," in *Proc. 12th National Power Systems Conference (NPSC 2002)*, December 27-29, 2002, IIT Kharagpur, pp.4.
15. Sanjeev Singh, Charanjiv Gupta and J.S Aujla, "Switching Transients and Harmonic Pollution," in *Proc. 16th National Convention of Electronics and Telecom. Engineers*, March 30-31, 2001, SLIET Longowal, pp.67-69.
16. Sanjeev Singh, V.K.Jain, and Amanpreet Singh, "Electric Motors in Energy Conservation Perspective,", in *Proc. NSC-2000*, December 2000, ISRO Satellite Center, Bangalore, pp.394-401.

Book Authored:

- Title of Book: Electric Vehicle Components And Charging Technologies: Design, modeling, simulation and control, (ISBN 978-1839536717), Year of Publication: Dec. 2023, Publisher: Institute of Electrical Engineers (IET), UK;
- Title of Book: Flexible Electronics for Electric Vehicles: Select Proceedings of FlexEV-2021, Volume 863 of Lecture Notes in Electrical Engineering (ISBN 978-98-1190-588-9), Year of Publication: Oct. 2022, Publisher: Springer Nature;
- Title of Book: Energy Management, (ISBN 978-93-5014-101-4), Year of Publication: 2016, Publisher: S.K. Kataria and Sons, New Delhi;

Book Chapter Authored:

- Title of Chapter: DC Motor Drives, in the book "Modeling, Simulation and Control of Electrical Drives," IET Press, (ISBN:9781785615870), 2019.
- Title of Chapter: Renewable Energy Sources and Small Hydro Power Scenario in Mountainous Regions of Himalayas, in the book "Smart Electrical Grid System'" CRC Press (ISBN:9781003242277), 2022.

R&D Projects:

- Completed a project as principal investigator (PI) titled "Development of reliable, efficient and cost effective controller for permanent magnet brushless DC motor drive with reduced sensors and improved power quality at utility mains", amounting Rs.15 Lakhs by AICTE New Delhi under research promotion scheme (RPS) during 2013-2016.
- Completed a project as Co-PI titled "Design and Implementation of single phase Microgrid using Renewable energy sources", amounting Rs.62.99 Lakhs by SERB, DST New Delhi under EMR during 2019-2022
- Completed a project as Co-PI titled "Development of Fast Bidirectional Battery Chargers for Electric Vehicles Considering Power Quality Aspects", amounting Rs.7.4 Lakhs by MPCST Bhopal during 2022-2023.
- Ongoing project as Chief Investigator (CI) titled "Design and Development of Grid Interactive Residential Rooftop PV System with Islanding/Resynchronization Capabilities", amounting Rs.41.21 Lakhs by NaMPET (CDAC) Thiruvananthapuram during 2022-2024

Patents:

- Granted Patent No. 394299 titled "Power Factor Correction (PFC) based FLYBACK Converter for Permanent Magnet Brushless DC Motor Drive for Fan Applications".

Thesis Supervision:

Ph.D.: Awarded: 09, Ongoing:03; **M.Tech.: Awarded: 36, Ongoing: 01;**

Training Programs Organized Recently:

- One-week FDP on "Electric Vehicle Technologies and Advances" during 31st August - 4th September 2020, in online mode sponsored by RGPV Bhopal.
- One-week self-sponsored Short Term Training Program (STTP) on "Research Trends in Energy and Power Systems," in online mode at MANIT Bhopal during 19th to 23rd October 2020.
- One-week ATAL sponsored Faculty Development Program (FDP) on "Electric Vehicles" in online mode at MANIT Bhopal during 28th Dec. – 1st Jan. 2021.
- ATAL FDP on "Innovations and Challenges of Energy Storage Technologies" during 10th – 21st Oct. 2022 in online and offline mode (One week each) at MANIT Bhopal.

Membership of Professional Societies:

1. Senior Member - Institute of Electrical and Electronics Engineers (IEEE USA)
2. Fellow - Institution of Engineers (India) (IEI),
3. Fellow – Institute of Electronics and Telecommunication Engineers (IETE), India,
4. Life Member - System Society of India (SSI),
5. Life Member - Indian Society for Technical Education (ISTE).

ANOOP SINGH

Disruptive Innovation (Advanced Technology), New Product Development Executive

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Executive summary: Results oriented & self- motivated COE Executive with more than two decade of Leadership, Management, and Engineering experience in managing programs and executing a nos. of disruptive Innovation, NPI/NPD, VE, PCTO/MCTO and QI projects in mostly ECD products for different consumer durable companies including MNCs and Indian manufacturers with high level of execution and Engineering skill sets.

Proven record in supporting front end sales team with commercialization of various NPD projects, advanced technology development and Disruptive innovation.

Good track record in understanding customer requirements (Locally / globally) through market intelligence & in enhancing products innovation to provide end to end solution.

Strong track record in working with cross-functional team including Local & global R&D, Sales & Marketing, Vendors, Finance, Service and manufacturing sites in executing the new product programs.

Solid experience in preparing business case for new & cost out projects, writing opportunity brief and elevator speech for new products and in managing the complete life cycle of new product according to overall strategy of company.

Good exposure in maintaining effective balance between big-picture, Strategic thinking and a focus on the details necessary for program execution.

Proven ability to coordinate with Senior Mgmt. for conflict resolution, Annual performance reviews and evaluation of employees involved in PDP

Holder of 15 Patents/ Applications in USPTO and IPO (One patent granted by USPTO) in different appliances such as Washing Machine, Refrigerator, Ice Maker, Fans, Water Heater and mixer Grinder Category.

Proficient in developing Sheet metal, Plastic, casting and Electro Mechanical components for assemblies and sub-assemblies. Good understanding of various manufacturing & validation processes associated with sheet metal, plastic and cast parts.

Good exposure in exploring new Engineering solutions and using simulation (CEA/CFD analysis) to have fast execution during new technology development.

Proficient and Certified Expert in various domains like Project Management, Product Development, FMEA, Design for Safety, Robust Product Design.

Professional Experience:

V-Guard Industries Ltd (Gurgaon): Sr. General Manager (MED R&D Head - WH) since Feb'21

Major activities:

- Leading team of 20 + members in R&D to handle 11 different portfolios of heating product
- Driving business with advanced technology development through engineering analytical and Simulation (CEA/CFD)
- Monitor part & Product development with suppliers to develop new product platform & technology exploration by building expertize in different product and testing methodologies.

Crompton Greaves Consumer Electrical Limited (Mumbai): General Manager (Innovation and R&D Head for Appliances) (Sep'2019 – Jan'21)

Major activities:

- Leading Appliances innovation and R&D Team (Including WH, ACs, SDA and Iron & RH).
- Delivered ~40 NPD projects with contribution of more than 25% in overall Appliances Business for FY 2020-21..
- Developed Lab infrastructure and Self-sufficient validation team for 100% validation in-house.
- Work on critical innovation program & generate new innovative ideas to have Innovation pipelines projects with technology road map.
- Driving business with advanced technology development through engineering analytical and Simulation (CEA/CFD)
- Co-ordinate projects with Customer, Vendor & internal/external expertise to build and drive innovation projects. Monitor part & Product development with suppliers to develop new product platform & technology exploration by building expertize in different product and testing methodologies.

Havells India Ltd (Noida): Assistant General Manager (Innovation Head for ECD Business unit) (Feb'2017 to Sep'19)

Major activities:

- Led disruptive Technological Innovation projects for Electronic consumer durables (Including WH, ACs, SDA and Fans) and applied for 11 patents in IPO.
- Work on critical innovation program & generate new innovative ideas to have Innovation pipelines projects with technology road map.
- Supported business with advanced technology development through engineering analytical and Simulation (CEA/CFD)
- Developed Out-sourced Technology portal (SOCH.HAVELLS.COM) to have disruptive solutions from all consumers, employees, Dealers and channel partners to solve unmet needs of consumers.
- Co-ordinated projects with Customer, Vendor & internal/external expertise to build and drive innovation projects. Monitor part development with suppliers to develop new product platform & technology exploration by building expertize in different product and testing methodologies.
- Validated concept by fast execution of making prototype (3D printing) and design verification through testing.

GE India technology Centre Ltd (Bangalore): Lead Engineer / Technology Lead (Apr'2011 to Jan'2017)

Major activities:

- Work on critical innovation program & generate new innovative ideas for the Projects. (Applied 3 patents in USPTO (1 Granted/ 2 Published)
- Co-ordinate projects with Customer, Vendor & internal/external expertise to build and drive innovation projects to meet customer (Stake holders) requirements.
- Monitor part development with suppliers to develop new product platform & technology exploration by building expertize in different product and testing methodologies.
- Analyse Technology trends to improvise product portfolio and Understand Customer's unmet needs & business new technology needs and make 3 years roadmap for Ideas/ Projects.
- Worked on different Appliances such as Washer, Dryer, Range, Oven, Water heater, Water purifier, Refrigerator and Dishwasher.
- Do risk assessment, create project plan and conduct feasibility study of parts (Sheet metals / Plastic) & assemblies of electromechanical components.
- Validation of concept by fast execution of making prototype (3D printing) and design verification through testing.

Videocon Industries Ltd (Gurgaon): Sr. Manager – India Project / R&D Manager (Sep'2009 to Apr'2011)

Major activities:

- Developed a range of microwave oven & Small Home Appliances for brand like Videocon, Kenstar, Electrolux and Kelvinator by coordinating with global sourcing (Vendors) & Quality team situated in China and Local manufacturing team (Aurangabad)
- Lead the design team and design control process from requirements development, design planning to design transfer and in the development of verification and validation planning and execution for NPIs and released products.
- Managed all aspects of the products life cycle starting with the detailed planning phase until the product is terminated.
- Achieved all design objectives required to meet customer and business needs, including: feature and functionality, quality, reliability, serviceability, manufacture-ability, regulatory, compliance and cost.
- Studied global technology trends, product innovations, competition tracking and market share analysis and established the strategic road map.
- Kept all engineering expenses, P&E budgeting, Timeliness on the track related to PDP
- Prepared one year, 3 years business plan as per company strategy with sales & Marketing.
- Presented monthly and quarterly to VP, CEO & COO on Financial & business aspects.
- Conducted Cost calculation for different sheet metals & plastic parts and identified tooling requirements and performed tool costing.
- Developed product level Integration requirements, Test scenarios, Alpha and Beta plans.
- Executed a no. of cost saving projects and recommended design modifications based on test results / customer requirements.

Whirlpool of India Ltd (Gurgaon/Pondicherry): Manager – New Product Development (Aug'2005 to Aug'2009)

Worked with **Whirlpool,** HO- Gurgaon as **Product Development Marketing Manager for Refrigerator** category and as New Product Design and Development Manager (Team Leader) for MWO & Built-In Kitchen (Modular Kitchen) products like Hobs, Hoods, Oven & MWO Business.

Major activities:

- New Product Planning, Project management and prepared 3 Years Product road map plan for new products with business plan including investment and ROI.
- Conducted Competitor Analysis, Product & Price analysis for different segments of the market to get market intelligence.
- Conducted market study on product –Refrigerator and MWO and Mapped Market and design trends.
- Interaction with cross functional team for identification and generation of new models.
- Coordination with Senior Mgmt. for conflict resolution, Annual performance reviews and evaluation of employees involved in PDP.
- Keeping Track record of engineering expenses related to PDP and maintained design data base.
- Review and analysis of market changes to effectively forecast and create annual plans and budgets.

- Prepared P/L Sheet & business case for all new products, writing the opportunity brief and Elevator Speech of each product.
- Cost innovation (CI) activities through Standardisation and Quality Improvement through 6sigma, FMEA, PPAP & C2C Process.
- Participated in Design review & follow up with all CFT and Suppliers for implementation to meet the project timeline.
- Identified vendors and executed sheet metals parts development with tooling requirements.
- Integrated mechanical systems, electronic systems understanding interactions and dependencies for MWOs and Refrigerators.
- Defined configurations to meet feature, performance, and regulatory requirements throughout the model line.

LG Electronics Ltd (Gr. Noida): Sr. Engineer – Microwave oven R&D (May'2002 to July'2005)

Major activities:

- Designed & Developed 30 L & 26L microwave ovens and Designed System & Sub System level Mechanical/ Plastic and Electromechanical Parts
- Designed Cavity of Microwave oven (Sheet metal Part) and developed Tools at Vendor end.
- Demonstrated Technical capability in product and Program Integration activities. Controlling of BOM /ECNs for all models (New models/ Design change/ Cost out projects).
- Estimation of Cost for Sheet metals/ plastic parts & Products. Highly indulge in Cost innovation (CI) activities and in Quality Improvement through Six Sigma & TDR.
- Providing of solution for manufacturing related problems with FMEA & Part Quality and maintaining of Q + system.
- Localization of imported parts & Development of new vendors.

VXL Technologies Ltd (Faridabad): Engineer – Design & Development (June'2000 to May'2002)

Major activities:

- Designed a nos. of Microwave components like connector, adapter & termination. Involved in implementation of ISO/TQM System.
- Designed CUTTING TOOLS, Jigs & Fixtures and assembly tools required for new product introduction and cost out projects.
- Development of above mentioned tools & M/W Components like connector, adapter, termination, dummy loads, circulator and isolator, SPDT Switch & Low band pass filter for SPACE APPLICATION CENTER & DRDO.
- Implementation of ECNs through moulds modifications and maintenance of drawings.

Professional skills:

- NAR **Opex Six Sigma Black Belt** Course Certificate holder from Whirlpool
- Six Sigma Black Belt Course from LG Inc. (Korea) & Green Belt certification from LG India.
- PGDIM & MBA(Operation Management) from IGNOU
- B.E. (Industrial & Production) from Gulbarga University.

Date:
Place: **(ANOOP SINGH)**

Dated:30.05.2024

Ref: MED/PE/BIS/101

AUTHORIZATION

We, M/s V-Guard Industries Ltd., Vennala High School Road, Kochi-682 028, do here by authorize Mr. Anoop Singh, Sr. GM - R&D Head, V-Guard Industries Ltd. Regd. Office: 42/962, Vennala High School Road, Vennala, Kochi - 682028. to represent our company in the BIS Technical committee, ETD 32 to contribute to the development of standards that will benefit industry and the public. We assure you of our full commitment and active participation in the committee's activities.

Dated this the 30th day of May 2024.

Thanking You,

Your's faithfully,

Biju Pramod P

V-GUARD INDUSTRIES LTD. VENNALA COCHIN-28 VENNALA HIGH SCHOOL ROAD

V-Guard Industries Ltd.

Vice President – Mechanical & Electrical Division.

Mob:9995495000
Email: bijupramod@vguard.in

ANAND SHARMA

Correspondence address:
A-203, Olive Apartment, Baif Road,
Wagholi, Pune- 412207, Maharashtra, India

E-mail ID: anandsharma28.9@gmail.com
Contact No: +91 7276 270 730

Professional Swift:

Over 15+ years of experience working in Mechanical Industry with various Domain & Technologies.

Area of Interest:

Research & Development, Product Design & Prototype development, Project management, PLM, PDM, Sustainable Manufacturing, Product Testing and Validation

Educational Qualification/Certification:

- **M. Tech (Manufacturing & Management)** from Birla Institute of Technology with 8.97 CGPA [2013-15]
- **B.E. in Mechanical Engineering** from University of Pune with First Class [2006-10]
- **Intermediate/+2** from Maharashtra State Board, Nasik with 75.67% [2006]
- **Matriculation** from Maharashtra State Board, Nasik with 72.93% [2004]
- **German A1 Level** certified with 73% (Goethe Institute, Pune)

Work Summary:

❖ **Franke Faber India Pvt Ltd**

Franke Faber mainly deals with design and manufacturing of kitchen appliances like Chimneys, Hob-Cooktops, Sinks, Faucets etc to make the kitchen a wonderful place with edge cutting technology and quality.

Joined at: January 2018 – Till date
Designation: Head [R&D]
Department: R & D Dept. (Kitchen appliances Division)

Responsibilities:

- Leading project planning and execution for design - development activities of NPI (New Product Introduction) for Chimneys, Hob and Cooktop projects considering cutting edge technology, design, quality and cost
- Managing and implementing the engineering changes in the existing products for Cost optimization, Design Improvement, Process betterment or Quality Improvement
- Creating and Generating Product Testing and Approval standard, defining test procedures for critical components and parts

- Creating proposals for New Products (OWN manufactured/Traded) in consultation with Marketing and preparing project schedule for product launch
- Managing key technical accounts for customer like Bosch, IKEA, Mepamsa and Blaupunkt for European and Asian market with required compliances and norms
- Conceptual designing of New products and providing technical inputs to team members for the same with Creo
- Coordinating with internal customers (Production, Quality, Supply chain, Service, Marketing and Finance, Sales team) for smoother operation during New Product Introduction, heading NPI review meeting for setting action plan and roadmap
- Problem solving and troubleshooting of issues faced by the concern stakeholders during pilot or mass production of New/Existing products
- DFX, DFMEA, Testing and validation for the New Projects
- Lead IS-4246:2002 (ISI) certification activity for getting BIS scheme for LPG based stoves
- PDM responsible from INDIA for creating new product codes, BoM through SAP, maintaining product at various plant, PDM troubleshooting with respect to PDM site data
- New Product Launch request and proposal for Small Domestic Appliances like Mixer, Water Purifier, Water Geyers, Ovens and microwaves etc
- Coordinating for PLM activity through Team center (Siemens)
- Managing Certification activities like BIS, CB/CE certification and dealing with concern stakeholders (Internal or Global sourcing/Involved agencies/ Government regulatory bodies) to get it done
- Preparation of BOM, BoM Change Request, Development Continuation Request

❖ **Vertiv Energy System Ltd. { Formerly Emerson Network Power, Pune [India] }**

Vertiv Energy systems (Formerly Emerson Network Power) provides engineering, installation, project management, on-site operations management, communication infrastructure, preventive maintenance and energy-consumption monitoring in Telecom, Industrial & Electrical segment. From core to access, from head-end to outside plant, from wireline to wireless, the solutions that support businesses prepare you for the next unplanned outage within the network infrastructure. Emerson Network Power's communication solutions for Global Service Providers (GSPs) empower world for what's next; it's just another advantage of dealing with the industry leader in power solutions.

Joined at: August 2015 – Jan 2018
Designation: Product Design Engineer-II
Department: New Product Development (Energy Systems- R & D Division)

Responsibilities:

- Leading project planning and execution of design - development activities for temperature controlled Telecom Cabinets
- Conceptual and operation designing of a proven structural system for cabinets with integrated mechanical components and a sealing system that withstands rain, dust, snow and hurricane winds charted with meticulous GR-487 and IP grade in accordance with DFMEA
- Product designing of mechanical and electrical parts through PRO-E (Creo Elements) parametric modeling software, verify designs and product data management by EPIC Team Centre tool
- Coordinating with European customers (Nokia, Vodafone, Telnet, M-Net, VIP Net & Many more

across Europe) to discuss and offer the optimum product fit to their requirement and environmental conditions
- Innovative global designing throughout all geographic regions and technical support to both wireless and wireline outside plant enclosure requirements.
- Synchronizing with German counterparts through design review meeting with respect to stage gate process for prototype development, feature enhancement, modification, manufacturing & product testing to develop the first product right at first spell
- Configuring enclosure in such way that it can also provide multiple battery housing options, support indoor racks for use in outdoor applications and customization to meet global industry standards and general requirements of customers.
- Check project status (delay of schedule, problem and difficulty in development), and report to superior & BU
- Independent project and open items tracking and documentation
- Conduct and arrange product knowledge sessions and process training to streamline the operational functionalities and improve the productivity.

Projects handled during professional experience at Emerson Network Power:

- **Projects:** New Product Design, development, testing of OSP projects for various thermal enclosures and adaptation projects for few products
- **Targeted Market:** EMEA and NA Market with Fan Filter or Heat exchanger unit
- **Customers:** Orange, Belgacom, TAG ARU, Huawei (3 Variants), Nokia (4 Variants), NGN, Bouygues, Polizei Brandenburg, VIPNET, M-Net, Deutsch Telekom, Siemens, Telent, Swisscom, MFG Group, MDS-UAE, Telecom Croatia, Vivendi
- **Software used:** Pro-E 5

Past Experience:

❖ ***COROB India Pvt. Ltd., Mumbai [India]***

COROB (Formerly CPS Color) provides tinting system components for a wide variety of customers such as paint manufacturers, retail chains, leather and plastics producers as well as paint shops via paint manufacturers at global platform. Broad knowledge of COROB in tinting not only translates into our top quality CPSCOLOR™ colorants, but also into COROB™ dispensing and mixing equipment, software, color marketing tools, an extended global service network and customer support.

Joined at: Nov 2013-Aug 2015
Designation: Product Design Engineer
Department: Equipment & Industrialization Team (R & D Division)

Responsibilities:

- Initiate engineering projects related to researches, designs, develops and tests components, products and systems for Dispensing machines, mixers with SMART deliverables through stage gate process
- Coordinating with design team to create drawing and engineering drawings, with production team

for regular production after launching successful product and product line establishment, with customers and sale team for providing best and advance product which will suffice their requirement and making project charter accordingly

- Defining Project Charter, Project and product management of dispensers, mixers, shakers with respect to technical changes, continual improvement, NPI, Project data management, Preparation of BOM (Work Order) for project
- Lead the task from conceptual to detailed design and development through stage gate process and allocate resources on time, manage the open action items list, schedule to track closure of all tasks for program deliverables
- Execute projects as per Project Launch Process
- Owner of the project from inception till End of Production
- Responsible for completing project within allotted budget, agreed upon schedule and quality targets, Creation of Test Report and Release Documentation
- Lead internal team meetings to track progress per the agreed upon schedule
- Coordination with internal and external customers for project accomplishment
- Maintain Project Status Reports and present status to Management
- Track and coordinate project activities (open issues) with the customer during product launch
- Identifying different ideas based on inputs from sales, customers or internal/external exploration based on product enhancements
- Selection of components and hardware's in electrical and mechanical system
- CapEx and OpEx preparation for project and product lifecycle
- Designing of sheet metal, machines parts, plastic parts, various components, tools & fixture through Creo (Pro-E), Auto-CAD
- Prototype testing, stage inspection, technology assessment and Market/product requirements
- Testing the proof of concept and feasibility including performance within different scenario
- Packaging of the product with proper testing with transportation test and environmental condition to ensure safe delivery of worldwide to customer end
- Continuous improvement of the products to achieve operational objectives
- Simulating the product look and feel including inputs in aesthetics, ergonomics
- Working with quality and service team as well to ensure the qualitative product and in order to improve and optimize product as per customer requirement
- Lead product qualification/testing requirements marking of Dispensers and Mixers within defined time schedules, its analysis, Reverse engineering, process improvement
- Engineering support for product design and development to resolve system malfunctions, to ensure manufacturability, maintainability and for respective operational needs
- Lead compliance/ global regulatory requirements of Dispensers/ Mixers within defined timelines
- Project estimation and product costing, Preparation of product and project documentation, specifications, Design calculations, manuals and catalogues
- Technology up gradation and feature enhancement, Cable routing optimization
- Timely execution of project, process improvement, SAP PLM update with counterparts
- Define and implement optimum workplace layout for new product line with finest motion study, time study and analysis so as to increase the productivity eventually

Projects handled during professional experience at COROB INDIA:

1. **Project Name:** New product introduction – D180 Dispenser for South America market

Description: Designed and developed new version of D200 series for South American market. Done concept design, project management, documentation, product administration, prototype development and testing of D200. Synchronized all operations to launch this product till handover to production crew

Software used: Pro-E 5

Project benefit: Offered robust and improved dispenser to compete market

2. **Project Name:** New product introduction – F1 TX Dispenser for Asian market

   Description: Designed and developed F1 TX Dispenser for Asian market. Done concept design, project management, documentation, product administration, prototype development and testing, product line set up in plant. Product involved sheet metal, plastic and machined parts. Synchronized all operations to launch this product till handover to production crew

   Software used: Pro-E 5

   Project benefit: Made cost effective and enhanced dispenser. Saving of 350 $ per Machine

3. **Project Name:** Design and development of Test bench, jigs and fixtures

   Description: Designed and developed various test benches as per laboratory requirement and production requirement for regular assembly, analysis or testing purposes. Also developed jigs and fixtures.

   Software used: Pro-E 5

4. Revamp BANCO model and enhancement in Turn-Table Dispenser
5. Product improvement in First one MX dispenser (Asian Paints)
6. **Project Name:** New product introduction – NFCED Dispenser on global platform

   Description: Designed and developed NFCED Dispenser on global platform. Done concept design, project management, documentation, prototype development and testing,. Harmonized all processes to bring this product in market. Product involved sheet metal, plastic and machined parts with some shelf items. This machine runs with combination of solitary motor and actuator assembly

   Software used: Pro-E 5

   Project benefit: Offered new foot print cost effective dispenser (NFCED) with novel technology compete market

❖ ***V2 Tech Ventures Pvt. Ltd., New Mumbai [India]***

V2 Solutions is project based company and performs the designing and engineering service to USA clients for residential and commercial solar projects. It has several divisions to accomplish several software based projects as well.

Joined at: Apr 2013 to Oct 2013

Designation: Design Engineer

Department: Design/Engineering Department.

Responsibilities:

- Performed Designing and drafting duties for residential and commercial international solar projects
- Produced layout drawings, electrical schematics through Auto-CAD 2014, Solid works 2013
- Preparation of BOQ (Work Order) & valuation for projects assigned
- Evaluated site electrical system, roof structure and solar access with Solmetric sun-eye

- Electrical schematics and layout preparation, cable routing
- Project completion with QA in accordance with Checklist points and to ensure the same as per NEC standard, Examining enquiries, specifications and drawings, Project Estimation
- Participate in problem solving and recommend CAPA for the same for performance optimization
- Review reliability predictions, and Design Failure Modes and Effects analysis (FMEA) and structural/thermal results, Wire harness modification and optimization
- Sustainability of parts to assess environmental impact and to take necessary action if beyond the norms/statutory regulations

Projects handled during professional experience at V2 Solutions:

1. **Project Name:** Design of Residential, commercial solar projects.
   Description: Designing of residential and commercial solar projects ranging from 3KW to 25KW (Grid connected) for California, Massachusetts, Arizona, New York states in compliance with respective AHJ, Utilities and NEC Standard 2011.
   Software used: Auto-CAD 2014, Solmetric sun-eye
2. **Project Name:** Designing of mounting and assemblies of PV Array, electrical schematic and layout For PV system to utility
   Description: Mounting and assemblies of rooftop PV Array, Routing of power cables in accordance with safety guidelines
   Software used: Auto-CAD 2014

❖ **KENERSYS INDIA PVT. LTD., Pune (Kalyani Group)** ***[India]***

KENERSYS is a renowned Wind Turbine Generator global manufacturing company with an in-depth knowledge of designing, manufacturing and marketing high-quality on-shore Multi megawatt Wind Turbines.

Joined at: July 2010 to March 2013
Designation: Engineer
Department: Engineering Department
Responsibilities:

- Led Project Planning and Execution team for Engineering and design changes (DCR & NCR Team)
- Continual design improvement on existing designs to drive cost reductions, to make product safer and reliable
- Conferred with engineers and other personnel of sourcing, quality, assembly and site crew to ensure the manufacturing and installation of the product in line with design and suggested development
- Timely interaction with contractors, vendors, clients for completion of project as per schedule and for betterment of product, project and services
- Design modifications on assigned portfolio of components to ensure robust designs and conformance with engineering design
- Identified the most efficient and acceptable resolutions to complex engineering problems
- Interaction with design team at Germany and provide input for Existing Product Development & NPI (New product Introduction) globally
- Research new technologies and assessed feasibility for inclusion in new concepts etc.

- Provided awareness and understanding of overall project portfolio, interactions and issues
- Failure Mode Effect Analysis (FMEA), SWOT Analysis, Technical evaluation of major projects for the continual improvement in product, process improvement
- Monitoring in house rejection and rework, supporting manufacturing and site crew for reducing the defects
- 3D Modeling and drawings of sheet metal and other mechanical components, assemblies using Solid-works 2012, Analysis through ANSYS and design simulation
- Creation of schematics and process flow for operational activities, Plant layout through Auto-CAD
- Simulation of frames, structural parts needed to built up assembly or to mount some electrical parts through Solid-works Simulation Express Analysis; perform all necessary calculations such as stress analysis, performance analysis.
- Sustainability of parts to assess environmental impact and to take necessary action if beyond the norms/statutory regulations
- Product Data Management with Enterprise-PDM
- Prototype installation, Type testing, Vendor Development, New product Introduction (NPI) and development methodology, system and process improvement, optimization
- Continually improved methods and procedures for processes, documenting work flow techniques
- Work-Order (Bill of Material) and preliminary cost estimation, Design Change Request (DCR) Management as well as Implementation of design changes by using SAP (B1 Accelon) and appropriate action plan
- Create and maintain the product documentation (Technical documents, Work instructions, Check list, specification, drawing and Bill of Material revision control)
- Reverse engineering and analysis of projects to inline product with latest technologies.
- Preparation of Filing patents and dealing with the competitive edge of technology available in market and other responsibilities as assigned
- Support to Type Certification and documentation for C-WET, MNRE.

Projects handled during professional experience at KENERSYS:

1. **Project Name:** Solid Modeling and Detailing of nacelle enclosure.
   Description: Project involved in solid modeling and detailing of the nacelle enclosure which enclose the wind turbine. This is made of composite material (GFRP). The part was created by following standard wind turbine guidelines and DIN Standard. Part was modeled carefully using basic and advanced features. Checks to ensure that an error free STEP can be created by applying GD&T.
   Software used: Solid Works 2010
   Project benefit: Advanced aesthetic look for enclosure of wind turbine

2. **Project Name:** Sheet Metal Part design & development of electrical cabinets, control units exterior
   Description: The project involved parametric sheet metal Modeling, Detailing and assembling of electrical cabinets, control panel exterior of wind turbine. These cabinets and control unit exterior cover all the major and critical electrical and electronic components which is the heart of turbine
   Software used: Solid Works 2010
   Project benefit: Protection of electrical and electronic components with ease for serviceability

3. **Project Name:** Design and development cost effective-qualitative anemometer and wind vane
   Description: An anemometer is a device used for measuring wind speed, and is a common weather station instrument.

4. **Project Name:** Designing of advanced locking system of the nacelle, door
   Description: Existing locking system was not enough at wind farm, so in order to avoid mishaps at site, developed new locking system in association with supplier
   Software used: Solid Works 2011

5. **Project Name:** Conversion of Non-moving(obsolete or rejected) material in inventory to useful
   Description: By analysis and necessary operations (DCR and NCR activities) in consultation with the counterparts at GmBH and engineers of assembly plant, site
   Project benefit: 41,500 € obsolete Material used for future assemblies with saving of 21,430 € in existing stock)
6. **Project Name:** Cost reduction project of using FRP material in lieu of Almg3 material.
   Description: Various components material of existing assembly has been changed to cost effective material
   Project benefit: 525 € saving per Wind Turbine Generator

7. **Project Name:** Prototype Installation of projects related to performance optimization.
   Description: Cable were damaging during yawing motion of turbine at top, so initiated on field Project of modifying cable routing. Thought up for donut structure to rout these cables from each shell of turbine and regularized design in future turbines as well
   Software used: Solid Works 2011
   Project benefit: 1200 € saving at Visapur site alone, SATARA. Further saving of 600 € per WTG
8. **Project Name:** Cost reduction project of using Alternative solution for some mechanical elements
   Description: Altered various mechanical elements with different material and grades, assemblies and enhanced conventional system with cutting-edge junk.
   Project benefit: 300 € saving per Wind Turbine Generator
9. Appropriate installation of cable guide with the help of Clamp arrangement of 40 € saved ISU Transformer after Non conformance of 2200 € on two sites of Gujarat sites
10. Vendor development and Indigenization of FRP parts, B Class components, lubrication system and Bosch Rexroth Gear Box system, Rothe Erde bearings and timely assist in line with the specification.

Technical Knowledge:

CAD/CAE Software	Solid works 2013, Uni-Graphics (NX6), Auto-CAD 2013, Hyper Mesh 9.0, ANSYS11.0, Creo-Elements (Formerly Pro-E), CATIA-V5.
QMS	ISO 9001:2008, IS0 14001:2004, OHSAS 18001:2007 (IMS).
SAP/ERP/PLM Module	SAP – B1 (Accelon), Aufgabencenter (SAGE), SAP PLM (PRO- E INTRALINK)
Standards	ASME Y14.5 (2009), DIN, IEC, NEMA, UL, GR-487, IP rating standard
Others	SCADA, GH Bladed, Solmetric Sun-Eye, SPC, Exposure to lean production system, FMEA, APQP, KAIZEN.
Training	GD & T in accordance with ASME 2009 Standard at KCTI (Bharat Forge), Pune
Operating System	Windows (98, 2000, XP, VISTA, 7), Linux (Fedora Core).

Documentation Microsoft Office (Word, PowerPoint, Excel, Project, Visio).

Project Undertaken For Final Year:

Project Name: Thermal Analysis and Computer Simulation of DI-CI Engine Piston
Platform: Analytical approach to thermal behavior of piston as well as its modeling in Uni-graphics (NX4), meshing in Hyper mesh 9.0 and Analysis using ANSYS. By creating unique program and setting up the different parameters made easier analysis within short span.

Seminar Undertaken For Third Year:

Seminar Topic: Chandrayaan-1 – India's First mission to moon
Platform: Realize the mission goal of harnessing the science payloads, lunar craft and the launch vehicle with ground support system, achieving lunar orbit of 100 km, telemetry data reception, quick look data and its archival for scientific utilization.

Presentations, Honour's and Other Activities:

- Honored with Consolation Prize in IEEE Paper Presentation Competition for Paper Chandrayaan-1 – India's First mission to moon by ISRO Scientist P. Nagrajan
- Participated in various National level Paper Presentation Competition, Robotics Competition, AUTO-CAD and Quiz competition
- Executive Member of SAE INDIA, Organized MOTO-GP 2K9 at College of Engg., Kopargaon
- Having NCC "A" Certificate in academic year 2002-03 with Rank of L-CPL

Hobbies and Interests:

- Interested in writing the poems, articles, blogs (Technical and Non-Technical)
- Like to spare time to learn new and novel technologies
- Playing Table Tennis (Represented college as captain of team in Table-Tennis at Zonal level 2009)
- Part of "Prayatna social foundation" to drive various activities for social welfare.
- Trek to various forts and to clean such heritage during the trekking activity

Skills and Abilities:

- Out of box thinking, Quick learner and detail oriented, eager to face new challenges
- Handle a team of Draughtsman/Engineers as a leader for successful completion of project & able to review design to the core, Proficient 3D and 2D design generation with any CAD Software's
- Timely Project management and Execution, Quality and cost consciousness
- Strong blend of decision-making and creative problem solving skills, Root cause analysis
- To come up with novel engineering ideas, Root cause analysis
- Flexible enough to adapt the quickly changing business priorities/assignments

Personal Details:

- Name: Mr. Anand Narendra Sharma
- Permanent Address: 35, Vallabh Nagar, Malegaon Road, Dhule-424001 {MH}
- Contact No: +91 7276270730
- Date of Birth: 28th September 1988
- Nationality: Indian
- Sex: Male
- Language Proficiency: English, Hindi, German (A1 Level) , Marathi, Marwari
- Marital status: Single
- Blood Group: B+

Declaration:

I am confident of my ability to work in a team. I hereby declare that the information furnished above is true to the best of my knowledge. Thanking you.

Date:
Place:

Yours Sincerely,
Mr. Anand N. Sharma

Date: 25th April-2024

To,
Bureau of Indian Standards,
Manak Bhawan, 9, Bahadur Shah
Zafar Marg, New Delhi- 110002

Subject: Authorization for being part of BIS Technical Committee

Dear Sir / Madam,

We hereby authorise **Mr. ANAND SHARMA** working as **Head of Research and Development** at **FRANKE FABER INDIA PRIVATE LIMITED** being authorised signatory of the organization to act on behalf of the Company to be a part of Technical Committee formulated by Bureau of Indian Standards.

This authorisation shall remain in full force and effect until express written notice of revocation or modification is served by us.

FOR FRANKE FABER INDIA PRIVATE LIMITED

Franke Faber India Private Limited

PUNEET GUPTA
MANAGING DIRECTOR
DIN :07385636

FRANKE FABER INDIA PRIVATE LIMITED (Formerly known as Franke Faber India Limited)
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