

Curriculum Vitae



Dr. Bhavesh Bhalja, Ph. D Engg; Senior Member, IEEE
Assistant Professor, Department of Electrical Engineering,
Indian Institute of Technology Roorkee
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Awards & Achievement:

1. *Got Young Engineers Award by Institution of Engineers, India in 2009.*
2. *Got Certificate of Merit Award by Institution of Engineers, India in 2007.*
3. *Got Hari Ohm Ashram Prerit Shri Bhaikaka Inter-University Smarak Trust Award in Electrical Engineering by Sardar Patel University for the year 2008-09.*
4. *Got Best Poster for the paper titled “Miscordination of Relay in Radial Distribution Network Containing Distributed Generation” at IEEE Conference on Recent Advances in Intelligent Computational Systems, Sep 22-24, 2011, Trivandrum, India*
5. *Got prize of Rs. 3000/- for an article in IEEMA Journal, Mumbai, India in 2005.*
6. *Associate Editor of Canadian Journal of Electrical & Computer Engineering, IEEE Canada.*
7. *Working as a Reviewer of EEE Transactions on Power Delivery, IET GTD, Electrical Power and Energy System and Electric Power Components and Systems.*
8. *Currently involved in Research Project of Rs. 50,00,000/- from Department of Science & Technology and Council of Scientific and Industrial Research, India.*

Field of Specialization:

- ❖ Digital Protection of Power System
- ❖ Controlled switching application to compensated/uncompensated transmission lines
- ❖ Distributed Generation
- ❖ Smart Grid/ Micro and its application
- ❖ Application of Artificial Intelligence to Electrical Engineering
- ❖ Fault Analysis & Diagnosis
- ❖ Power Quality Improvement Using Custom Power Devices

Academic Qualification:

Examination Passed	University / Board	Year of Passing	Div. / Class	Subjects / Discipline
H.S.C	Gujarat Secondary Education Board, Gandhinagar, Gujarat, India	1995	First with Dist.	Science
B.E.	Birla Engineering College, Vallabh Vidyanagar, Anand, Gujarat, India	1999	First	Electrical Engineering
M.E.	Birla Engineering College, Vallabh Vidyanagar, Anand, Gujarat, India	2001	First	Power System
Ph. D	Indian Institute of Technology Roorkee, Roorkee, India	:2007	-	Electrical Engineering

Details of Professional Experience:

Name & Address of the Employer	Designation of the post held	Period of <u>Service</u>	Nature of Service
A D Patel Institute of Technology, New Vidyanagar	Assistant Professor (3 Years, 7 Months and 23 Days)	08-10-2001 To 31-05-2005	Teaching, Research & Laboratory Development
A D Patel Institute of Technology, New Vidyanagar	Associate Professor (5 Years and 1 Month)	01-06-2005 To 30-06-2010	Teaching, Research & Laboratory Development
A D Patel Institute of Technology, New Vidyanagar	Professor (3 Years, 1 Month and 06 Days)	01-07-2010 To 07-08-2013	Teaching, Research & Laboratory Development
Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India	Associate Professor (10 Months 7 Days)	08-08-2013 To 15-06-2014	Teaching, Research & Laboratory Development
Indian Institute of Technology Roorkee	Assistant Professor	17-06-2014 To Till Date	Teaching & Research

LIST OF RESEARCH PUBLICATIONS

Referred International Journals	Referred National Journals	Referred International Conferences	Referred National Conferences	Total Publications
45	17	23	12	97

Publication in Refereed International Journals

- [1] Bhavesh Bhalja and R. P. Maheshwari, "Trends in Adaptive Distance Protection of Multi-terminal and Double-circuit Lines", International Journal of Electric Power Components and Systems, Taylor Francis, Vol. 34, No. 6, June 2006, pp.603-617.
- [2] Bhavesh Bhalja and R. P. Maheshwari, "High Resistance Faults on Two Terminal Parallel Transmission Line: Analysis, Simulation Studies and an Adaptive Distance Relaying Scheme", IEEE Transactions on Power Delivery, Vol. 22, No. 2, April 2007, pp. 801-812.
- [3] Bhavesh Bhalja and R. P. Maheshwari, "An Adaptive Distance Relaying Scheme Using Radial Basis Function Neural Network", International Journal of Electric Power Components and Systems, Taylor Francis, Vol. 35, No. 3, March 2007, pp.245-259.
- [4] Bhavesh Bhalja and R. P. Maheshwari, "Percentage Differential Protection of Double-Circuit Line Using Wavelet Transform", International Journal of Electric Power Components and Systems, Taylor Francis, Vol. 35, No. 8, August 2007, pp.945-954.
- [5] Bhavesh Bhalja and R. P. Maheshwari, "Protection of Transmission Line Paralleled Along the Same Right of Way", International Journal of Electric Power Components and Systems, Taylor Francis, Vol. 36, No. 3, March 2008, pp. 239-249.
- [6] Bhavesh Bhalja and R. P. Maheshwari, "A New Differential Protection Scheme for Tapped Transmission Line", IET Generation, Transmission & Distribution, Vol. 2, No. 2, March 2008, pp. 271-279.
- [7] Bhavesh Bhalja, R. P. Maheshwari, Urmil Parikh and B. Das, "Decision Tree Based Fault Classification Scheme for Protection of Series Compensated Transmission Lines", International Journal of Emerging Electric Power Systems, Berkeley Electronic Press, Vol. 8, Issue 6, 2007, Article 1, pp. 1-12.
- [8] Bhavesh Bhalja and R. P. Maheshwari, "Wavelet Based Fault Classification Scheme for Transmission Line Using SVM" International Journal of Electric Power Components and Systems, Taylor Francis, Vol. 36, No. 10, October 2008, pp. 1017-1030.
- [9] Bhavesh Bhalja, R. P. Maheshwari, Saurav Nema and H. K. Verma "Neuro-Fuzzy Based Scheme for Stator Winding Protection of Synchronous Generator" International Journal of Electric Power Components and Systems, Taylor Francis, USA, Vol. 37, No. 5, May 2009, pp. 560-576.

- [10] Bhavesh Bhalja and R. P. Maheshwari, "Wavelet Based Relaying Scheme for Tapped Transmission Line", International Journal of Electric Power Components and Systems, Taylor Francis, USA, Vol. 37, No. 8, August 2009, pp. 879-893.
- [11] Bhavesh Bhalja, R. P. Maheshwari, and Urmil Parikh, "A New Digital Relaying Scheme for Parallel Transmission Line", International Journal of Emerging Electric Power Systems, Vol. 10, Issue 3, Article 3, Berkeley Electronic Press, Canada, 2009, pp. 1-26.
- [12] Bhavesh Bhalja, R. P. Maheshwari, B. A. Oza and P. H. Shah, "Development of a New Over current/Under current Relay Testing Kit", International Journal of Electric Power Components and Systems, Taylor Francis, USA Vol. 37, No. 11, November 2009, pp. 1208-1218.
- [13] Bhavesh Bhalja and Swati Purohit, "Protection of Double Circuit Line using Superimposed Current", International Journal of Electric Power Components and Systems, Taylor Francis, USA, Vol. 39, No. 6, June 2011, pp. 590-604.
- [14] Bhavesh Bhalja and R. P. Maheshwari, "A new fault detection, classification and location scheme for transmission line," International Journal of Power and Energy Conversion, Inderscience Enterprises Ltd, Vol. 2, No. 4, 2011, pp. 353-364.
- [15] Tejas Zaveri, B. R. Bhalja and Naimish Zaveri, "Simulation and Analysis of Control Strategies for DSTATCOM," ACEEE International Journal on Control System and Instrumentation, Vol. 1, No. 1, July 2010, pp. 116-120.
- [16] Bhavesh Bhalja and Vijay Makwana, "A New Adaptive Digital Distance Relaying Scheme for Double Infeed Parallel Transmission Line during Inter-Circuit Faults" IET Generation, Transmission & Distribution, UK, Vol. 5, Issue 6, 2011, pp. 667-673.
- [17] Bhavesh Bhalja, Nilesh Chothani and Urmil Parikh, "A New Fault Zone Identification Scheme for Busbar using Support Vector Machine" IET Generation, Transmission & Distribution, UK, Vol. 5, Issue 10, October 2011, pp. 1073-1079.
- [18] Bhavesh Bhalja and Vijay Makwana, "A New Adaptive Distance Relaying Scheme for Mutually Coupled Series Compensated Parallel Transmission Lines during Inter-Circuit Faults," IEEE Transactions on Power Delivery, US, Vol. 26, No. 4, October 2011, pp. 2726-2734.
- [19] Bhavesh Bhalja, P. H. Shah, N. G. Chothani and Ravi Patel, "A Novel Approach to Tackle Miscoordination of Protective Device in Radial Distribution Network during DG Interconnections" International Journal of Emerging Electric Power Systems, Vol. 12, Issue 4, Article 4, Berkeley Electronic Press, Canada, 2011, pp. 1-21.
- [20] Tejas Zaveri, Bhavesh Bhalja and Naimish Zaveri, "A Novel Approach of Reference Current Generation for Power Quality Improvement in 3-phase, 3-wire Distribution

System using DSTATCOM,” International Journal of Electrical Power and Energy System, Elsevier B. V, Vol. 33, 2011, pp. 1702-1710.

- [21] Bhavesh Bhalja, P. H. Shah, Balubhai Rakholia and Jignesh Shah “A New Digital Down Conductor Detection Scheme for Overhead Electrical Power Distribution Systems,” International Journal of Emerging Electric Power Systems, Vol. 12, Issue 5, Article 8, Berkeley Electronic Press, Canada, 2011, pp. 1-16.
- [22] Bhavesh Bhalja and Vijay Makwana, “New Digital Distance Relaying Scheme for Phase Faults on Doubly-Fed Transmission Lines,” IET Generation, Transmission & Distribution, UK, Vol. 6, Issue 3, March 2012, pp. 265-273.
- [23] Bhavesh Bhalja and Vijay Makwana, “A New Digital Distance Relaying Scheme for Series Compensated Double-Circuit Line during Open-Conductor and Ground Fault” IEEE Transactions on Power Delivery, Vol. 27, No. 2, April 2012, pp. 910-917.
- [24] Tejas Zaveri, Bhavesh Bhalja and Naimish Zaveri, “Load Compensation using DSTATCOM in Three-phase, Three-wire Distribution System under various source and delta connected load conditions” International Journal of Electrical Power and Energy System, Elsevier B. V, Vol. 41, 2012, pp. 34-43.
- [25] Tejas Zaveri, Bhavesh Bhalja and Naimish Zaveri, “Comparison of control strategies for DSTATCOM in three-phase, four-wire distribution system for power quality improvement under various source voltage and load conditions” International Journal of Electrical Power and Energy System, Elsevier B. V, Vol. 43, 2012, pp. 582-594.
- [26] Bhavesh Bhalja, Nilesh Chothani and Urmil Parikh, “Development of a New Bus Zone Identification Algorithm using Support Vector Machine” IET Generation, Transmission & Distribution, UK, Vol. 6, Issue 7, July 2012, pp. 710-718.
- [27] Bhavesh Bhalja and Pragnesh H. Shah, “Laboratory Prototype to Understand Miscoordination of Relays in Radial Network in the Presence of Distributed Generation,” International Journal of Artificial Intelligence, CESER Publications, Roorkee, India, Vol. 9, No. A12, October 2012, pp. 26-36.
- [28] Bhavesh Bhalja and Vijay Makwana, “A New Digital Distance Relaying Scheme for Compensation of High-Resistance Faults on Transmission Line” IEEE Transactions on Power Delivery, Vol. 27, No. 4, October 2012, pp. 2133-2140.
- [29] Bhavesh Bhalja and A. M. Shah, “Discrimination between Internal Faults and Other Disturbances in Transformer Using Support Vector Machine Based Protection Scheme,” IEEE Transactions on Power Delivery, Vol. 28, No. 3, July 2013, pp. 1508-1515.
- [30] Bhavesh Bhalja and U. B. Parikh, “SVR Based Current Zero Estimation Technique for Controlled Fault Interruption in Series-Compensated Transmission Line,” IEEE Transactions on Power Delivery, Vol. 28, No. 3, July 2013, pp. 1364-1372.

- [31] Bhavesh Bhalja, Nilesh Chothani and Urmil Parikh, "New Support Vector Machine Based Digital Relaying Scheme for Discrimination between Power Swing and Fault" IET Generation, Transmission & Distribution, Vol. 8, Issue 1, January 2014, pp.17-25.
- [32] Bhavesh Bhalja and Pragnesh H. Shah, "Anti-Islanding Protection of Distributed Generation Using Rate of Change of Impedance," International Journal of Emerging Electric Power Systems, Vol. 14, Issue 5, October 2013, pp. 433-442, Berkeley Electronic Press, Canada.
- [33] Bhavesh Bhalja and Nilesh Chothani, "Development of a New Bus Zone Identification Algorithm based on Phase Angle Comparison using Sequence Components of Currents," Electric Power Components and Systems, Vol. 42, No. 2, January 2014, pp. 215-226.
- [34] Bhavesh Bhalja and Pragnesh H. Shah, "New adaptive digital relaying scheme to tackle recloser-fuse miscoordination during distributed generation interconnections" IET Generation, Transmission & Distribution, Vol. 8, Issue 4, April 2014, pp.682-688.
- [35] Bhavesh Bhalja and Nilesh Chothani, "A New Algorithm for CT Saturation Detection and Compensation based on Derivatives of Secondary Currents and Newton's Backward Difference Formulas" IET Generation, Transmission & Distribution, Vol. 8, Issue 5, May 2014, pp.841-850.
- [36] Bhavesh Bhalja and Pragnesh H. Shah, "A New Rate of Change of Impedance-based Islanding Detection Scheme in Presence of Distributed Generation," Electric Power Components and Systems, Vol. 42, No. 11, July 2014, pp. 1227-1238.
- [37] Bhavesh Bhalja and V. H. Makwana, "Distance Relaying Algorithm for a Line-to-ground Fault on Single Infeed Lines," Electric Power Components and Systems, Vol. 42, No. 12, August 2014, pp. 1172-1180.
- [38] Bhavesh Bhalja and A. M. Shah, "A New Adaptive Differential Protection Scheme for Tap Changing Power Transformer," International Journal of Emerging Electric Power Systems, Berkeley Electronic Press, Canada, Vol. 16, No. 4, August 2015, pp. 339-348.
- [39] Bhavesh Bhalja, Karan Sareen and R. P. Maheshwari, "Current based Islanding Detection Scheme in Presence of Distributed Generations," Electric Power Components and Systems, Vol. 44, No. 1, January 2016, pp. 72-81.
- [40] Bhavesh Bhalja and N. G. Chothani, "A New Algorithm for Busbar Fault Zone Identification Using Relevance Vector Machine," Electric Power Components and Systems, Vol. 44, No. 2, 2016, pp. 195-203.
- [41] Bhavesh Bhalja and Urmil B. Parikh, "Mitigation of Magnetic Inrush Current during Controlled Energization of coupled un-loaded Power Transformers in presence of Residual Flux without load side voltage measurements", Electrical Power and Energy Systems, Vol. 76, No. 1, pp. 156-164, March 2016.

- [42] Bhavesh Bhalja and R. A. Patel, " Condition Monitoring and Fault Diagnosis of Induction motor using Support Vector Machine," Accepted for Publication in of Electric Power Components and Systems, Taylor Francis, USA.
- [43] Bhavesh Bhalja, Karan Sareen and R. P. Maheshwari, " A Universal Islanding Detection Technique based on Rate of Change of Sequence Components of Currents for Distributed Generations," Accepted for Publication in IET Renewable Power Generation, UK.
- [44] Bhavesh Bhalja, Karan Sareen and R. P. Maheshwari, "Evaluation of Superimposed Sequence Components of Currents based Islanding Detection Scheme during DG Interconnections," Artical in Press International Journal of Emerging Electric Power Systems, Berkeley Electronic Press, Canada.
- [45] Bhavesh R. Bhalja and Ashesh M. Shah, "A New Fault Discrimination Scheme for Power Transformer using Random Forest Technique," Accepted for Publication in IET Generation, Transmission & Distribution.

Publication in Refereed National Journals

- [01] Bhavesh Bhalja and R. P. Maheshwari, "Protection of Double-Circuit Line Using Wavelet Transform", Journal of The Institution of Engineers, India, Vol. 87, No. 2, September 2006, pp. 67-70.
- [02] Bhavesh Bhalja and R. P. Maheshwari, "Modelling, Simulation and Analysis of ac Locomotives for 25 kV ac Railway Traction System – OHE Protection Considerations", Journal of The Institution of Engineers, India, Vol. 90, June 2009, pp. 1-6.
- [03] Bhavesh Bhalja, R. P. Maheshwari, and N. G. Chothani, "A Review on Busbar Protection Philosophy: Past, Present and Future," Journal of Institution of Engineers, India, Vol. 91, September 2010, pp. 3-13.
- [04] Bhavesh Bhalja and R. P. Maheshwari, "Protection Philosophies: Past, Present and Future", Electrical India Industrial Magazine, Vol. 47, No. 2, February 2007, pp.30-38.
- [05] Bhavesh Bhalja, R. P. Maheshwari and B. A. Oza, "Stator Earth Fault Protection for Generator", Electrical India Industrial Magazine, Vol. 47, No. 12, December 2007, pp. 116-120.
- [06] Bhavesh Bhalja and R. P. Maheshwari, "Challenges in Line Protection Philosophies", Electrical India Industrial Magazine, Vol. 47, No. 2, April 2008, pp.30-38.
- [07] Bhavesh Bhalja and R. P. Maheshwari, "Digital Protection of Power Transformers: Issues & Trends", Electrical India Industrial Magazine, Vol. 56, August 2008, pp.56-60.

- [08] Bhavesh Bhalja, Naimish Zaveri, Tejas Zaveri, A. R. Chudasama, "Impact of Power Quality on Electrical Distribution System: A Case Study of south Gujarat Region", Electrical India Industrial Magazine, Vol. 49, No. 11, November 2009, pp.182-187.
- [09] Bhavesh Bhalja and P. H. Shah, "Modelling & Dynamic Performance Prediction of a D.C. Series Motor Using TUTSIM as a Tool", IEEMA (Indian Electrical & Electronics Manufacturer's Association) Journal, Mumbai, India, Vol. 25, No. 7, June 2005, pp. 56-59.
- [10] Bhavesh Bhalja, P. H. Shah and G. R. Kaundinya, "Computer aided analysis of voltage regulation of 11kv distribution feeders", The Society of Power Engineering, Vadodara, India, January 2004, pp. 14-18.
- [11] Bhavesh Bhalja and P. H. Shah, "Application of Duel Optimization Technique to the Unit-Commitment on a non-convex problem", Journal of Engineering & Technology, Sardar Patel University, India, Vol. 17, December 2004, pp.68-72.
- [12] Bhavesh Bhalja, P. H. Shah and B. R. Parekh, "Different techniques of Power System Optimization", Journal of Engineering & Technology, Sardar Patel University, India, Vol. 16, September 2002, pp. 70-74.
- [13] Bhavesh Bhalja, "Application of Fast Fourier Transform and Wavelet Transform in Electrical Power System", ADIT Journal of Engineering, Vol. 2, No. 2, December 2005, pp. 20-22.
- [14] Bhavesh Bhalja, B. A. Oza and D. P. Chauhan, "PC Based Software and Hardware scheme for on line monitoring of 3-Ø Alternator", Journal of Engineering & Technology, Sardar Patel University, India, Vol. 14, March 2001, pp. 59-62.
- [15] Bhavesh Bhalja and P. H. Shah, "Modeling of D.C.Series Motor using front tool as Matlab", Journal of Engineering & Technology, Sardar Patel University, India, Vol. 15, July 2002, pp. 82-86.
- [16] Bhavesh Bhalja and N. G. Chothani, "Electrical Busbar Protection Philosophy: Past, Present and Future", Electrical India Industrial Magazine, Vol. 50, No. 1, January 2010, pp.122-129.
- [17] Bhavesh R. Bhalja and A. M. Shah, "A Laboratory Prototype and Simulation of Ground Constant Measurement of Circuit Breaker," Journal of Institution of Engineers, India, Ser. B, July 2014, pp. 1-8, DOI 10.1007/s40031-014-0086-z, ISSN: 2250-2114, H Index = 5.

Publications in Refereed International Conference

- [01] Bhavesh Bhalja and R. P. Maheshwari, "Philosophy of Protection for Multi-terminal and Double-circuit Lines", In Proceeding CERA-2005. International Conference, Computer Application in Electrical Engineering Recent Advances, September 28-October 01, IIT Roorkee, India, pp. 582-588, 2005.

- [02] Bhavesh Bhalja and R. P. Maheshwari, "Wavelet Transform Based Differential Protection Scheme for Tapped Transmission Line", In Proceeding ICIT 2006: IEEE International Conference on Industrial Technology, IIT Bombay, India, December 15-17, pp. 1001-1004, 2006.
- [03] Bhavesh Bhalja and R. P. Maheshwari, "High Speed Protection Scheme for Traction OHE of 25 kV AC Indian Railway System", In Proceeding IEEE Industry Application Society Annual Meeting, New Orleans, Louisiana, USA, Sept. 23 - 27, 2007.
- [04] Bhavesh Bhalja, B. A. Oza and P. H. Shah, "Coordination of over current relay for cascaded parallel feeder", In Proceeding APSCOM-06: International Conference on Advances in Power System Control, Operation and Managements, Hong Kong, October 30-November 02, pp. 01-04, 2006.
- [05] Bhavesh Bhalja, R. P. Maheshwari, B. Das and Urmil Parikh, "A new fault classification technique for protection of series compensated transmission lines", In Proceedings of International Conference on Power System Protection, CPRI Bangalore, India, February 20-21, pp. 17-26, 2007.
- [06] Bhavesh Bhalja, Samir Patel, P. H. Shah and Nilesh Modi, "Modeling & Dynamic Performance Prediction of Poly Phase Induction Motor and D C Series Motor Using computational tool as a Matlab", In Proceeding EAST-2005: International Conference on Emerging Adaptive System and Technologies, Tamilnadu, India, 16 December-17 December 2005.
- [07] Bhavesh Bhalja and N. G. Chothani and R. P. Maheshwari, "A new digital differential relaying Scheme for the protection of busbar," 4th International Conference on Computer Applications in Electrical Engineering Recent Advances, 19-21 Feb 2010, Indian Institute of Technology Roorkee, India.
- [08] N. Y. Savjani and B. R. Bhalja, "Impact of Distributed Generation on Protection of Distribution Network due to Interfacing Transformer Connection", International Conference on Electrical Power & Energy Systems (ICEPES-2010), P-480, 26-28 August 2010, MANIT Bhopal, pp. 347-350.
- [09] Tejas Zaveri, Bhavesh Bhalja and N. Zaveri, "Simulation and Analysis of Control Strategies for DSTATCOM", In Proceedings of International Conference on Control, Communication & Power Engineering (CCPE-2010), 28th July 2010, Chennai, India, pp. 116-120.
- [10] Bhavesh Bhalja, Tejas Zaveri and N. Zaveri, "Control Technique for Power Quality Improvement in Delta Connected Load Using DSTATCOM", In Proceedings of IEEE IEMDC International conference on Electric Machines and Drives, Niagara Falls, Canada, 15-18 May 2011, pp. 1397-1402.
- [11] N. G. Chothani, Bhavesh Bhalja and Kuldeep Ruparelia, "Digital Differential Relaying Scheme for the Protection of Sectionalized Bus using PSCAD," In Proceedings of

ICISSET 2011 International Conference on Innovative Science & Engineering Technology, Rajkot, Gujarat, India, 03-09 April 2011, pp. 338-342.

- [12] Bhavesh Bhalja, P. H. Shah and Ankit Patel, "Modeling and Simulation of Timer Based Fuse Recloser Coordination in Distribution Network with High Penetration of Distributed Generation," In Proceedings of ICISSET 2011 International Conference on Innovative Science & Engineering Technology, Rajkot, Gujarat, India, 03-09 April 2011, pp. 333-337.
- [13] P. H. Shah, Bhavesh Bhalja and Paresh R Moda, "Islanding Detection Techniques for Distributed Generation Systems: A Review," In Proceedings of ICAET 2011 International conference on Advances in Engineering & Technology, Nagapattinam, India, May 27-28, 2011.
- [14] Bhavesh Bhalja and P. H. Shah, "Miscoordination of Relay in Radial Distribution Network Containing Distributed Generation," In Proceedings of RAICS 2011 IEEE International conference on Recent Advances in Intelligent Computational Systems, Trivandrum, India, September 22-24, 2011, pp. 72-75.
- [15] N. G. Chothani and Bhavesh Bhalja, "A New Differential Protection Scheme for Busbar Considering CT Saturation Effect," In Proceedings of CCECE 2011 International conference on Electrical and Computer Engineering, Niagara Falls, Canada, 5-8 May 2011, pp. 07-10.
- [16] A. M. Shah and Bhavesh Bhalja, "A New Approach to Digital Protection of Power Transformer Using Support Vector Machine," In Proceedings of CCECE 2011 International conference on Electrical and Computer Engineering, Niagara Falls, Canada, 5-8 May 2011, pp. 11-14.
- [17] A. M. Shah and Bhavesh Bhalja, "Application of Support Vector Machine for digital protection of power transformer," In Proceedings of INDICON 2011 Annual IEEE India conference on Engineering Sustainable Solutions, Hyderabad, India, 16-18 December 2011, pp. 1-5.
- [18] N. G. Chothani, Bhavesh Bhalja and U. J. Patel, "A Real Time DSP based Differential Protection of Low Voltage Busbar," In Proceedings of International conference on Advances in Power Conversion and Energy Technologies, APCET, Hyderabad, India, August 2-4, 2012, pp. 1-4.
- [19] N. G. Chothani, Anand Desai and Bhavesh Bhalja "A New Algorithm for Coordination of Relay and Auto-Reclosure in 220 kV Transmission System," In Proceedings of INDICON 2013, International conference on Impact of Engineering on Global Sustainability, IIT Bombay, December 15-17, 2013, India.
- [20] R. V. Bhavsar, R. A. Patel and Bhavesh Bhalja, "Condition monitoring of Induction motor using Artificial neural network," In Proceedings of AICERA/iCMMD, 2014, Annual International conference on Emerging Research Areas: Magnetics, Machines and Drives, Kerala, India, July 24-26, 2014, DOI: 978-1-4799-5202-1/14/\$31.00 ©2014.
- [21] Siddharth Joshi, Vivek Pandya and Bhavesh Bhalja,"

- Maximum Power Point Tracking and MPPT efficiency for wind and solar energy conversion standalone system," In Proceedings of IEEE Indicon 2014, December 11-13, 2014, pp. 1-6.
- [22] Bhavesh Bhalja, Piyush Dodiya and T. Phani Swecha, "Universal Approach to Tackle the Threat of Miscoordination between Fuse and Recloser in Distribution Network with Distributed Generations," In Proceedings of Australian Power Engineering Conference (AUPEC 2015) on Challenges for Future Grids, Wollongong, Australia, September 26-30, 2015.
- [23] Karan Sareen, Bhavesh Bhalja and R. P. Maheshwari, "A New Islanding Detection Technique for Distribution System during DG Interconnections," IEEE ISGT-Asia-2015, International Conference on Innovative Smart Grid Technologies, November 4-6, 2015, Bangkok, Thailand.

Publications in National Conference

- [01] Bhavesh Bhalja and P. H. Shah, "Modeling & Simulation of Cumulatively Compound D C Motor Using Front Tool As a Matlab", In Proceeding, National Conference on Cutting Edge Technologies in Power Conversion and Industrial Drives, Tamilnadu, India, March 25-26, 2005.
- [02] Bhavesh Bhalja, Samir Patel and P. H. Shah, "Core-Area Optimization of 3-Phase Core Type Transformer", In Proceeding National Conference on Recent Trends in Design, Coimbatore, Tamilnadu, India, March 17-18, 2005.
- [03] Bhavesh Bhalja, B. A. Oza and P. H. Shah, "Testing of Over-current/ Undercurrent Relays", In Proceeding National Conference on Electrical Engineering Developments, Vishakapatnam, India, June 17-18, 2005.
- [04] Bhavesh Bhalja and R. P. Maheshwari, "High speed digital protection of traction overhead equipment using wavelet packet", In Proceedings of NPSC 2006, 14th National Power System Conference, IIT Roorkee, India, Session C2-4, December 27-29, 2006.
- [05] Bhavesh Bhalja and P. H. Shah, "Application of Sparsity Techniques for Various Load Flow Schemes", In Proceeding NPEC-2005: National Conference on Power Engineering, Madurai, India, December 16-17, 2005.
- [06] Bhavesh Bhalja and P. H. Shah, "Modeling & Simulation of D C Shunt Motor Using Front Tool As a Matlab", In Proceeding, National Conference on Advances in Engineering Design, Sathymangalam, Tamilnadu, India, April 29-30, 2005.
- [07] Bhavesh Bhalja, R. P. Maheshwari, D. Birla and Manoj Tripathy, "Advances in Line and Transformer Protection Schemes", In Proceedings of NCEC-2005, National Conference on Emerging Computational Techniques & their Applications; Jodhpur, India, October 22-23, pp. 236-240, 2005.

- [08] Bhavesh Bhalja and R. P. Maheshwari, "Protection of Transmission Line Using Distance Measurements: Problems & Solutions", In Proceedings of National Conference on Advancement of Technologies-Global Scenario-ADTECH-GLOS, February 25-26, GLA Institute of Technology & Management, Mathura, India, 2007.
- [09] Bhavesh Bhalja, R. P. Maheshwari & Vijay Makwana, "Real Time Implementation of Numerical Relay for Induction Motor", In Proceedings of NSC 2008, 32nd National System Conference on Energy Systems: Optimization & Conservation, IIT Roorkee, Roorkee, India, 17-19 December, 2008, pp. 330-334.
- [10] Bhavesh Bhalja, R. P. Maheshwari, Ashesh Shah & B. A. Oza, "Experimental Test Setup for Measuring Transient Overreach of Instantaneous Overcurrent Relay", In Proceedings of NSC 2008, 32nd National System Conference on Energy Systems: Optimization & Conservation, IIT Roorkee, Roorkee, India, 17-19 December, 2008, pp. 319-324.
- [11] Bhavesh Bhalja and Hetal Prajapati, "Maloperation of Distance Relay in Second zone due to Transformer Connection," In Proceedings of 2nd National Conference on Emerging Vistas of Technology in 21st Century, 4-5 December, 2010, Parul Institute of Engineering & Technology, Vadodara, India, pp. 67-74.
- [12] Bhavesh Bhalja and Swapnil Arya, "Simulation of Steel Melting Furnace in MATLAB and its effect on power quality problems," In Proceedings of National Conference on Recent Trends in Engineering & Technology, B. V. M. Engineering College, Vallabh Vidyanagar, Gujarat, India, 13-14 May 2011, pp. 1-4.

Sponsored Projects Undertaken:

Sr. No.	Sponsoring Agency	Title of Project	Amount of grant (Rs./-)	Period
1	Department of Science & Technology, Ministry of Science & Technology, Government of India	Protection of Electrical Network during DG Interconnections: Problems & Solutions	8,75,000/-	3 years (completed)
2	Gujarat Council on Science & Technology, Government of Gujarat	Digital Protection of Busbars	4,50,000/-	3 years (completed)
3	All India Council for Technical Education, New Delhi (Under Modernization and Removal of Obsolescence Scheme)	Modernization of Power Electronics and Drives Laboratory	7,00,000/-	1 year (completed)
4	Department of Science & Technology, Ministry of Science & Technology, Government of India	Banes and Boons of Protection Issues of Microgrid/Distributed Generators Interfaced Distribution System	24,17,880/-	(3 years) Ongoing
5	Council of Scientific and Industrial Research, Government of India	Design, Implementation & Validation of a New Digital Relaying Scheme for Synchronous Generator during Internal Faults	26,71,000/-	(3 years) Ongoing

Documentation of My Pedagogical Qualifications

1. Pedagogical education

Sr. No.	Name of course	Year of passing	Duration of course	Academic Institution
1.	Computer Methods in Power System Analysis	2004	Six Months	Indian Institute of Technology Roorkee
2.	Project	2005	Six Months	Indian Institute of Technology Roorkee
3.	Seminar	2005	Six Months	Indian Institute of Technology Roorkee
4.	Computer Based Relaying by Dr. T. S. Sidhu	2006	1 week	Indian Institute of Technology Roorkee
5.	Distribution System Automation by Dr. S. S. Venkata	2006	3 Days	Indian Institute of Technology Roorkee
6	Design of Experiential Learning Interactions and Environments	2011	3 Days	Gujarat Technological University
7.	Awareness on Green Energy & Energy Conservation	2013	2 Days	Pandit Deendayal Petroleum University

2. Teaching experience

(a) Teaching at Under/Post Graduate Level:

Sr. No.	Course taught	Postgraduate/ Undergraduate	Duration of Course	Form of teaching	Year of teaching
1.	Elements of Electrical Engineering	Undergraduate	Six months	Sole instructor	2001
2	Electrical Engineering-I	Undergraduate	Six months	Sole instructor	2002
3	Elements of Electrical Engineering	Undergraduate	Six months	Sole instructor	2002
4	Power System Protection	Undergraduate	Six months	Sole instructor	2003
5	Modern Power System	Postgraduate	Six months	With others	2003

	Operation & Control				
6	Power System-I	Undergraduate	Six months	Sole instructor	2004
7	Power System-II	Undergraduate	Six months	Sole instructor	2007
8	Modern Power System Operation & Control	Postgraduate	Six months	With others	2007
9	Power System Protection	Undergraduate	Six months	Sole instructor	2008
10	Power System – II	Undergraduate	Six months	Sole instructor	2008
11	Recent Trends in Power System	Postgraduate	Six months	Sole instructor	2009
12	Power System Operation & Control	Undergraduate	Six months	Sole instructor	2009
13	Recent Trends in Power System	Postgraduate	Six months	Sole instructor	2010
14	Power system operation & control	Undergraduate	Six months	Sole instructor	2010
15	Modern Power System Protection	Postgraduate	Six months	Sole instructor	2011
16	Power System-II	Undergraduate	Six months	Sole instructor	2011
17	Power system operation & control	Undergraduate	Six months	Sole instructor	2012
18	Modern Power System Protection	Postgraduate	Six months	Sole instructor	2012
19	Power System-II	Undergraduate	Six months	Sole instructor	2013
20	Energy Conservation & Audit	Undergraduate	Six months	Sole instructor	2013
21	Smart Grid Technology and Applications	Postgraduate	Six months	Sole instructor	2014
22	Electrical Science	Undergraduate	Six months	Sole instructor	2014
23	Power System Planning	Postgraduate	Six months	Sole instructor	2015
24	Switchgear & Protection	Undergraduate	Six months	Sole instructor	2015

(b) Number of M. Tech. Dissertations Supervised

Sr. No.	Degree	Name of Student	Title of the Thesis	Year Completed
1.	M. E. (Power System)	Naina Prajapati	A new fault classification technique for transmission line	July 2008
2.	M. E. (Power System)	Vaishali Patel	A new fault detection scheme for a parallel transmission line	September 2008
3.	M. E. (Power System)	Ankit Pandya	Power Quality Problems & solutions Using Custom Power Devices	December 2008
4.	M. E. (Power System)	Swati Purohit	A new digital cross differential relay based on super-imposed components for protection of double circuit line	March 2009
5.	M. E. (Power System)	Nidhi Sevjani	Impact of Distributed Generation on Protection of Distributed Network due to Interfacing Transformer Connection	August 2010
6.	M. E. (Power System)	Hetal Prajapati	Maloperation of Distance Relay in Second Zone due to Transformer Connection	September 2010
7.	M. E. (Power System)	Ankit Shah	Fuse-reclosure coordination during DG interconnections	October 2010
8	M. E. (Power System)	Paresh Modha	Impact of Distributed Generation on Distribution Systems	July 2011
9	M. E. (Power System)	Swapnil Arya	Modeling and Control of Fixed Capacitor Thyristor Controlled Reactor Type Static Var Compensator	July 2011
10	M. E. (Power System)	Sumit Rathod	Protective Scheme and Relay Coordination for HVDC Power Supply	July 2011
11	M. E. (Power System)	Ankit Patel	A New Fault Resistance Compensation Scheme for Distance Relaying Application	August 2011
12	M. E.	Dhaval	Study of out of step phenomena	June 2012

	(Power System)	Tailor	along EHV transmission line	
13	M. E. (Power System)	Mayur	Differential Protection of Power Transformer with CT saturation	June 2013
14	M. E. (Power System)	J. K. Chauhan	Improvements in thermal withstandability of metal oxide varistor	July 2013
15	M. Tech. (Power System)	Piyush Dodiya	Adaptive Digital Relaying Scheme to Tackle Recloser–Fuse Miscoordination in Distribution Networks with Multi Distributed Generation	July 2015
16	M. Tech Electrical Engineering	Karan Sareen	New Islanding Detection Technique in Presence of Distributed Generation	July 2015
17	M. Tech Electrical Engineering	Reddipalli Bhargav	Protection of Teed Transmission Lines	July 2015
18	M. Tech Electrical Engineering	Nidhi Gupta	Islanding Detection in a Microgrid Environment	July 2015
19	M. Tech Electrical Engineering	Vamsi Krishna	A New Differential Protection Scheme for Generator	In Progress
20	M. Tech Electrical Engineering	Priya Raghuvanshi	Discrimination between Internal fault and Inrush current in a Transformer	In Progress
21	M. Tech Electrical Engineering	Tagore	A New Adaptive Scheme for Tackle Fuse-Reclosure Miscoordination in Distribution Network with DGs	In Progress
22	M. Tech Electrical Engineering	Nidhi Narayan	A New Fault Zone Identification Scheme for Busbar	In Progress
23	M. Tech Electrical	Astha Chawla	Coordination of Overcurrent Relays in a Power Network Containing DGs	In Progress

	Engineering			
24	M. Tech Electrical Engineering	Sanchay Adari	Anti-Islanding Detection Scheme for Distribution Network	In Progress

(c) Number of Ph. D. Thesis Supervised

Sr. No.	Degree	Name of Student	Title of the Thesis	Name of University	Year Completed
1	Ph. D	Tejas Zaveri	Power Quality Improvement using Custom Power devices	Veer Narmad South Gujarat University	November 2012
2	Ph. D	N. G. Chothani	Digital Protection of Busbar	Sardar Patel University	November 2013
3	Ph. D	Vijay Makwana	Protection of Transmission Line Using Artificial Intelligence	Sardar Patel University	November 2013
4	Ph. D	P. H. Shah	Protection of Electrical Network during DG Interconnections: Problems & Solutions	Sardar Patel University	February 2014
5	Ph. D	Rakesh A. Patel	Predictive Condition Monitoring of Induction Motor using Intelligent Approach	Ganpat University, Gujarat	April 2015
6	Ph. D	U. B. Parikh	Control Switching Application of Circuit Breaker for long EHV Compensated Transmission Lines	Kadi University	Thesis Submitted

3. Type of Examination Evaluated:-

Sr. No.	Type of Examination	Number of candidates	Oral/ Written	Role	Number of Examinations Taken	Level of Examination
1	M. Tech. (Dissertations)	40	Oral	External Examiner	40	Post Graduate
2	B. Tech (Major Project)	20	Oral	External Examiner	20	Post Graduate
3	Developing Test for Electrical Engineering	120	Written	Subject Expert	120	Under Graduate

4. Pedagogically related experience

Sr. No.	Topic of workshop	Date	Period	Host Institute
1	Recent Advances in Instrumentation & Control Engineering <u>(Deliver Expert Lecture)</u>	March 5-9, 2007	1 week	B. R. Ambedkar National Institute of Technology, Jalandar, India
2	Object Oriented Programming JAVA	March 5 to April 1 2000	4 Week	Department of Computer Science, Sardar Patel University
3	Matlab analysis for Electrical Machines, Power system and control system	Nov 25-30,2002	1 Week	Nirma Institute of Technology Ahmedabad
4	Role of Technical Education for sustainable Development	Oct 13, 2002	1 day	A D Patel Institute of Technology, Gujarat, India
5	WTO-Opportunity or Threat To Technical education in	April	1 day	B & B Institute of

	the Context of Excellence & quality assurance	25,2003		Technology V.V.Nagar
6	Data & Knowledge Engineering	February 21, 2004	1 day	A D Patel Institute of Technology, Gujarat, India
7	Latest Trends in Communication Systems and Technology	March 13, 2004	1 day	A D Patel Institute of Technology, Gujarat, India
8	Energy Conservation Techniques	June 7-18, 2004	1 week	B & B Institute of Technology V.V.Nagar
9	Training Programme for MIPOWER Software- A step to quality education	September 6- 8 2007	3 Days	A D Patel Institute of Technology, Gujarat, India
10	Innovative Laboratory Practices for EE 151	August 8 2007	1 Day	A D Patel Institute of Technology, Gujarat, India

5. Evaluation of your own teaching

All the technical institutions in India directly come under All India Council for Technical Education (AICTE), New Delhi, India. Hence, there is a standard procedure to evaluate teaching of a faculty through feedback collected from a group of students. This feedback is collected by Head of the technical institution. The result of this feedback is clearly mentioned by Head of the institution in the self-appraisal form of the faculty member. Each faculty member has to fill the self-appraisal form every year and his promotion is based on the feedback given by the students. Head of the Institution has to suggest improvement (if required) to each faculty member based on feedback given by the students.

6. Textbooks and teaching material etc. for the higher educational sector

Sr. No.	Name of Authors	Title of Book	Name of Publisher	Year of Publication	Level of Book
1	Bhavesh Bhalja, R. P. Maheshwari & N. G. Chothani	Protection and Switchgear	Oxford University Press, New Delhi, India	2011	Undergraduate and Postgraduate
2	Bhavesh Bhalja, A. M. Shah & M. B. Astik	Elements of Electrical Engineering	ACMA Learning Pvt. Ltd; New Delhi, India	2011	Undergraduate
3	Bhavesh Bhalja and Vijay H. Makwana	Transmission Line Protection Using Digital Technology	Springer Science+ Business Media Singapore Pte Ltd; Singapore	2016	Undergraduate and Postgraduate

7. Pedagogical research

Sr. No.	Name of Conference	Location	Date
1	Computer Application in Electrical Engineering Recent Advances	Indian Institute of Technology Roorkee, India	28 Sept-1 Oct, 2005
2	14 th National Power System Conference (NPSC)	Indian Institute of Technology Roorkee, India	December 26-29, 2006
3	32 nd National System Conference (NSC)	Indian Institute of Technology Roorkee, India	December 17-19, 2008
4	24 th Canadian Conference on Electrical & Computer Engineering	Niagara Falls, Marriott Gateway, Ontario, Canada	May 8-11, 2011
5	International Electric Machine and Drive Conference	Niagara Falls, Marriott Gateway, Ontario, Canada	May 15-18, 2011
6	The Australian Power Engineering Conference	AUPEC 2015, Wollongong, Australia	27-30 September 2015

8. Administration of education

Sr. No.	Position Hold	Nature of service	Duration of Position	Place
1	Head of Electrical Engineering Department	Administration	4 Years & 6 months (01-12-2008 to 07-08-2013)	A. D. Patel Institute of Technology
2	Nodal Officer of Centre of Excellence in Automation	Erection and Commissioning	8 months	Pandit Deendayal Petroleum University
3	Officer of In-charge, Time Table Committee of Electrical Department	Prepare institute time table	6 months	Indian Institute of Technology Roorkee