

FACULTY-PROFILE



Name : Dr. KUSUM VERMA

Date of Birth : 04.03.1974

Present Post : Associate Professor
Electrical Engineering Department
Malaviya National Institute of

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Academic Qualifications : B. E. (Electrical Engineering) 1997
M. Tech. (Power System Engineering) (Honours) 2004
Ph.D (Electrical Engineering) 2013

Ph.D.Thesis : Power System Security Assessment and Preventive Control

Professional Experience : Teaching Experience - 26 Years
[Associate Professor (2018–till date),
Assistant Professor (2005– 2018), Lecturer (1999– 2005)]

Research Interests :AI Applications to Power System Operation and Control,
Power System Stability and Reliability, Wide Area Monitoring,
Integration of Distributed Energy Resources in Power Grids,
and Demand Response Management.

Google Scholar Link: <https://scholar.google.co.in/citations?hl=en&user=wZtfW94AAAAJ>

Journal Publications:

1. Kusum Dangi, K. R. Niazi, R. C. Bansal, “Application of Neural Networks for Power System Security Evaluation” International Journal of Electrical Energy Systems, Volume 2, Number 1, January-June 2010, pp. 35-47, ISSN: 0975-7147
2. M.Bhadu, Kusum Dangi, “Improvement of Transient Stability and Voltage Profile for a Multimachine Power System using STATIC COMPENSATOR (STATCOM)”, International Journal of Emerging Technologies and Applications in Engineering Technology and Sciences, Vol.4, Issue1, Jan-June 2011, pp.241-245.
3. Kusum Verma and K.R.Niazi, “Contingency Constrained Power System Security Assessment using Cascade Neural Network”, International Journal of Electrical Systems, pp.1-12, Vol. 8 Issue1,2012, ISSN:1112-5209.
4. Kusum Verma, K. R. Niazi, “Supervised learning approach to online contingency screening and ranking in power systems”, International Journal of Electrical Power and Energy Systems, vol.38, pp.97-104,2012, ISSN: 0142-0615
5. Kusum Verma, K. R. Niazi, “A coherency based generator rescheduling for preventive control of transient stability in power systems”, International Journal of Electrical Power and Energy Systems, Vol. 45, Issue 1, February 2013, pp.10-18, ISSN: 0142-0615
6. Shiv Shambhu Kumar Suman, Kusum Verma, “Artificial Intelligence based Classifier design for Power System Static Security Assessment”, International Journal of Innovative Research in Engineering Science and Technology (IJIREST), Vol.1, No.1, pp.19-24, April 2014.

7. Shahbaz.A.Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "On-line Transient Stability Assessment through Generator Rotor Angles Prediction Using Radial Basis Function Neural Network" Research Journal of Applied Sciences, Engineering and Technology, 8(14): pp.1665-1672, 2014.
8. Kusum Verma, K. R. Niazi, "Preventive control for transient security with generation rescheduling based on rotor trajectory index", Journal of Electrical Engineering & Technology, Vol.10, No.2, pp. 465-473, 2015.
9. Shahbaz.A.Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "Preventive and Emergency Control of Power System for Transient Stability Enhancement", Journal of Electrical Engineering & Technology, Vol.10, No.1, pp.83-91, 2015.
10. Shahbaz.A.Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "A unified control scheme for power system transient stability enhancement through preventive and emergency control", International Transactions on Electrical Energy Systems, vol.26, pp. 365–383, 2016
11. Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, "Dynamic Impact Analysis of DFIG-Based Wind Turbine Generators on Low Frequency Oscillations in Power System", IET Generation, Transmission & Distribution, Vol. 11, Issue 18, p. 4500 – 4510, December 2017.
12. Abhilash Kumar Gupta, Kusum Verma, Khaleequr Rehman Niazi, "Impact Analysis of DFIG Location on Low Frequency Oscillations in Power System", IET Journal of Engineering (Wiley), Vol 2017, Issue 13, p. 1413 – 1417.
13. Shahbaz.A.Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "Real-Time Monitoring of Post-Fault Scenario for Determining Generator Coherency and Transient Stability through ANN", IEEE Transactions on Industry Applications, vol.54, Issue 1, pp. 685-692, Jan/Feb 2018.
14. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Voltage Dependent Modelling of Fast Charging Electric Vehicle Load Considering Battery Characteristics", IET Electrical Systems in Transportation, Vol. 8 Issue 4, pp. 221-230, Dec2018.
15. Abhilash Kumar Gupta, Kusum Verma, Khaleequr Rehman Niazi, "Robust Coordinated Control for damping low frequency oscillations in high wind penetration power system", International Transactions on Electrical Energy Systems, Vol.29, Issue5, Feb2019.
16. Abhilash Kumar Gupta, Kusum Verma, Khaleequr Rehman Niazi, "Wide area coordinated control for low frequency oscillations damping in a wind integrated power system", IET Journal of Engineering, (Wiley), vol 2019, Issue 18, pp. 4941-4945, July2019. <https://doi.org/10.1049/joe.2018.9315>
17. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Impact of EV Fast Charging Station on Distribution System Embedded with Wind Generation" IET Journal of Engineering, (Wiley), Vol. 2019, Issue 18, pp. 4692-4697, 2019. <https://doi.org/10.1049/joe.2018.9322>
18. Mitul Gamit, Rajesh Kumar, Akanksha Shukla, Kusum Verma, "Supplementary frequency control in power systems via decentralized V2G/G2V support", IET Journal of Engineering, (Wiley), Volume 2019, Issue 18, July 2019, p. 5287 – 5291, 2019. <https://doi.org/10.1049/joe.2018.9324>
19. Sachin Sharma, N. Meena, K. R. Niazi, Kusum Verma, "Multiple DRPs to maximize the techno-economic benefits of distribution networks", IET Journal of Engineering, (Wiley), Volume 2019, Issue 18, July 2019, p. 5240 – 5244, 2019, <https://doi.org/10.1049/joe.2018.9336>
20. Sachin Sharma, K. R. Niazi, Kusum Verma, Rayees Ahmad Thokar, "Bi-level optimization framework for impact analysis of DR on optimal accommodation of PV and BESS in distribution system", International Transactions on Electrical Energy Systems, vol.29, Issue 9, DOI: 10.1002/2050-7038.12062, 2019
21. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Multi-Objective Synergistic Planning of EV Fast Charging Stations in Distribution System Coupled with

- Transportation Network”, IET Generation, Transmission & Distribution, vol.13, Issue 15, pp. 3421-3432, 2019.
22. Sachin Sharma, Khaleequr Rehman Niazi, Kusum Verma, Tanuj Rawat, “Impact of Multiple Battery Energy Storage System Strategies on Energy Loss of Active Distribution Network”, International Journal of Renewable Energy Research, Vol 9, Issue 4, pp. 1705-1711, 2019
 23. Sachin Sharma, Khaleequr Rehman Niazi, Kusum Verma, Tanuj Rawat, “A bi-level optimization framework for investment planning of distributed generation resources in coordination with demand response”, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Taylor & Francis, May 2020, DOI: 10.1080/15567036.2020.1758248
 24. Sachin Sharma, K.R. Niazi, Kusum Verma, Tanuj Rawat, “Coordination of different DGs, BESS and demand response for multiobjective optimization of distribution network with special reference to Indian power sector”, International Journal of Electrical Power and Energy Systems, vol.121, October 2020.
 25. Sachin Sharma, Khaleequr Rehman Niazi, Kusum Verma, Tanuj Rawat, “Impact of battery energy storage, controllable load, and network reconfiguration on contemporary distribution network under uncertain environment”, IET Generation, Transmission & Distribution, Vol 14, Issue 21, pp. 4719 - 4727, Sept2020
 26. Arvind Kumar, Preeti Sharma, Mahendra Bhadu, Hukam Chand Kumawat, Kusum Verma, “Performance Analysis of Robust Control Techniques for Load Frequency Control of Multi Area Power System”, Journal of Reliability: Theory & Applications, Special Issue no. 1(60) Vol.16, Pages: 76-89, ISSN: 1932-2321, 2021, DOI: <https://doi.org/10.24412/1932-2321-2021-160-70-75>, USA, Jan, 2021
 27. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, “A New Synchronized Data Driven based Comprehensive Approach to Enhance Real-Time Situational Awareness of Power System”, International Transactions on Electrical Energy Systems, Vol.31, Issue-5, May 2021, DOI: 10.1002/2050-7038.12887
 28. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, “Model free Robust Real-Time Severity Analyser using PMU measurement”, International Journal of Electrical Power and Energy Systems, vol.133, p.107333, Dec 2021.
 29. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, “New Data Driven Scheme for Real-Time Power System Transient Stability Assessment”, Journal of Electrical Engineering & Technology, Springer, 2022. <https://doi.org/10.1007/s42835-022-01326-6>, vol.18(3), pp.1745-1756
 30. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, Satyendra Singh, Majed A. Alotaibi, Hasmat Malik and Fausto Pedro García Márquez, “Data-Driven Unified Scheme to Enhance the Stability of Solar Energy Integrated Power System in Real-Time”, <https://doi.org/10.1109/ACCESS.2023.3325195>, IEEE Access, Vol.11, pp.118443-118461, 2023
 31. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, “Synchronized Data Driven Composite Scheme for Augmenting Power Grid Stability”, Arabian Journal for Science and Engineering, Volume 49, pages 6831–6846, <https://doi.org/10.1007/s13369-023-08481-6>, 2024
 32. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui, Kusum Verma, S. Singh, Majed A. Alotaibi, Hasmat Malik, Mohammed E. Nassar, “A novel synchronized data-driven composite scheme to enhance photovoltaic (pv) integrated power system grid stability”, Energy Reports, Volume 11, June 2024, Pages 895-907
 33. Tanmay Jain, Kusum Verma, Mahendra Bhadu, "N – 1 Security Criteria Based Integrated Deterministic and Probabilistic Framework for Composite Power System Reliability", Journal of Electrical and Computer Engineering, vol. 2024, Article ID 5518874, 21 pages, 2024. <https://doi.org/10.1155/2024/5518874>
 34. Tanmay Jain, Kusum Verma, “Reliability based Computational Model for Stochastic Unit Commitment of a Bulk Power System integrated with Volatile Wind Power”,

- International Journal of Reliability Engineering & System Safety, Volume 244, 2024, 109949, ISSN 0951-8320, <https://doi.org/10.1016/j.ress.2024.109949>, 2024
35. Tanmay Jain, Kusum Verma, “Reliability Evaluation of Composite Power Systems Integrated with Wind and Solar Energy Sources: A Comprehensive Review”, Iranian Journal of Science and Technology, Transactions of Electrical Engineering, Volume 48, pages 473–507, 2024
 36. Abhishek Kumar Gupta, Kusum Verma, “Temporal Assessment of Operational Resilience of Transmission Network and Adaptation Measures for a High-Impact Long Duration Cyclonic Windstorm”, Sustainable Energy, Grids and Networks, Volume 39, September 2024, 101465, <https://doi.org/10.1016/j.segan.2024.101465>
 37. Abhishek Kumar Gupta, Kusum Verma, “MCS-ML Based Line Vulnerability for Infrastructural Resilience Assessment with Multi-Wind Speed Cyclonic Zones”, Computers and Electrical Engineering, Volume 119, Part B, November 2024, 109575, 2024, <https://doi.org/10.1016/j.compeleceng.2024.109575>
 38. Tanmay Jain, Kusum Verma, “Reliability enhancement with coordinated operation of wind power and battery energy storage using machine learning based unit commitment decision”, Journal of Energy Storage, 111 (2025) 115455
 39. Akanksha Shukla, Mohammed Imran, Kusum Verma, Hitesh R. Jariwala, “Hybrid Control DC Microgrid Embedded with BESS and Multimode Adaptive Standalone PV”, International Transactions on Electrical Energy Systems, Volume 2025, Article ID 3773958, 18 pages, 2025. <https://doi.org/10.1155/etep/3773958>
 40. Tanmay Jain, Kusum Verma, “An Integrated Approach for Multi-Area Reliability Improvement with Risk based Contingency Analysis and Optimal Load Curtailment”, International Transactions on Electrical Energy Systems, vol. 2025, Article ID 7726984, 29 pages, 2025 <https://doi.org/10.1155/etep/7726984>
 41. Reliability and Synergy Analysis of PDN Integrated with Wind Generation and EV-FCS coupled Traffic Network", IEEE Access, vol. 13, pp. 147798-147817, 2025, doi: 10.1109/ACCESS.2025.3601186.
 42. Abhishek Kumar Gupta, Kusum Verma, “Bi-level Framework for Cost Effective Robustness and Responsiveness to Enhance Infrastructure Resilience of Transmission Network Against Cyclones”, Energy Reports, Vol.14, 2700–2719, 2025

Book Chapter Publications:

1. Authors: Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, Series: Lecture Notes in Electrical Engineering, Chapter Title: Interfacing Python with DlgSILENT Power Factory: Automation of Tasks, Book: Intelligent Computing Techniques for Smart Energy Systems, Chapter No: 110, Pages 1033-1037, Chapter DOI.:10.1007/978-981-15-0214-9_110, Series vol no.607, Springer Nature, Singapore, 2020.
2. Authors: Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, Series: Lecture Notes in Electrical Engineering, Chapter Title: Synchrophasor Measurements Assisted Naïve Bayes Classification Based Real – Time Transient Stability Prediction of Power System, Book: Intelligent Computing Techniques for Smart Energy Systems, Chapter No: 103, Pages 973-980, Chapter DOI.: 10.1007/978-981-15-0214-9_103, Series vol no.607, Springer Nature, Singapore, 2020.
3. Authors: Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, Series: Lecture Notes in Electrical Engineering, Chapter Title: Real-Time Low-Frequency Oscillations Monitoring and Coherency Determination in a Wind-Integrated Power System, Chapter No: 20, Pages 163-172, Book-Intelligent Computing Techniques for Smart Energy Systems, Chapter DOI.: 10.1007/978-981-15-0214-9_20, Series vol no.607, Springer Nature, Singapore, 2020. (Hardcover ISBN: 978-981-15-0213-2, Series ISSN: 1876-1100)

Conferences/Seminar Publications:

1. Kusum Dangi, Birdhi Chand, Diwaker Dangi, "Electricity from the Sun -The Solar Chimney" All India Seminar on 'Power Systems: Recent Advances and Prospects in 21st Century', organised by Electrical Engg. Deptt. MREC, held on 17th Feb. 2001.
2. P. Chitaranjan Sharma, Ishaan Pandiya, Dipak Swargari, Kusum Dangi, "MATLAB/GUI Simulation Tool for Power System Fault Analysis with Neural Network Fault Classifier", International Conference on Electrical Power and Energy Systems, MANIT, Bhopal, August 26-28, 2010.
3. M.Bhadu, Kusum Dangi, "GA Based Cost Optimization of STATCOM for Power System Stability Enhancement", International Conference on Electrical Power and Energy Systems, MANIT, Bhopal, August 26-28, 2010.
4. M.Bhadu, Kusum Dangi, "Power System Stability Enhancement of Multimachine Power System Using Static VAR Compensator", International Conference on Energy Optimization And Control, Government College of Engineering, Aurangabad, 20-22 September, 2010.
5. M.Bhadu, Kusum Dangi, "Transient Stability Analysis of a Multimachine Power System", Proceedings of National Conference on Computational Engineering: Modelling, Simulation and Optimisation, CEMSO-2010, Defence Institute of Advanced Technology, Pune, 8-10 Dec 2010, pp.9-17.
6. N. Inani, A.Sharma, S.Pincha, Kusum Verma, "Power System Contingency Analysis for Steady State Security Assessment using Artificial Neural Network", Proceedings of National Conference on Advances & Research in Electrical System Technology, AREST-2011, Arya Institute of Engineering & Technology, Jaipur, 23-24 April 2011, pp. 146-152.
7. Kusum Verma, K.R.Niazi, "Determination of vulnerable machines for online transient security assessment in smart grid using artificial neural network", Annual IEEE India Conference on 'Engineering Sustainable Solutions' (INDICON 2011), BITS Pilani-Hyderabad Campus, Hyderabad, Andhra Pradesh, India 16-18 Dec.2011.
8. Kusum Verma, K.R.Niazi, "Generator Coherency Determination in a Smart Grid using Artificial Neural Network", 2012 IEEE PES General Meeting, 22 - 26 July 2012, San Diego, California, USA.
9. Keerti Rawal, Kanika Bathra, Priyanka Amteda, Jaya Choudhary, Kusum Verma, "Graph Theory Based Generator Rescheduling for Power System Security Enhancement", Proceedings of 3rd National Conference on Power Electronics and Intelligent Control, NCPEIC-2012, MNIT Jaipur, 1-2 November 2012, pp. 161-165.
10. Shiv Shambhu Kumar Suman, Kusum Verma, "Artificial Intelligence based Classifier design for Power System Static Security Assessment", Proceeding of International Conference on Advance Trends in Engineering & Technology (ICATET-2013), Arya College of Engineering & IT, Jaipur, 19-20 Dec. 2013, pp.53-57. **(Best Paper Award)**
11. Kusum Verma, K. R. Niazi, "Rotor Trajectory Index for Transient Security Assessment using Radial Basis Function Neural Network", 2014 IEEE PES General Meeting, 27 - 31 July 2014, Washington D.C., USA.
12. Shahbaz. A. Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "Wide Area Synchrophasor Measurements based Transient Stability Assessment and Emergency Control" 2014 IEEE PES General Meeting, 27 - 31 July 2014, Washington D.C., USA.
13. Shahbaz. A. Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "Artificial neural network based early detection of real-time transient instability for initiation of emergency control through wide-area synchrophasor measurements" IEEE International Conference on Computer, Communication and Control (IC4), MGI Indore, INDIA. September 10 -12, 2015. (DOI:10.1109/IC4.2015.7375733)
14. Neha Agarwal, Kusum Verma, K. R. Niazi, Anil Swarnkar, Nikhil Gupta, "Optimal Penetration of Renewable Sources for Distribution System Performance Improvement", 2015 IEEE PES General Meeting, 26 - 30 July 2015, Denver, Colorado, USA.

15. Akanksha Shukla, Kusum Verma, Shahbaz. A. Siddiqui, "Optimal Voltage Regulation of a Distribution Network by Output Power Management of DGs", 12th IEEE India International Conference (INDICON 2015), Jamia Millia Islamia, New Delhi, India, 17-20 Dec.2015.
16. Shahbaz. A. Siddiqui, Kusum Verma, K. R. Niazi, Manoj Fozdar, "Real-Time Identification of Generator Coherent Groups through Synchrophasor Measurements and ANN", 12th IEEE India International Conference (INDICON 2015), Jamia Millia Islamia, New Delhi, India, 17-20 Dec.2015. **(Best Paper Award)**
17. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Online Voltage Stability Monitoring of Distribution System using Optimized Support Vector Machine", 6th IEEE International Conference on Power Systems (ICPS 2016), Indian Institute of Technology Delhi, Hauz Khas, New Delhi, India, 4-6 March 2016.
18. Harita Shah, Kusum Verma, "PMU-ANN based Approach for Real Time Voltage Stability Monitoring", 6th IEEE International Conference on Power Systems (ICPS 2016), Indian Institute of Technology Delhi, Hauz Khas, New Delhi, India, 4-6 March 2016.
19. Akanksha Shukla, Kusum Verma, Shahbaz. A. Siddiqui, "Voltage Stability Improvement of Distribution Networks by Enhancing DGs Impacts", 2016 IEEE First International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES 2016), 4-6 July, 2016, Delhi Technological University, India.
20. Abhilash Kumar Gupta, Kusum Verma, "PMU-ANN based Real Time Monitoring of Power System Electromechanical Oscillations", 2016 IEEE First International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES 2016), 4-6 July, 2016, Delhi Technological University, India.
21. Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, "Real Time Intelligent Oscillatory Stability Monitoring and Coherent Groups Identification", IEEE Seventh POWER INDIA International Conference, Govt. Engineering College Bikaner, November 25-27, 2016.
22. Harita Shah, Kusum Verma, "Voltage Stability Monitoring by Different ANN Architectures using PCA based Feature Selection", IEEE Seventh POWER INDIA International Conference, Govt. Engineering College Bikaner, November 25-27, 2016.
23. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Consumer Perspective based Placement of Electric Vehicle Charging Stations by Clustering Techniques", 19th National Power Systems Conference, NPSC -2016, 19-21 Dec.2016, IIT Bhubaneswar.
24. Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, "Intelligent Wide Area Monitoring of Power System Oscillatory Dynamics in Real Time", International conference on Advanced Computing and Communication Systems ICACCS 2017, Coimbatore, Jan.6-7, 2017.
25. Chinnu Mariam Baby, Kusum Verma and Rajesh Kumar, "Artificial Neural Network based Short Term Wind Speed Forecasting: A Case Study of Rajasthan", International conference on Advanced Computing and Communication Systems ICACCS 2017, Coimbatore, Jan.6-7, 2017.
26. Chinnu Mariam Baby, Kusum Verma and Rajesh Kumar, "Short Term Wind Speed Forecasting Using Regression Based Methods", International Conference on Telecommunication, Power Analysis and Computing Techniques (ICTPACT-2017), Chennai, April 6-8, 2017
27. Chinnu Mariam Baby, Kusum Verma and Rajesh Kumar, "Short Term Wind Speed Forecasting and Wind Energy Estimation: a Case Study of Rajasthan", IEEE International Conference on Computer, Communications and Electronics (COMPTHELIX 2017), Jaipur, July 1-2, pp. 275- 280, 2017.
28. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Multi-Stage Voltage Dependent Load Modelling of Fast Charging Electric Vehicle", 6th IEEE International Conference on Computer Application in Electrical Engineering - Recent Advances (CERA 17), IIT Roorkee, India, October 5-7, 2017.

29. Kuldeep, Kusum Verma, "Transient Stability Assessment of DFIG Integrated Distribution System", 6th IEEE International Conference on Computer Application in Electrical Engineering - Recent Advances (CERA 17), IIT Roorkee, India, October 5-7, 2017.
30. A.K. Gupta, K. Verma, K.R. Niazi, "Impact Analysis of DFIG Location on Low Frequency Oscillations in Power System", 6th IET Renewable Power Generation Conference (RPG 2017), Wuhan, China, 19-20 October 2017.
31. Abhilash Kumar Gupta, Kusum Verma, Khaleequr Rehman Niazi, "Contingency Constrained Optimal Placement of PMUs For Wide Area Low Frequency Oscillation Monitoring", 7th International Conference on Power Systems, (ICPS 2017), Pune, India, December 21 - 23, 2017.
32. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Optimal PMU Placement for Coordinated Observability of Power System under Contingencies", IEEE International Conference on Circuits and Systems (ICCS 2017), Kerala, India, 20-21 December 2017.
33. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Optimal PMU Placement for Complete Power System Observability under (P-1) Contingency", IEEE International Women in Engineering Conference on Electrical and Computer Science Engineering (WIECON-ECE- 2017), Dehradun, India, 18-19 December 2017.
34. Samidha Mridul Verma, Vasanth Reddy, Kusum Verma, Rajesh Kumar, "Markov Models based Short Term Forecasting of Wind Speed for Estimating Day-Ahead Wind Power", IEEE International Conference on Power, Energy, Control and Transmission Systems (ICPECTS 2018), Chennai, 22-23 February 2018.
35. Abhilash Kumar Gupta, Kusum Verma, K.R. Niazi, "Power system low frequency oscillations monitoring and generator coherency determination in real time", IEEE PES ISGT Asia 2018, Singapore, 22-25 May 2018.
36. Vasanth Reddy, Samidha Mridul Verma, Kusum Verma, Rajesh Kumar, "Hybrid Approach for Short Term Wind Power Forecasting", IEEE 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT 2018), IISc Bengaluru, 10-12 July 2018.
37. A. Gupta, K. Verma, K. Niazi, "Wide area coordinated control for low frequency oscillations damping in a wind integrated power system", IET Renewable Power Generation (RPG) Conference 2018, Denmark, 26-27 September, 2018.
38. M. Gamit, R. Kumar, A. Shukla, K. Verma, "Supplementary frequency control in power systems via decentralized V2G/G2V support", IET Renewable Power Generation (RPG) Conference 2018, Denmark, 26-27 September, 2018.
39. A Shukla, K Verma, R Kumar, "Impact of EV fast charging station on distribution systems embedded with wind generation", IET Renewable Power Generation (RPG) Conference 2018, Denmark, 26-27 September, 2018.
40. S. Sharma, N. Meena, K. Niazi, K. Verma, "Multiple demand response programs to maximize the techno-economic benefits of distribution networks", IET Renewable Power Generation (RPG) Conference 2018, Denmark, 26-27 September, 2018.
41. Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, "Wide-area PMU-ANN based monitoring of low frequency oscillations in a wind integrated power system", 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.
42. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Planning of Fast Charging Stations in Distribution System Coupled with Transportation Network for Capturing EV flow", 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.
43. Mitul Gamit, Akanksha Shukla, Rajesh Kumar, Kusum Verma, "Decentralized PEVs Energy Management Scheme for Supplementary Frequency Regulation Considering Mobility Behaviour", 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.

44. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Interfacing Python with DIgSILENT Power Factory: Automation of Tasks", Intelligent Computing Techniques for Smart Energy Systems (ICTSES 2018), 22-23 December 2018, Manipal University Jaipur.
45. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Synchrophasor Measurements assisted Naïve Bayes Classification based Real – Time Transient Stability Prediction of Power System", Intelligent Computing Techniques for Smart Energy Systems (ICTSES 2018), 22-23 December 2018, Manipal University Jaipur.
46. Abhilash Kumar Gupta, Kusum Verma, K. R. Niazi, "Real-time low frequency oscillations monitoring and coherency determination in a wind integrated power system", Intelligent Computing Techniques for Smart Energy Systems (ICTSES 2018), 22-23 December 2018, Manipal University Jaipur.
47. Akanksha Shukla, Kusum Verma, Rajesh Kumar, "Planning of EV Fast Charging Stations for Distribution System Coupled with Transportation Network", IEEE PES General Meeting, 4-8 August, 2019, Atlanta, USA.
48. Abhilash Kumar Gupta, Akanksha Shukla, Kusum Verma and K. R. Niazi, "Dynamic Impact Analysis of Wind Integration on Small Signal Stability of Power System", in IEEE International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC 2020), Mathura, UP, pp. 395-399, 28-29 Feb. 2020.
49. Sachin Sharma, Khaleequr Rehman Niazi, Kusum Verma, Tanuj Rawat, "An Efficient Optimization Approach for coordination of Network Reconfiguration and PV Generation on Performance Improvement of Distribution Network", Electric Power and Renewable Energy Conference-2020 (EPREC-2020), Jamshedpur, India, May 29th-30th, 2020.
50. S. Sharma, K.R. Niazi, K. Verma and T. Rawat, "A comparative analysis of demand response on different operational strategies of battery energy storage system for active distribution system", 1st International Conference on Green Technology for Smart City and Society, 13-14 August 2020.
51. Arvind Kumar, Preeti Sharma, Mahendra Bhadu, Hukam Chand Kumawat and Kusum Verma, "Performance Analysis of Robust Control Techniques for Load Frequency Control of Multi Area Power System", International Conference on Research and Innovations in Science, Engineering & Technology (ICRISET2020), Gujarat, 04-05 September, 2020
52. Shreyanshu Garg, Ashvi Agrawal, Shubham Goyal and Kusum Verma, "Day Ahead Solar Irradiance Forecasting Using Markov Chain Model", 17th IEEE India Council International Conference (INDICON 2020), 11-13 December 2020, NSUT, Delhi.
53. Shreyanshu Garg, Ashvi Agrawal, Shubham Goyal and Kusum Verma, "Day Ahead Solar Irradiance Forecasting using Different Statistical Techniques", 9th IEEE Power Electronics, Drives and Energy Systems Conference, PEDES 2020, 16-19 December 2020, MNIT, Jaipur.
54. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Enhanced Real Time Power System Monitoring by Detecting Event Signature", FlexEV-2021: Flexible Electronics for Electric Vehicles, Manipal University Jaipur, India, March 18-19, 2021.
55. Tanmay Jain, Kusum Verma, "MCS-ANN based Hybrid Approach for Reliability Assessment of Composite Power System", 2021 IEEE 4th International Conference on Computing, Power and Communication Technologies (GUCON), Kuala Lumpur, Malaysia, 24-26 September 2021.
56. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Transient Stability Assessment of Power System with Solar PV Energy penetration through DIgSILENT Power Factory and Python", 5th International Conference on Emerging Technologies; Micro to Nano (ETMN-2021), Manipal University Jaipur, 8-9 October 2021.
57. Tanmay Jain, Kusum Verma, "Optimal load curtailment to improve reliability of composite power system with N-1 contingency", 2nd IEEE International Conference on

Smart Technologies for Power, Energy & Control (STPEC-2021), Chhattisgarh, 19 -22 December 2021.

58. Munzaa Shaikh, Kusum Verma, "Comparison of Multiperiod Deterministic and Stochastic UC Considering Renewable Uncertainties and Contingencies", 3rd IEEE International Conference of Emerging Technologies (INCET-2022), Belgaum, Karnataka, India, 27-29 May 2022.
59. Devashish, Kusum Verma, "Optimal load frequency control of interconnected two area non-reheat thermal-thermal power system", 3rd IEEE International Conference of Emerging Technologies (INCET-2022), Belgaum, Karnataka, India, 27-29 May 2022
60. Bhupesh Agarwal, Kusum Verma, "Two Stage Framework for Techno-Economic Analysis of Electricity Pool Markets Integrated with Stochastic Wind Power", 3rd IEEE International Conference of Emerging Technologies (INCET-2022), Belgaum, Karnataka, India, 27-29 May 2022.
61. Munzaa Shaikh, Kusum Verma, "Contingency Constrained Stochastic UC Decision with Wind Power Generation and Energy Storage", Second IEEE International Conference on Next Generation Intelligent Systems (ICNGIS 2022), Kerala, 29-31 July 2022.
62. Abhishek Kumar Gupta, Kusum Verma, "A Probabilistic Approach to Assess Quantitative Resilience of Transmission Line During Cyclone", 2022 IEEE 10th Power India International Conference (PIICON), NIT Delhi, India, 25 – 27 November 2022.
63. Ghanshyam Meena, Kusum Verma and Akhilesh Mathur, "FVSI Based Meta-heuristic Algorithm for Optimal Load Shedding to Improve Voltage Stability", 2022 IEEE 10th Power India International Conference (PIICON), NIT Delhi, India, 25 – 27 November 2022.
64. Anurag Tyagi, Yash Bhandari, Kusum Verma and Varnika Gulati, "Inverse Time Overcurrent Relaying Decision for Protection of Three Phase Transmission Line", 2022 IEEE 10th Power India International Conference (PIICON), NIT Delhi, India, 25 – 27 November 2022.
65. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma "Model Free Data-Driven Scheme to Assess Transient Instability of Solar Energy Penetrated Power System", 22nd National Power Systems Conference (NPSC 2022), IIT Delhi, New Delhi, India, 17-19 December 2022.
66. Abhishek Kumar Gupta, Kusum Verma, "Assessment of Infrastructural and Operational Resilience of Transmission Lines During Dynamic Meteorological Hazard", 14th International Conference on Computing, Communication and Networking Technologies (ICCCNT), IIT Delhi, India, 06 – 08 July 2023.
67. Tanmay Jain, Kusum Verma, "Supervised Learning for Online Reliability based UC Decision for Wind Integrated Composite Power System", 14th International Conference on Computing, Communication and Networking Technologies (ICCCNT), IIT Delhi, India, 06 – 08 July 2023.
68. Tanmay Jain, Kusum Verma, "Online Approach for Short Term Flexibility Ranking of Thermal Power Plants using ANN", 49th Annual Conference of IEEE Industrial Electronics Society (IECON), Singapore, 16 – 19 October 2023.
69. Varnika Gulati, Kusum Verma, "Supervised Machine Learning to Identify Loss of Excitation and Power Swing in a Generator", 7th International Conference on Computer Applications in Electrical Engineering - Recent Advances, CERA 2023 by IEEE at IIT Roorkee, India 27-29 October, 2023.
70. Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui and Kusum Verma, "Leveraging Synchronized Measurements for Novel Wide Area Event Detector", Springer Nature's International Conference (Sigmaa-2023), (Advances in Intelligent Systems and Computing Book Series), Delhi, 15 – 16 December 2023.
71. Prahlad Mundotiya, Charul Jain and Kusum Verma, "Islanding Detection by Current Based Technique in Indian Distribution Grid", 15th International IEEE Conference on

- Computing, Communication and Networking Technologies (ICCCNT), June 24 - 28, 2024, IIT - Mandi, Himachal Pradesh, India.
72. Arshad Ali, Kusum Verma, "PMU Data Driven Machine Learning Regression Method for Real Time Voltage Stability Assessment", 3rd IEEE International Conference on Control, Computing, Communication and Materials (ICCCCM 2024), 10-11 August 2024, Prayagraj, India. **(Best Paper Award)**
 73. Abhishek Kumar Gupta, Kusum Verma, "Impact Assessment of Heat Waves on Resilience of Power System Components", IEEE Region 10 Symposium (TENSYP 2024), 27 - 29 September 2024, New Delhi, India.
 74. Apoorv Ravi Pandey, Kusum Verma, "Determining Locational Hosting Capacity of DERs in Distribution System using Machine Learning", IEEE Region 10 Symposium (TENSYP 2024), 27 - 29 September 2024, New Delhi, India.
 75. Abhishek Kumar Gupta, Kusum Verma, "Optimal Structural Robustness to Enhance Transmission Line Resilience for HILP Events", 2024 IEEE 11th Power India International Conference (PIICON), 10-12 December, Jaipur, 2024.
 76. Apoorv Ravi Pandey, Kusum Verma, "Optimizing DER Hosting Capacity and Power Loss Minimization in Distribution System with GWO", 2024 IEEE 11th Power India International Conference (PIICON), 10-12 December, Jaipur, 2024.
 77. Abhishek Kumar Gupta, Kusum Verma, "Optimal Robustness to Enhance Transmission System Resilience Against Extreme Winds", 5th IEEE International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFet 2025), July 9–12, 2025, Jaipur.
 78. Apoorv Ravi Pandey, Kusum Verma, "Hybrid LSTM-GWO Approach for Optimal Hosting Capacity of Solar PV in Distribution System", IEEE 5th International Conference in Power Engineering Application (ICPEA 2025), 14th – 15 July 2025, Malaysia.
 79. Abhishek Kumar Gupta, Kusum Verma, "Resilience and Risk Assessment of Transmission Systems Under Cyclonic Winds", IEEE 5th International Conference in Power Engineering Application (ICPEA 2025), 14th – 15 July 2025, Malaysia.
 80. Charul Jain and Kusum Verma, "Frequency Response in Power System with High Wind Power Penetration Under Three-Phase Faults", IEEE 5th International Conference in Power Engineering Application (ICPEA 2025), 14th – 15 July 2025, Malaysia.
 81. Abhishek Kumar Gupta, Kusum Verma, "Physics Based Impact of Heat Waves on Vulnerability of Transmission Lines and Generators", IEEE International Conference on Smart Power, Energy, Renewables, and Transportation (IEEE-SPERT 2025), Surat, India, 22 – 24 December 2025
 82. Ajay Kumar Pal, Kusum Verma, Munazza Shaikh, Akanksha Shukla, "Voltage Profile Improvement in Solar PV Integrated Grid with Hybrid Energy Storage System", IEEE International Conference on Smart Power, Energy, Renewables, and Transportation (IEEE-SPERT 2025), Surat, India, 22 – 24 December 2025.
 83. Munazza Shaikh, Kusum Verma, Akanksha Shukla, "Techno-Economic Analysis for Placement of Wind and Energy Storage with Multi-Period UC Decision", IEEE International Conference on Smart Power, Energy, Renewables, and Transportation (IEEE-SPERT 2025), Surat, India, 22 –24 December 2025.

Membership of Scientific and Professional Societies:

1. Senior Member, IEEE
2. Senior Member, IEEE PES (Power & Energy Society)
3. Senior Member, IEEE IAS (Industry Applications Society)
4. Member, IEEE Smart Grid Community
5. Member, IEEE Climate Change Technical Community
6. Life Member, IE (I) Institution of Engineers
7. Life Member, ISTE (Indian Society for Technical Education)

Member, Editorial Board:

1. Academic Editor, Member Editorial Board, Journal of Electrical and Computer Engineering- Power Systems (E-SCI), Wiley (from 23-08-2023 till date)
2. Academic Editor, Member Editorial Board, International Transactions on Electrical Energy Systems (SCI-E) Wiley (from 24-01-2024 till date)
3. Associate Editor, e-Prime - Advances in Electrical Engineering, Electronics and Energy, Elsevier (18 June 2024-21May 2025)

R&D Projects:

S.No.	Project Title	Funding Agency	Duration	Amount	Role	Status
1.	Condition Monitoring and Efficient Usage of Wind Farms using Advanced Prediction Models (R&D/2016/2593)	Department of Science and Technology, Government of Rajasthan, Jaipur	2 years (2016 – 2018)	Rs. 4,53,600/-	Principal Investigator (PI)	Completed
2.	Machine Learning Based Predictive Analytics for Monitoring Operation of Adani Power Plants Against Weather Events	Adani Power Limited, Ahmedabad, Gujarat, India.	2 years (2024 – 2026)	Rs. 36,85,088/-	Principal Investigator	Ongoing

Patents:

S.No	Title of the Patent	Inventors	Reg./Ref. No.	Date of Filing	Date of Award	Organization	Status
1.	Method for Reliability Based Stochastic Unit Commitment Model for Wind Integrated Bulk Power System	Dr. Kusum Verma, Tanmay Jain	202411031237	18-04-2024	Granted (Patent No.568848) 18-07-2025	Patent Office, Government of India, New Delhi	Granted (Patent Office Journal) 18-07-2025
2.	A Novel Comprehensive Approach to Detect Power System Events in Real Time	Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui, Kusum Verma	202311055373	18-08-2023 (Filed)		Indian Patent Office, New Delhi	Published (Patent Office Journal) 15-09-2023
3.	Real-Time Power System Transient Stability Assessment Using a New Data-Driven Technique	Divya Rishi Shrivastava, Shahbaz Ahmed Siddiqui, Kusum Verma	202311070060	16-10-2023 (Filed)		Indian Patent Office, New Delhi	Published (Patent Office Journal) 24-11-2023

Courses Taught (UG Level):

1. Operation & Control of Power Systems
2. Power System Switchgear and Protection
3. Basic Electrical Engineering
4. Electronic Devices and Circuits

Courses Taught (PG Level):

1. Power System Optimization & Control
2. Optimal Operation & Control of Power System
3. Advanced Power System Protection

Syllabus Designed: (As per NEP)

1. Operation & Control of Power Systems (Theory-UG-Core Course)
2. Electrical Software and Simulation Lab (Lab-UG- Core Course)
3. Power System Stability (Theory-UG-Elective Course)
4. Advance Power System Protection (Theory-UG- Honours Course)
5. Advanced Power System Protection (Theory-PG- Core Course)
6. Power System Optimization and Control (Theory-PG- Core Course)

Short Term Courses/Conferences/Seminars/Workshops Organized:

1. Coordinator, self-financed Short Term Course on “Advanced Optimization Techniques” from 18.05.2015 to 22.05.2015 at MNIT, Jaipur.
2. Coordinator, self-financed One day Workshop on “MATLAB Programming for Research Scholars” on 14.09.2015 at MNIT, Jaipur.
3. Coordinator, self-financed One day Workshop on “Research Publishing Tools” on 21.09.2015 at MNIT, Jaipur.
4. Coordinator, Short Term Course on “Smart Grid Technologies” from 02.11.2015 to 06.11.2015 at MNIT, Jaipur.
5. Coordinator, self-financed Short Term Course on “Advanced Optimization Techniques” from 21.11.2016 to 25.11.2016 at MNIT, Jaipur.
6. Co-coordinator, two week Faculty Development Program on ‘Advance Optimization Techniques (AOT-2017)’ from 6.10.2017 to 15.10.2017 organized by E&ICT Academy, at MNIT, Jaipur.
7. Coordinator, two week Faculty Development Program on ‘Advanced Optimization Techniques (AOT-2018)’ from 12.10.2018 to 21.10.2018 sponsored by E&ICT Academy and TEQIP-III at MNIT, Jaipur.
8. Member, Conference Secretariat, Intelligent Computing Techniques for Smart Energy Systems (ICTSES 2018), Manipal University Jaipur, 22-23 December,2018

Short Term Courses Attended:

1. AICTE/ISTE sponsored Short-Term Training Program on “Modern Power Electronics Systems and their Applications for Industrial Drives/Motors” from 21/10/1999 to 03/11/1999 at Malaviya Regional Engineering College, Jaipur.
2. AICTE/ISTE sponsored Short-Term Training Program on “Recent Advances in Power Electronics & its Applications” from 12/06/2000 to 24/06/2000 at Malaviya Regional Engineering College, Jaipur.
3. AICTE/ISTE sponsored Short-Term Training Program on “Modern Trends in Power Electronics and Industrial Drives” from 18/06/2001 to 30/06/2001 at Malaviya Regional Engineering College, Jaipur.
4. AICTE/ISTE sponsored Short-Term Training Program on “Recent Advances in Power Conversion & Intelligent Motion” from 10/06/2002 to 22/06/2002 at Malaviya Regional Engineering College, Jaipur.

5. TEQIP sponsored Short Term Faculty Development Program on 'Computational Techniques in Engineering' from 16.10.2007 to 20.10.2007 at MNIT, Jaipur.
6. TEQIP sponsored Short Term Faculty Development Program on "Operation and Control of Modern Power Systems (OCMPS)" from 7.07.2008 to 18.07.2008 at MNIT, Jaipur.
7. TEQIP sponsored Short Term Faculty Development Program on "Soft Computing Skills in Engineering" from 11.12.2008 to 24.12.2008 at MNIT, Jaipur.

Conference/ Seminar/ Workshops Attended:

1. National Seminar on "Sustainable Energy Options For the new Millennium" in Sixteenth Convention of Electrical Engineers held at Jaipur, organized by The Institution of Engineers (India), Rajasthan State Centre. (25Nov.2000-26 Nov. 2000)
2. AICTE sponsored All India Seminar on "Power Systems: Recent Advances and Prospects in 21st Century (PSRAP21C)" at MREC, Jaipur. (Feb.2001)
3. National Workshop on "Opportunities in IT Enabled Services", organized by IIP Cell, MNIT, Jaipur. (March 2002)
4. National Seminar on "Performance Excellence by Technical Advancement", organized by IIP Cell, MNIT, Jaipur. (March 2002)
5. National Workshop on "Call Centres: Techno-Managerial Aspects", organized by IIP Cell, MNIT, Jaipur. (June2002)
6. TEQIP & CEP Workshop on "Learning Theory & Support Vector Machines", MNIT, Jaipur. (May2007)
7. Annual IEEE India Conference on 'Engineering Sustainable Solutions' (INDICON 2011), BITS Pilani- Hyderabad Campus, Hyderabad, Andhra Pradesh, India (16 -18 Dec.,2011)
8. 2012 IEEE PES General Meeting, San Diego, California, USA. (22-26 July 2012)
9. 2014 IEEE PES General Meeting, Washington D.C., USA. (27-31 July 2014)
10. 12th IEEE India International Conference (INDICON 2015), Jamia Millia Islamia, New Delhi, India, 17-20 Dec.2015
11. IEEE PES ISGT Asia 2018, Singapore, 22-25 May 2018
12. 8th IEEE India International Conference on Power Electronics (IICPE-2018),13 -15 Dec.2018)
13. IEEE 11th Power India International Conference (PIICON 2024), MNIT Jaipur, 10 -12 Dec.2024

Expert Lecture/ Talk/Keynote Delivered:

1. Delivered Expert Lecture on "Introduction to Artificial Intelligence Applications in Power Systems", in TEQIP Sponsored Online Short-Term Training Programme on "AI Applications in Power Systems & Power Electronics" (19/12/2022 - 23/12/2022), Government Engineering College, Thrissur, Kerala.
2. Delivered Expert Lecture on 'Wide-Area Visualization for Operational Analysis of Deregulated Power Systems' in Short Term Training Program (STTP) on Sustainable Development and Recent Advances in Electrical Engineering at Department of Electrical Engineering, SVNIT Surat, Gujarat (26-30 September,2022)
3. Delivered Expert Lecture in Two Week Faculty Development Program on "Advanced Optimization Techniques" from 12.10.2018 to 21.10.2018 at MNIT, Jaipur.
4. Delivered Expert Lecture in Two Week Faculty Development Program on "Advanced Optimization Techniques (AOT-2017)" from 6 Oct - 15 Oct, 2017 at MNIT, Jaipur.
5. Delivered Expert Lecture in Short Term Course on "Advanced Optimization Techniques" from 21.11.2016 to 25.11.2016 at MNIT, Jaipur.
6. Delivered Expert Lecture in Short Term Course on "Smart Grid Technologies" from 02.11.2015 to 06.11.2015 at MNIT, Jaipur.

7. Delivered Expert Lecture in Short Term Course on “Advanced Optimization Techniques” from 18.05.2020 to 22.05.2020 at MNIT, Jaipur.
8. Delivered Expert Lecture in One day Workshop on “MATLAB Programming for Research Scholars” on 14.09.2020 at MNIT, Jaipur.
9. Delivered Expert Lecture in Short Term Course on "Trends and Challenges in Emerging Power System" from October 19-23, 2020 at MNIT, Jaipur.

Technical Session Chair/ Track Chair/Member TPC: (In MNIT)

1. Technical Session Chair, 5th IEEE International Conference on Sustainable Energy and Future Electric Transportation (IEEE SeFet 2025), 9–12 July 2025.
2. Session Chair, IEEE 11th Power India International Conference (PIICON 2024), 10-12 December 2024, MNIT Jaipur.
3. Session Chair, 10th IEEE India International Conference on Power Electronics, Drives and Energy Systems (PEDES 2022), 14th-17th December 2022, MNIT Jaipur.
4. Technical Track Chair, 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.
5. Session Chair, 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.
6. Session Chair, 8th IEEE International Conference on Power Systems (ICPS 2019), 20-22 December 2019, MNIT Jaipur.
7. Member, Technical Committee, 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.

Technical Session Chair/ Track Chair/Member TPC: (Outside MNIT) Outreach Activity

1. Session Chair, 3rd IEEE International Conference of Emerging Technology (INCET 2022), IEEE Bangalore Section, Karnataka, 27-29 May 2022.
2. Session Chair, 5th International Conference on Emerging Technologies: Micro to Nano (ETMN 2021), jointly organized by Manipal University Jaipur, India and Universite Du Quebec En Outaouais, Canada, 8-9 October 2021.
3. Program Committee Chair and Reviewer, International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (ICSTACE2021), Springer, 11th -12th November 2021, SVNIT, Surat, Gujarat.
4. Session Chair, International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (ICSTACE2021), 11th -12th November 2021, SVNIT, Surat, Gujarat.
5. Member, Advisory Committee, International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (ICSTACE2021), 11th -12th November 2021, SVNIT, Surat, Gujarat.
6. Member, Technical Program Committee, International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (ICSTACE2021), 11th -12th November 2021, SVNIT, Surat, Gujarat.
7. Member, Advisory Committee, International Conference on Sustainable Development Goals and Gender Perspective, 25 -26 October 2021, SVNIT, Surat, Gujarat.
8. Session Chair, IEEE PES ISGT Asia, Singapore, 22-25 May 2018
9. Session Chair, International Conference on Intelligent Computing Techniques for Smart Energy Systems (ICTSES 2018), 22-23 December 2018, Manipal University Jaipur.
10. Member, Technical Committee, 5th International Conference on Power Science and Engineering, ICPSCE 2016, Venice, Italy, Dec 14-17, 2016.
11. Member, Technical Committee, 6th International Conference on Power Science and Engineering, ICPSCE 2017, St. Petersburg, Russia, Dec 2-4, 2017.

12. Member, National Advisory Committee, National Conference on Recent Advancements in Power System Engineering, 2015, VIT, Jaipur.
13. Member, Technical Program Committee, 12th IEEE India International Conference (INDICON 2015), Jamia Millia Islamia, New Delhi, India, 17-20 Dec.2015.

Ph.D. Supervision:

1. Monitoring and Control of Low Frequency Oscillations in Power System – Abhilash Kumar Gupta (Awarded, June 2019)
2. Optimal Planning and Impact Analysis of Electric Vehicle Fast Charging Stations in Distribution Systems - Akanksha Shukla (Awarded, November 2019)
3. Demand Response Management in Distribution System– Sachin Sharma (Awarded, December 2020)
4. Investigation on Wide Area Monitoring, Assessment and Control of Power System – Mr. Divyarishi Shrivastava (Awarded, October 2022)
5. Reliability Evaluation of Composite Power Systems with Integration of Renewable Energy Sources–Tanmay Jain (Awarded, December 2024)
6. Impact of Weather Events on Operational and Infrastructural Resilience of Power Grids - Abhishek Kumar Gupta (Ongoing)
7. DER Hosting Capacity Analysis in Distribution Systems - Apoorv Ravi Pandey (Ongoing)
8. Application of Hybrid Energy Storage for Renewable Integration in Bulk Power Systems- Munazza Shaikh (Ongoing)

M.Tech. Dissertation Supervision:

1. Simulation and Analysis of DFIG System with Wind Turbine implementing Fuzzy Logic Controller – Shivraj Sharma (2009)
2. Optimal Operation of Multimachine Power System for Stability Improvement using STATCOM and Economic Load Dispatch using GA – Mahendra Bhadu (2010)
3. Optimal Location of Shunt connected FACTS devices for Power System Transient Stability Enhancement – Neeraj Kanwar (2010)
4. Artificial Intelligence based Power System Dynamic Security Classification in Energy Management Systems– Kadam Vashishtha (2012)
5. Generation Rescheduling for Congestion Management in Power Systems Using Particle Swarm Optimization – Shiv Shambhu Kumar Suman (2013)
6. Real-time Frequency and Voltage Control in Power Systems using WAMS – Raghvendra N. Raghav (2014)
7. Voltage Control in Distribution Networks with Distributed Generation – Akanksha Shukla (2015)
8. Voltage Stability Monitoring using AI Techniques and Synchrophasor Measurements – Harita Shah (2016)
9. Transient Stability Assessment in Distribution System with Distributed Generation – Kuldeep (2017)
10. Islanding detection in Distribution System with Distributed Generation – Prahlad Mundotiyani (2017)
11. Economic Perspective of Micro Grid using Embedded Power Production– Krishan Kumar Koshik (2018)
12. Maximizing Disco Profit in Active Distribution Networks by Optimal Planning of Energy Storage Systems and Distributed Generators – Reena Meena (2018)
13. Demand Response Management in Power Grids with Wind Integration – Shruti Kahaliyan (2019)
14. Distribution Network Reliability Assessment in Presence of Demand Response– Navneet Dahariya (2019)
15. Voltage Security Assessment and Control in Modern Power System – Ghanshyam Meena (2020)

16. Congestion Management in Deregulated Power System Using Different Control Techniques – Lalit Kishor (2020)
17. Techno-Economic Analysis of Integrating Stochastic Wind Power Generation in Electricity Pool Markets –Bhupesh Sureshkumar Agrawal (2021)
18. Day-Ahead Electricity Market Clearing with Network Contingencies – Bharath Sai Kumar Mattapu (2021)
19. Multi-Period Deterministic and Stochastic UC Decision for Power Systems Integrated with Wind Power and Energy Storage – Munazza Shaikh (2022)
20. Optimal Load Frequency Control for Interconnected Two Area Fuel-Fired Power System- Devashish (2022)
21. AI based Approach to Detect Loss of Excitation and Power Swing Condition in Synchronous Generator- Varnika Gulati (2023)
22. PMU Data Driven Machine Learning Methods for Voltage Stability Assessment- Arshad Ali (2024)
23. Optimal Scheduling of Solar PV Generation and Battery Energy Storage System in Power System – Shivam Saraswat (2024)
24. Assessment of Inertial and Frequency Response in Wind Integrated Power System– Charul Jain (2025)
25. Physics-Informed Neural Networks (PINNs) for Voltage Stability Prediction in Power Systems - Aman Mansoor (Ongoing)
26. Optimal Sizing of Hybrid Energy storage in Power System Integrated with Renewable Energy Sources - Ajay Kumar Pal (Ongoing)

B.Tech. Project Supervision:

1. Economic Operation of Power System (2001)
2. Optimization of the design of Hydro Alternator using computer software (2002)
3. Optimal design of Single-Phase Induction Motor using computer based Methodology (2003)
4. Power System Fault Analysis using MATLAB (2010)
5. Power System Contingency Analysis for Steady State Security Assessment using Artificial Neural Network (2011)
6. Computation of Power Transfer Capability using Artificial Neural Network (2012)
7. Graph Theory based Generation Rescheduling for Power System Security Enhancement (2013)
8. Congestion Management in Modern Power System using Generation Rescheduling (2014)
9. Vulnerability Analysis for Power System Contingencies (2014)
10. Transmission Expansion Planning for Deregulated Power Systems (2015)
11. Wind Speed Forecasting: Short Term Analysis (2017)
12. Available Transfer Capability Enhancement Using Series FACTS Devices in a Multi-Machine Power System (2018)
13. Reliability Assessment of Power Transmission Grid under Extreme Weather Conditions (2019)
14. Day Ahead Solar Irradiance Forecasting using Machine Learning Techniques (2020)
15. Probabilistic Contingency Analysis based Reliability Evaluation of Bulk Power System (2021)
16. Modeling of Overcurrent Protection Scheme for Transmission Lines for Different Types of Faults (2022)
17. Short Term Flexibility Analysis of Thermal Power Plants with Ramping Capabilities (2023)
18. Power Quality Analysis in Distribution System Using AI Based Classification Models (2025)
19. Leveraging Machine Learning for Estimating Physics-Based Dynamic Line Rating for Different Environmental Conditions (Ongoing)

Reviewer:

1. International Journal of Electric Power Components & Systems, Taylor & Francis
2. International Journal of Engineering Intelligent Systems
3. International Journal of Electrical Power and Energy Systems
4. International Journal of Electric Power Systems Research
5. International Journal of Emerging Electric Power Systems
6. International Journal of Computer Mathematics: Computer Systems Theory
7. IET Generation, Transmission & Distribution
8. International Journal of European Transactions on Electrical Power
9. International Journal of Electrical Engineering & Technology
10. IET Renewable Power Generation
11. IEEE Access
12. International Journal of Mathematical Problems in Engineering, Hindawi
13. IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems, SPICES 2015
14. International Conference on Electronic Design, Computer Networks and Automated Verification, EDCAV 2015
15. 12th IEEE India International Conference (INDICON 2015)
16. 5th International Conference on Power Science and Engineering, ICPSCE 2016, Venice
17. 8th IEEE India International Conference on Power Electronics (IICPE-2018), 13th-15th December 2018, MNIT Jaipur.

Awards/Honour/Scholarship:

1. Selected for National Merit Scholarship for secured 78th position in Secondary School Examination 1990 conducted by Rajasthan Board of Secondary Education, Ajmer.
2. International Travel Grant from DST for attending 2014 IEEE PES General Meeting, Washington D.C., USA
3. International Travel Grant from UGC for attending 2014 IEEE PES General Meeting, Washington D.C., USA
4. Reviewer Recognition Award from International Journal of Electrical Power and Energy Systems, Elsevier, 2015.
5. Best Paper Award at International Conference on Advance Trends in Engineering & Technology (ICATET-2013), Arya College of Engineering & IT, Jaipur, 19-20 Dec. 2013.
6. Best Paper Award at 12th IEEE India International Conference (INDICON 2015), Jamia Millia Islamia, New Delhi, India 17-20 Dec.2015.
7. Best Paper for 3rd IEEE International Conference on Control, Computing, Communication and Materials (ICCCCM 2024) given by United Group of Institutions, Prayagraj Year – 2024.

Administrative Responsibilities (Institute Level):

1. Member Editorial Board for 37th Annual Report & Annual Accounts.
2. Member, Selection Committee, Special Recruitment drive for SC/ST for the post of LDC, 2007.
3. Member, Departmental Promotion Committee for Non-teaching Staff, 2010.
4. Member, Departmental Promotion Committee for Non-teaching Staff on Adhoc, 2010.
5. Member, Departmental Promotion Committee for Group-D Employees, 2010.
6. Department Representative for Legal Matters, from 2011-12.
7. Member, Scrutiny Committee, Technicians (on contract) in the Electrical Engineering Department, 2012

8. Member, Scrutiny Committee, for Faculty recruitment under Special Recruitment Drive in Electrical Engineering Department, 2012
9. Member, Scrutiny Committee, for Faculty recruitment in Electrical Engineering Department and Mathematics Department, 2012
10. Member, Scrutiny Committee, for Faculty recruitment in Electrical Engineering Department, 2013
11. Member, Scrutiny Committee, Technicians (on contract) in the Electrical Engineering Department, 2013
12. Official for Degree distribution for UG (Electrical Engineering) for Eighth Convocation, 2013
13. Faculty Coordinator, Training & Placement Cell, 2017 – 2018.
14. External Member, Selection Committee for DPGC, DSC and Guest Faculty in Mechanical Engineering Department (2019-2020)
15. Member, Committee for post of Technician and Senior Technician in the Department of Electrical Engineering/ Instrumentation and Control Engineering, 2021.
16. External Member, DPGC, DSC and Guest Faculty selection in the Department of Architecture and Planning (2021-22), (2022-2023)
17. External Member, DPGC, DSC and Guest Faculty selection in the Department of Physics (2023-2024)
18. External Member, DPGC, DSC and Guest Faculty selection in the Department of Mechanical Engineering (2024-2025)

Administrative Responsibilities (Department Level):

1. Coordinator, Department Profile, 2007.
2. Faculty Co-Incharge, Measurement and Network Lab from 10/02/2009 - 20/05/2014.
3. Faculty Co-Incharge, Electrical Science Lab from 13/10/11- 20/05/2014.
4. Faculty Co-Incharge, Power System Lab from 29/06/2015 – 17/06/2018.
5. Faculty In-charge, Power System Lab from 18/06/2018 – 17/07/2019.
6. Member, DPGC (Departmental Post Graduate Committee) from 28/02/2012-14/09/2013.
7. Member, Scrutiny Committee, for M.Tech. admissions in Electrical Engineering Department, June 2012.
8. Prepared Basic Electrical Engineering Lab Manual.
9. Prepared Circuit and Measurement Lab Manual.
10. Prepared Power System Lab Manual.
11. Procured and set new instruments for the upgradation and modernization of the Circuit and Measurement lab.
12. Procured and set new instruments for the upgradation and modernization of the Power System lab.
13. Member, Scrutiny Committee, for M.Tech. Admissions in Electrical Engineering Department, June 2013.
14. Project Coordinator (UG) from 30/08/2013-28/06/2015.
15. Member, Organizing Committee, for Curriculum Development Workshop conducted by the Department on 26.10.2013
16. Member, DUGC (Departmental Under Graduate Committee) from 15/09/2013-14/05/2014.
17. Member, DSC (Departmental Selection Committee) for Ph.D. admissions in the Department from 16/12/2013 – 16/12/2014.
18. Member, DSC (Departmental Selection Committee) for Ph.D. admissions in the Department from 16/12/2014 – 16/12/2015.
19. Member, DSC (Departmental Selection Committee) for Ph.D. admissions in the Department from 16/12/2015 – 16/12/2016.

20. Member, DPGC (Departmental Post Graduate Committee) from 29/06/2015-09/09/2016.
21. Member, DUGC (Departmental Under Graduate Committee) from 02/08/2017-19/08/2019
22. Program Advisor, B. Tech. (Elect. Engg.) 2017-18, V-VI Sem. from 05/07/2017-07/07/2018.
23. Coordinator, Departmental Industry Day 2018.
24. Program Coordinator, III Year B.Tech. (Elect. Engg.) 2018-19, V-VI Sem. from 18/07/2018- 05/07/2019.
25. Program Advisor, B. Tech. (Elect.Engg.) 2019-20, V-VI Sem. from 03/07/2019-30/06/2020.
26. Member, DPGC from 01/07/2020- 29/06/2022
27. Convener, DUGC from 01/07/2020- 29/06/2022
28. Member, DSC (Departmental Selection Committee) for Ph.D. admissions in the Department, 2021-22, 2022-23.
29. Member, DUGC from 29/06/2022-09/08/2023
30. Convener, DPGC from 10/08/2023- 24/12/2023

Other Contributions:

1. Organized “Tech-Wit-2001”, A state level paper presentation contest, as Student Counsellor of IEE Student Chapter, MNIT on 10 Oct., 2001.
2. Faculty In-charge, Dramatics, Students Council, 2000-2001.
3. Official, Annual Athletic Meet held on 2nd and 3rd Feb., 2001.
4. Official Annual Athletic Meet held on 7th and 8th Feb., 2000.
5. Student Counsellor, IEE Student Chapter, MNIT from Aug. 2001 – Aug. 2002
6. Worked for conducting Rajasthan Pre Engineering Test (RPET) 2001
7. Faculty Advisor, Dramatics, Creative Arts Society, 2009-2010, 21/08/2009-11/08/2010.
8. Faculty Advisor, Music, Creative Arts Society, 2011-12.

Other Achievements:

1. Selected in Rajasthan State & Subordinate Services, conducted by Rajasthan Public Service Commission (1999).
2. Selected for the post of Lecturer, Electrical Engineering, Rajasthan Technical Education Department, conducted by Rajasthan Public Service Commission (1999)
3. Selected for the post of JEN (T & LR), Jaipur District Circle, Rajasthan State Electricity Board (1998)