#### Resume:

#### Dr. (Miss) Vasundhara Mahajan,

Associated Professor, Electrical Engineering Department

Sardar Vallabhbhai National Institute of Technology (SVNIT),

Ichhchanath, Piplod, Surat, Gujarat - 395007

Svnit.ac.in, 0261-2201670, 2201562

vmahajan@eed.svnit.ac.in, vasu.daygood@gmail.com

She has obtained her doctoral (Ph. D.) and master degree (M. Tech.) form IIT Roorkee in 2014 and 2005 respectively. Graduated in Electrical Engineering from NIT Raipur (formerly GEC) in 1999. She worked as lecturer at Christian college of engineering and technology from Sept. 2000 to Oct. 2007. Then joined Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, Gujarat. She has published many research papers in International/national journals/conferences. She has organised 11 Short term training programs at SVNIT. She has delivered many expert talks in various institutes/colleges. She has guided many M.Tech. and B. Tech. projects. Presently she is guiding Six doctoral thesis. Her research area is cyber security of smart grid, power system reliability, restructuring/deregulation, congestion management, energy market, power quality improvement, active power filters, FACTS and artificial intelligence. She is life member of Institution of engineers and ISTE.

#### The details are as follows:

A. Journal Publications (International/SCI/SCIE/Scopus): (Total 11)

Sr. No.	Title
1.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Optimization of controllers parameters for damping local area oscillation to enhance the stability of an interconnected system with wind farm", Electrical Power and Energy Systems, Vol. 119, 105877, 2020. https://doi.org/10.1016/j.ijepes.2020.105877
2.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Optimization of damping controller for PSS and SSSC to improve stability of interconnected system with DFIG based wind farm," International Journal of Electrical Power and Energy Systems (IJEPES), (Elsevier publishing), Volume 108, Pages 314-335, Published online: 9 January 2019. (DOI: https://doi.org/10.1016/j.ijepes.2019.01.017)
3.	Vijay K. Prajapati and <b>Vasundhara Mahajan</b> , "Congestion Management of Power System with Uncertain Renewable Resources and Plug in Electrical Vehicle" IET Generation, Transmission and Distribution, 2019, 927-938.
4.	Vijaykumar K. Prajapati and <b>Vasundhara Mahajan</b> , "Demand Response based Congestion Management of Power System with Uncertain Renewable Resources," International Journal of Ambient Energy, 2019, 1-20.
5.	Ashok C. Lakum and <b>Vasundhara Mahajan</b> , "Optimal Placement and Sizing of Multiple Active Power Filters in Radial Distribution System Using Grey Wolf Optimizer in Presence of Nonlinear Distributed Generation", Journal Electric Power Systems Research, Volume 173, August 2019, Pages 281-290, (DOI: https://doi.org/10.1016/j.epsr.2019.04.001).
6.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Fuzzy Logic based Control Scheme for Doubly Fed Induction Generator based Wind Turbine," International Journal of Emerging Electric Power System, Published online: 02 November 2018, (DOI: https://doi.org/10.1515/ijeeps-2018-0126).
7.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Mathematical Modelling and Stability Analysis of Power System Stabilizer for Damping Low-Frequency Oscillations of Wind Power System," Institution of Engineering and Technology (IET) Renewable Power Generation, Print ISSN 1752-1416, Online ISSN 1752-1424, Published online: 27 September 2018. (DOI: 10.1049/iet-rpg.2018.5555)

8.	Vasundhara Mahajan, Pramod Agarwal, Hari Om Gupta, "An artificial intelligence based controller for multilevel harmonic filter", Electrical Power and Energy Systems, Elsevier, 58 (2014), p 170-180. (DOI: https://doi.org/10.1016/j.ijepes.2014.01.020)
9.	Vasundhara Mahajan, Pramod Agarwal, Hari Om Gupta, "Implementation of High Voltage Multilevel Harmonic Filter based on Rotated Carrier Modulation and Artificial Intelligence based Controllers, Arabian Journal for Science and Engineering, Springer, October 2014, Volume 39, Issue 10, pp 7127–7143. (DOI: https://doi.org/10.1007/s13369-014-1280-7)
10.	Vasundhara Mahajan, Pramod Agarwal, Hari Om Gupta, (2014) "dSPACE implementation of cascaded H-bridge inverter for harmonics minimization using artificial-intelligence", COMPEL - The international journal for computation and mathematics in electrical and electronic engineering, Vol. 33 Issue: 6, pp.2053-2081, 2014. (DOI: https://doi.org/10.1108/COMPEL-06-2013-0218)
11.	Ramnarayan Patel, <b>Vasundhara Mahajan</b> , Vinay Pant, "Modelling of TCSC Controller for Transient Stability Enhancement", International Journal of Emerging Electric Power Systems, Volume 7, Issue 1, Art. 6, p. 1-17, 2006. (DOI: https://doi.org/10.2202/1553-779X.1288)

B. Conference publications: (Total 44)

	erence publications: (Total 44)
Sr. No.	Title
1.	Neeraj Kumar Singh and <b>Vasundhara Mahajan</b> , "Smart Grid: Cyber Attack Identification And Recovery Approach," IEEE 2nd International Conference on Innovations in Electronics, Signal Processing and Communication (IESC), 1-2 March 2019, pp. 1-5, NIT Meghalaya. (DOI: 10.1109/IESPC.2019.8902401)
2.	Neeraj Kumar Singh and <b>Vasundhara Mahajan</b> , "Mathematical Model of Cyber Intrusion in Smart Grid," IEEE PES GTD Grand International Conference and Exposition Asia (GTD Asia), 19-23 March 2019, Bangkok, pp. 965-969. (DOI: 10.1109/GTDAsia.2019.8715946)
3.	Neeraj Kumar Singh and <b>Vasundhara Mahajan</b> , "Fuzzy Logic for Reducing Data Loss during Cyber Intrusion in Smart Grid Wireless Network," IEEE Student Conference on Research and Development (SCOReD), Universiti Teknologi PETRONAS, Perak, Malaysia,15-17 October 2019, pp. 192-197. (DOI: 10.1109/SCORED.2019.8896269)
4.	Neeraj Kumar Singh, <b>Vasundhara Mahajan</b> , A. Aniket, S. Pandya, R. Panchal and U. Mudgal, "Identification and Prevention of Cyber Attack in Smart Grid Communication Network," International Conference on Information and Communications Technology (ICOIACT), 24-25 July 2019, Yogyakarta, Indonesia, pp. 5-10. (DOI: 10.1109/ICOIACT46704.2019.8938559)
5.	Neeraj Kumar Singh and <b>Vasundhara Mahajan</b> , "Cyber Attack Detection In Smart Grid Substation Using Virtual Range Increment And Trust Weight" in 8th International Conference on Power Systems, (ICPS), 20-22 December 2019, Malaviya National Institute of Technology Jaipur (MNIT), Jaipur, Rajasthan, India.
6.	Neeraj Kumar Singh, Praveen Kumar Gupta and Vasundhara Mahajan, "Cyber Intrusion Detection in Smart Grid Using KPCA and Novel Trust Method" IEEE International Conference on Emerging Trends for Smart Grid Automation and Industry 4.0 (ICETSGAI4.0), 5-7 Dec 2019, Birla Institute of Technology (BIT), Mesra, Ranchi. (Springer LNEE)
7.	Soumya Mudgal and <b>Vasundhara Mahajan</b> , "Reliability and Active Power Loss Assessment of Power System Network with Wind Energy", 17th IEEE Student Conference on Research and Development (SCOReD), Universiti Teknologi PETRONAS, Perak, Malaysia,15-17 October 2019, pp. 186-191. (DOI: 10.1109/SCORED.2019.8896327)
8.	Soumya Mudgal, Atul K. Yadav, Praveen Kumar Gupta and Vasundhara Mahajan, "Impact of Solar and Wind Energy on Reliability of Power System Network", IEEE

	International Conference on Emerging Trends for Smart Grid Automation and Industry 4.0 (ICETSGAI4.0), 5-7 Dec 2019, Birla Institute of Technology (BIT), Mesra, Ranchi. (Springer LNEE).
9.	Soumya Mudgal, Atul K. Yadav and <b>Vasundhara Mahajan</b> , "Reliability Evaluation Of Power System Network With Solar Energy" ICPS 2019, 20-22 December, Malaviya National Institute of Technology (MNIT), Jaipur, India.
10.	Anandita Chowdhury, <b>Vasundhara Mahajan</b> , Urvashi Kaushal, Namrata Jariwala and Soumya Mudgal, "Women, Society and Development" International Conference On Gender Equity: Challenges And Opportunities, 19 & 20 December 2019, SardarVallabhbhai National Institute of Technology (SVNIT), Surat, Gujarat – 395007, pp 31-33, ISBN 978-93-5396-182-4.
11.	Atul Kumar Yadav and <b>Vasundhara Mahajan</b> , "Transmission System Reliability Evaluation by Incorporating STATCOM in the System Network," 17th IEEE Student Conference on Research and Development (SCOReD), Universiti Teknologi PETRONAS, Perak, Malaysia,15-17 October 2019, pp. 198-203. (Won best paper award) (DOI: 10.1109/SCORED.2019.8896263)
12.	Atul Kumar Yadav and <b>Vasundhara Mahajan</b> , "Transmission Line Switching For Loss Reduction And Reliability Improvement," International Conference on Information and Communications Technology (ICOIACT), 24-25 July 2019, Yogyakarta, Indonesia, pp. 794-799. (DOI: 10.1109/ICOIACT46704.2019.8938535)
13.	Atul Kumar Yadav and <b>Vasundhara Mahajan</b> , "Reliability Improvement of Power System Network With Optimal Transmission Switching," IEEE 1st International Conference on Energy, Systems and Information Processing (ICESIP), Chennai, India, 4-6 July, 2019, pp. 1-6. (DOI: 10.1109/ICESIP46348.2019.8938283)
14.	Atul Yadav, Soumya Mudgal and <b>Vasundhara Mahajan</b> , "Reliability Test of Restructured Power System with Capacity Expansion and Transmission Switching" 8th International Conference on Power Systems (ICPS), 20-22 December 2019, Malaviya National Institute of Technology Jaipur (MNIT Jaipur), Rajasthan, India.
15.	Ritu Jain and <b>Vasundhara Mahajan</b> , "Impact of seasonal variations on generation cost and social benefit of ISO in presence of renewable energy sources", IEEE International Conference on Emerging Trends for Smart Grid Automation and Industry 4.0 (ICETSGAI4.0), 5-7 Dec 2019, Birla Institute of Technology (BIT), Mesra, Ranchi. (Springer LNEE).
16.	Ritu Jain and <b>Vasundhara Mahajan</b> , "Technical and fiscal benefits of committing DG in energy market during contingency", 2018 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES) 2018, 18-21 December, IIT Madras. (DOI: 10.1109/PEDES.2018.8707584)
17.	Vijay K. Prajapati and <b>Vasundhara Mahajan</b> , "Enhancement of ATC of Transmission Line using Demand Response Programme for Congestion Management", 20th National Power Systems Conference (NPSC), NIT Trichy, 14-16 Dec, 2018. (DOI: 10.1109/NPSC.2018.8771800)
18.	Nitish Kumar and <b>Vasundhara Mahajan</b> , "Reconfiguration of Distribution Network For Power Loss Minimization & Reliability Improvement using Binary Particle Swarm Optimization", IEEE 8th Power India International Conference (PIICON), 10-12 December, 2018, NIT Kurukshetra. (DOI: 10.1109/POWERI.2018.8704466)
19.	Ashokkumar Lakum and <b>Vasundhara Mahajan</b> , "Cost Effective Optimal Placement and Sizing of Active Power Filter Using Grey Wolf Optimization in Radial Distribution System" I 8th EEE Power India International Conference (PIICON), 10-12 December, 2018, NIT Kurukshetra. (DOI: 10.1109/POWERI.2018.8704464)
20.	Jawaharlal Bhukya and Vasundhara Mahajan, "The controlling of the DFIG based on

	variable speed wind turbine modeling and simulation," 6th IEEE International Conference on Power Systems (ICPS), 4-6 March 2016, IIT Delhi, New Delhi, pp. 1-6,. (DOI: 10.1109/ICPES.2016.7584158).
21.	Jawaharlal Bhukya and Vasundhara. Mahajan, "Integration of DFIG based wind turbine generator on small signal stability of power systems," Innovations in Power and Advanced Computing Technologies (i-PACT), Vellore, 21-22 April 2017, pp.1-6. (DOI: 10.1109/IPACT.2017.8244971).
22.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Small signal stability assessment of a DFIG based wind power systems," 2nd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT), 19-20 May 2017, Bangalore, pp. 29-34, (DOI: 10.1109/RTEICT.2017.8256553).
23.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Rotor Angle Stability Assessment of Integration DFIG Based Wind Power Systems," 1st IEEE International Conference on Innovative Technologies in Engineering (ICITE), 11-13 April 2018, Osmania University (O.U) Hyderabad.
24.	Jawaharlal Bhukya and <b>Vasundhara Mahajan</b> , "Modelling of Power System Stabilizer for Double Fed Induction Generator based Wind Power System," 8th IEEE Power India International Conference (PIICON), 10-12 December 2018, NIT Kurukshetra, (DOI: 10.1109/POWERI.2018.8704411).
25.	Vijay K. Prajapati and <b>Vasundhara Mahajan</b> , "Congestion Management of Power System with Integration of Renewable Resources and Energy Storage System" 8th IEEE Power India International Conference (PIICON), 10-12 December 2018, NIT Kurukshetra. (DOI: 10.1109/POWERI.2018.8704420)
26.	Ritu Jain and <b>Vasundhara Mahajan</b> , "Benefits of committing distributed generation in energy market", 8th IEEE Power India International Conference (PIICON), 10-12 December 2018, NIT Kurukshetra. (DOI: 10.1109/POWERI.2018.8704406)
27.	Nirav R. Joshi, Deepak G. Vyas, Priyansh Kumar, Vijay Prajapati, <b>Vasundhara Mahajan</b> , "Cost minimization using Particle Swarm Optimization of Transmission Network with Renewable Sources", International Conference on Intelligent Computing and Sustainable System (ICICSS 2018), 20-21 September 2018, Akshaya College of Engineering and Technology (ACET), Coimbatore.
28.	Ashokkumar Lakum and <b>Vasundhara Mahajan</b> , Optimal Placement and Sizing of Multiple Active Power Filters for Radial Distribution System Using Grey Wolf Optimizer", 7th IEEE International Conference on Power Systems (ICPS), 21 – 23 December, 2017, College of Engineering, Pune, India. (DOI: 10.1109/ICPES.2017.8387357)
29.	Ritu Jain and <b>Vasundhara Mahajan</b> , "Computation of Locational Marginal Price in deregulated power market in different load and system conditions", 14th IEEE India Council International Conference (INDICON), 15-17 Dec 2017, IIT Roorkee, India. (DOI: 10.1109/INDICON.2017.8487527)
30.	Vijay K. Prajapati and <b>Vasundhara Mahajan</b> , "Grey wolf Optimization based Energy Management by Generator Rescheduling with Renewable Energy Resources", 14th IEEE India Council International Conference (INDICON), 15-17 December 2017, IIT Roorkee, India. (DOI: 10.1109/INDICON.2017.8487960)
31.	Vasundhara Mahajan; Pramod Agarwal; Hari Om Gupta, "Neural network and fuzzy logic controllers for three-phase three-level shunt active power filter", IEEE Workshop on Computational Intelligence: Theories, Applications and Future Directions (WCI), 14-17 Dec. 2015, IIT Kanpur, Pages: 1 – 6. (DOI: 10.1109/WCI.2015.7495524)
32.	Vasundhara Mahajan, P. Agarwal, and H. O. Gupta, "Simulation of shunt active power filter using instantaneous power theory," IEEE 5th Power India Conference, Dec. 19-22, 2012, DCRUST, Murthal, India, pp. 1-5. (DOI: 10.1109/Powerl.2012.6479562)

33.	Ambarisha Mishra; <b>Vasundhara Mahajan</b> ; Pramod Agarwal; S. P. Srivastava, "MRAS based estimation of speed in sensorless PMSM drive", 2012 IEEE Fifth Power India Conference, Dec. 19-22, 2012, DCRUST, Murthal, India, pp. 1-5. (DOI: 10.1109/PowerI.2012.6479492)
34.	Vasundhara Mahajan, P. Agarwal, and H. O. Gupta, "Simulation of instantaneous power theory for active power filter," IEEE 2nd International Conference on Power, Control and Embedded Systems (ICPCES), Dec. 17-19, 2012, MNIT Allahabad, India, pp. 1-4. (DOI: 10.1109/ICPCES.2012.6508135)
35.	Ambarisha Mishra; <b>Vasundhara Mahajan</b> ; P. Agarwal; S. P. Srivastava, Fuzzy logic based speed and current control of vector controlled PMSM drive, 2012 2nd International Conference on Power, Control and Embedded Systems (ICPCES), Dec. 17-19, 2012, pp. 1-6, MNIT Allahabad, India. (DOI: 10.1109/ICPCES.2012.6508131)
36.	Vasundhara Mahajan, "Power System Stability Improvement with Flexible A.C. transmission Systems (FACTS) Controller", IEEE POWERCON, Oct. 12-15, 2008, New Delhi, India. (DOI: 10.1109/ICPST.2008.4745204)
37.	Vasundhara Mahajan, "Multi-machine power system modeling with TCSC controller for transient stability improvement", NUCON 2007, Nov 29 – Dec 01, Nirma University, Ahemdabad, Gujarat, p.61-67.
38.	Vasundhara Mahajan, "Thyristor controlled series compensator", IEEE ICIT, Dec. 15-17, 2006, Mumbai, p. 182-187. (DOI: 10.1109/ICIT.2006.372373)
39.	Vasundhara Mahajan, R. N. Patel, Vinay Pant, "TCSC controller for transient stability enhancement", International Conference on computer applications in electrical engineering recent advances (CERA), Sep. 29- Oct. 1, 2005, IIT Roorkee, p. 200-205.
40.	Vasundhara Mahajan, "Recent trends for transient stability enhancement: An overview", Technologia 2007, 2-3 March, CCET, Bhilai, Chhattisgarh, India.
41.	Vasundhara Mahajan, "Automatic generation control and simulation", Technologia 2007, 2-3 March, 2007, CCET, Bhilai, Chhattisgarh, India.
42.	Vasundhara Mahajan, "Modeling of thyristor controlled series compensator", NUCON 2006, Dec. 2006, Nirma University, Ahemdabad, Gujarat, India.
43.	Vasundhara Mahajan, "Artificial intelligence and power systems: A detailed study", Advances in Electrical Engineering AEE06, MITS Gwalior, Nov. 29-30, 2006, p. 514-519.
44.	Vasundhara Mahajan, R. N. Patel, Vinay Pant, "FACTs controller for transient stability improvement of single machine infinite bus system", Technologia 2005, Feb. 19-20, CCET, Bhilai, Chhattisgarh, India. (won best paper award)

# C. Workshop/FDP/STTP conducted/organized for faculty/Student development: (Total 11)

Sr. No.	Title	Institute/Organization	Year/date/duration
1.	Power Filter Technology and Control	EED, SVNIT, Surat	30 June to 4 July, 2014 (One week)
2.	Power electronics systems and control	EED, SVNIT, Surat	8 – 12 Dec. 2014 (One week)
3.	Advances in Power System Engineering	EED, SVNIT, Surat	22 – 26 June 2015 (One week)
4.	Simulation and Modelling in Power System Engineering	EED, SVNIT, Surat	28 Dec. 2015 – 01 Jan. 2016 (One week)
5.	Hands On: Mathematical Modelling and Software Simulation for Power System	EED, SVNIT, Surat	6 – 15 June 2016 (two weeks)

	Engineering		
6.	Hands On: Mathematical Modelling and Software Simulation for Power System Engineering	EED, SVNIT, Surat	Nov. 30 – Dec. 10, 2016 (two weeks)
7.	Women in Higher Education Role and Challenges	EED, SVNIT Surat	24 & 25 Feb. 2017 (two days)
8.	Learning redefined: Time to un(learn) and Re(learn)	EED and AMHD, SVNIT, Surat	20 – 24 Feb. 2017 (One week)
9.	Computer Aided Techniques for Electrical Machines and Power Systems	EED, SVNIT Surat	11 – 21 June 2018 (Two weeks)
10.	Workshop on artificial intelligence and paper writing	EED, GEC Raipur, Chhattisgarh	24 & 25 Jan. 2019 (Two days)
11.	Hands On: Mathematical Modelling and Software Simulation for Power systems and Electrical Machines (HOMSPM)	EED, SVNIT Surat	10 – 20 June 2019 (Two weeks)

### D. National/international conference organized as chairman or secretary: (Total 2)

Sr. No.	Title	Organization
1.	Technologia 2007, 2 – 3 March 2007 (National Conference)	Christian College of Engineering and Technology, Bhilai, Chhattisgarh, India
2.	TEQIP-III Sponsored International Conference On "Gender Equity: Challenges And Opportunities" 19th & 20th December 2019	Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, Gujarat – 395007, INDIA

## E. Length of service over and above:

Sr. No.	Organization	Year/date/duration	Experience
1	Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat	From 19/10/2007 till date	10 years 4 months
2	Christian College of Engineering & Technology, Bhilai, Chhattisgarh, India	From 04/09/2000 to 13/10/2007	07 years one month

## F. Post Graduate Dissertation Guided: (Total 10)

S. N.	Name	Title	Year
1.	Ranjit Kumar Rajak (P07EL861)	One cycle control of three phase active power filter for compensation of harmonics	2009
2.	Sripada Harish (P08EL868)	A modified ZVS flyback resonant inverter for induction cooking application	2010
3.	Kosuru Jeji Kumar (P13PS017)	Optimal placement and sizing of active power filters by using particle swarm optimization for reducing harmonics on distribution system	2015
4.	Neha K Agarwal	Optimal power flow based on artificial bee colony using	2016

	(P14PS009)	UPFC	
5.	Siva Reddy (P14PS006)	Congestion management of transmission lines with TCSC using modified artificial bee colony algorithm	2016
6.	Falguni Chaudhary (P15PS020)	Application of FACTS devices for voltage regulation and power flow control in transmission line	2017
7.	Manish Kumar (P15EL007)	Power quality improvement using FACTS devices	2017
8.	Nitish Kumar (P16PS004)	Reconfiguration of Distribution Network For Power Loss Minimization & Reliability Improvement	2018
9.	Atul Yadav (P17PS013)	Optimal Transmission switching For Loss Reduction and Reliability Improvement of Power System Network	2019
10.	Praveen Kumar Gupta (P18PS003)	Cyber security of smart grid	Ongoing

### G. Doctoral Research students: (Total 6)

S. N.	Name	Title	Status
1.	Jawaharlal Bhukya (D14EL008)	Stability analysis and improvement using FACTS and advanced control methods for power system with renewable energy sources	Thesis submitted Dec. 2019
2.	Vijay Prajapati (DS15EL004)	Congestion management	Thesis submitted Dec. 2019
3.	Ashok Lakum (D14EL007)	Power quality improvement,	Ongoing
4.	Ritu Jain (D16EL003)	Electrical Energy market scenario and forecasting	Ongoing
5.	Neeraj Singh (D18EL003)	Cyber security for power systems/smart grid	Ongoing
6.	Atul Kumar Yadav (D19EL001)	Reliability and Energy market	Ongoing

### H. Awards:

Best paper award for following two publications: (Total 2)

1.	Vasundhara Mahajan, R. N. Patel, Vinay Pant, "FACTs controller for transient stability improvement of single machine infinite bus system", Technologia 2005, Feb. 19-20, CCET, Bhilai, Chhattisgarh, India. (won best paper award)		
2.	Atul Kumar Yadav and <b>Vasundhara Mahajan</b> , "Transmission System Reliability Evaluation by Incorporating STATCOM in the System Network," 17th IEEE SCOReD 2019, October 15-17, 2019, Universiti Teknologi PETRONAS, Perak, Malaysia, pp. 198-203. (Won best paper award)		