Zahra Moravej, Ph.D., S.M.IEEE

- Research Scholar, Electrical & Computer Engineering Department, Tennessee Technological University, Cookeville, TN 38505, USA.(Jan 2015)
- Senior Member, Institute of Electric & Electronics Engineers (IEEE).
- Associate Professor, Electrical & Computer Engineering Faculty, Semnan University, Semnan, Iran.
- Senior Electrical Engineer, Moshanir Power Engineering Consultants, Tehran, Iran.

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Education

- Ph.D. in Electrical Engineering, IITBHU Banaras, India. (2000)
  Thesis entitled: "*ANN Based Differential Protection of Power Transformer"*
- ME in Electrical Engineering, Bangalore University, Bangalore, India. (1990)
  Thesis entitled: "*Microprocessor based point on wave switching device for power system model study application*"
- BE in Electrical Engineering, Bangalore University, Bangalore, India. (1985)
  Thesis entitled: "*Design and implementation of intel 8085 assembler*"

Expertise

- Power system protection
- Power quality
- Substation automation systems
- Protection of Smart Grid
- Application of Artificial intelligence & DSP to power system protection
- Protection & Control of Microgrid

Academic Experience

- Lecturer at Semnan University (1989-1995)
- Assistant Professor at Semnan University (2000-2012)
- Associate Professor at Semnan University from 2012-2018
- Professor at Semnan University from 2018
- Research Scholar at Tennessee Technological University (Jan. 2015)

Membership

- Institute of Electric and Electronics Engineers (IEEE), Senior Member
- Association of Iranian Electrical & Electronics Engineers (AIEEE), Member

Professional Services

- Executive Manager, Journal of Modeling and Simulation in Electrical and Computer Engineering.
- Reviewer, IEEE Power Delivery**,** IEEE Industry Application, European Transaction on Electrical Power, International Journal of Electrical Power & Energy Systems**,** Modeling in Engineering.

Research Projects

- Implementation of Substation Automation System & Its Redundancy: Case study, Semnan University, Semnan, Iran. (2007)
- Power Quality Monitoring, Semnan University, Semnan, Iran. (2011)

Students

- **Ph.D. Graduate Scholar**
  - **Ali Akbar Abdoos** (Babol Noshirvani University of Technology), Intelligent Differential Protection of Power Transformer Using S-Transform, Oct. 2012.
  - **Mohammad Pazoki** (Damaghan University), Improvement of Distance Protection Operation of Transmission Line Equipped with UPFC Using Pattern-Recognition Method Oct. 2014.
  - **Sajad Baghari, 2017**
  - **Hossain Kiani rad, 2017**
  - **S.H. Mortazavi, 2018**
  - **J.Enayati, 2018**
- **More than 50** M.Sc. Graduate Students
- **More than 50 B.Sc.** Graduate Students
- **Ph.D. Candidates**

A.Imani, A.Jodai, M.Gharamani, M.Akhlaghi, M.Mortazavi, A.Ebrahemi.

Honors

- Best Researcher of Electrical & Computer Faculty, Semnan University Dec. 2012.
- Best Researcher of Electrical & Computer Faculty, Semnan University Dec. 2014.
- Best Researcher of Electrical & Computer Faculty, Semnan University Dec.2016.
- Best Researcher of Electrical & Computer Faculty, Semnan University Dec.2018
- 5% top scientist Dec. 2021
- 2% top scientist Dec.2022

Publications

Citations: ***2023/1421*** **H-Index: 26/22**

Books

1. **Z. Moravej**, S. Baghari, "Condition Monitoring Techniques and Preventive Maintenance of Power Transformers" 2014. (In Persian)
2. **Z.Moravej,** A.Shariyati**,** Digital power system protection, 2015, Translation to Persian
3. **Z. Moravej,** A. Imani, "Power system protection" 2021. (In Persian)

Book Chapters

1. **Z. Moravej**, A. Pazoki and A.A. Abdos, **"**Power quality using new methods" in: InTech, 2011.
2. **Z.Moravej**, Amir Imani, and Mohammad Pazoki. "Artificial Intelligence Application for HVDC Protection." Artificial Intelligence Applications in Electrical Transmission and Distribution Systems Protection. CRC Press, 2021. 387-418.

Refereed Journals

1. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "digital filtering algorithms for differential relaying of power transformer: an overview " *electric Machines and power systems,* 2000.
2. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "ANN Based Protection Scheme for Power Transformer" *Electric Machines and Power Systems,* 2000.
3. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "Differential Protection of Power Transformer Using ANN." *Engineering Intelligent Systems,* 2000.
4. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "Radial basis function Neural Network model for protection of power transformer" *Electric Machines and Power Systems,* 2001.
5. **Z. Moravej**, D.N. Vishwakarma and S.P.Singh, "Protection and Condition monitoring of power transformer using ANN" *Electric Machines and Power Systems,* 2002.
6. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "Application of Radial Basis Function (RBF) Neural Network for Differential Relaying of Power Transformer" *Computer and Electrical Engineering,* 2003.
7. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "An Intelligent Differential Relay" *Institution of Engineers India,* 2003.
8. **Z. Moravej**, D.N. Vishwakarma, "ANN based harmonic restraint differential protection of power transformer" *Journal-Institution of Engineers India Part El Electrical Engineering Division,* 2003.
9. **Z. Moravej**"Minimal radial basis function Neural Network based differential protection of power transformer" *European Transaction on Electrical Power,* 2004.
10. **Z. Moravej**, M. Sanaye-Pasand "A novel approach for protection and condition monitoring of power transformer using MRBFNN" *Electric Power Components and Systems,* 2004.
11. **Z. Moravej**"Evolving Neural Nets for protection and condition monitoring of power transformer" *Electric Power Components and Systems,* 2005.
12. **Z. Moravej**, "Bus bar protection based minimal radial basis function network using OCT." *WSEAS Transactions on Circuits and Systems***,** 2005.
13. **Z. Moravej**, "Speed control of DC Motor based on neural network and fuzzy logic." *WSEAS Transaction on Systems***,** 2005.
14. **Z. Moravej**, A.A. Abdoos, "Protection of power transformer using ANN.", *Journal of Engineering Semnan University,* 2006. (in Persian)
15. **Z. Moravej**, S.A. Banihashemi, M.H. Velayati, "Power quality event classification and detection using a novel Support Vector Algorithm.", *Energy Conversion and Management*, 2009.
16. **Z. Moravej**, A.A. Abdoos and M. Sanaypasand, "A new approach based on S-transform for discrimination and classification of Inrush current from internal fault currents using probabilistic Neural Network." *Electric Power Components and system,* 2010**.**
17. **Z. Moravej**, M. Pazoki andA.A. Abdoos, "A new approach for fault classification and section detection in compensated transmission line with TCSC." *European Transactions on Electrical Power,* 21(1), 997-1014*,* 2011.
18. **Z. Moravej**, A.A. Abdus and M. Akhlaghi, "Power quality classification using ANN.", *Journal of Engineering Semnan University*, 2010. (in Persian)
19. **Z. Moravej**, M. Pazoki and A.A. Abdoos, "A new approach for fault classification and section detection in compensated transmission line with TCSC." *European Transaction on Electrical Power*, 2011.
20. **Z. Moravej**, A.A. Abdoos and M. Sanaye-Pasand, "A new Protection Scheme for Power Transformers Using Time Frequency Analysis.", *International Review of Electrical Engineering*, 2011.
21. **Z. Moravej**, A.A. Abdoos and M. Pazoki, "New combined S-transform and Logistic model Tree technique for recognition and classification of power quality disturbances." *Electric Power Components and system*, 2011.
22. **Z. Moravej**, A.A. Abdos, M. Pazoki, "Power quality events detection using ANN." *Journal of Modeling* 9, 2011 (in Persian).

23. **Z. Moravej**, M. Pazoki and A.A. Abdoos, "Wavelet Transform and Multi-class Relevance Vector Machines based recognition and classification of power quality disturbances." *European Transaction on Electrical Power*, 2011.
24. **Z. Moravej**, M. Jazaeri and M. Gholamzadeh, "Optimal Coordination of Distance and Over-Current Relays in Series Compensated Systems Based on MAPSO." *Energy Conversion and Management,* 56, 140-151*,* 2012.
25. **Z. Moravej**, A.A. Abdoos and M. Sanaye-Pasand, "Power Transformer Protection Using Improved S-transform, Electric Power Components and system." *European Transaction on Electrical Power,* 2012**.**
26. **Z. Moravej**, M. Khederzadeh and M. Pazoki, "New Combined Method for Fault Detection, Classification and Location in Series Compensated Transmission Line." *Electric Power Components and Systems*, 2012.
27. **Z. Moravej** and A.A. Abdoos, "An Improved Fault Detection Scheme for Power Transformer Protection." *Electric Power Components and system*, 2012.
28. **Z. Moravej**, J. Enayati, "A Hybrid Least Squares-Clonal Selection Based Algorithm for Harmonic Estimation." *European Transaction on Electrical Power,* 2012.
29. **Z. Moravej**, M. Pazoki, "Application of a New Combined Technique to Power Quality Events Classification." *International Review of Electrical Engineering,* 2012.
30. **Z. Moravej** and A. Akhlaghi, "A novel approach based on Cuckoo Search for DG allocation in distribution network." *International Journal of Electrical Power & Energy Systems,* 44(1), 672-679*,* 2013.
31. A. Rezai, P. Keshavarzi and Z**. Moravej,** "Secure SCADA communication by using a modified key management scheme." *ISA transactions*, 52(4), 517-524, 2013.
32. **Z. Moravej**, M. Pazoki, M. Niasati and A.A. Abdoos, "A Hybrid Intelligence Approach for Power Quality Disturbances Detection and Classification." *International Transactions on Electrical Energy Systems*, *23*(7), 914-929, 2013.
33. **Z. Moravej**, A. A. Abdoos and M. Sanaye-Pasand, "Power transformer protection scheme based on time-frequency analysis." *International transactions on electrical energy systems,* 23(4), 473-493, 2013.
34. M. Ahmadipour and **Z. Moravej**, "A new approach in power transformer differential protection." *International Journal of Current Engineering and Technology*, 2013.
35. R. Rashidi, A. Shariati, **Z. Moravej** and A. Shiroudi, "Technical review and economic assessment of ground source heat pump utilization in Taleghan-Iran." *Journal of Renewable and Sustainable Energy 5*, 033125, 2013**.**
36. **Z. Moravej** and J. Enayati, "A hybrid least squares–clonal selection based algorithm for harmonics estimation"**,** *International Transactions on Electrical Energy Systems,* 24(1), 1-15, 2014.
37. **Z. Moravej**, M. Pazoki and M. Khederzadeh, "New Pattern Recognition Method for Fault Analysis in Transmission Line with UPFC"**,** *IEEE Transactions on Power Delivery*, *30*(3), 1231-1242, 2014.
38. **Z. Moravej** and H. Kayani, "New method for solving substation expansion planning problem using fuzzy clustering algorithms." *Majlesi Journal of Electrical Engineering, 8(4), 27-35,* 2014.
39. ***Z.*** **Moravej**, M. Pazoki and M. Khederzadeh, "Impact of UPFC on Power Swing Characteristic and Distance Relay Behavior." *IEEE Transactions on Power Delivery*, 2014.
40. **Z.Moravej**, F. Adelnia and F. Abbasi, "Optimal coordination of directional overcurrent relays using NSGA-II *Electric Power Systems Research*, 119, 228-236, 2015.
41. F. Adelnia, **Z.Moravej** and M. Farzinfar, "A new formulation for coordination of directional overcurrent relays in interconnected networks" *International Transactions on Electrical Energy Systems,* 25(1), 120-137, 2015.
42. **Z.Moravej**, J. D. Ashkezari and M. Pazoki, " An effective combined method for symmetrical faults identification during power swing "*International Journal of Electrical Power & Energy Systems,* 64, 24-34, 2015.

43. **Z. Moravej** and S.Bagheri, " Condition Monitoring Techniques of Power Transformers: A Review, " *Journal of Operation and Automation in Power Engineering*, Vol. 3, No.1, Pages: 71-82, 2015.
44. **Z. Moravej** and J. Azarakhs, "Simulation and classification of power quality events using Artificial Intelligent." *Journal of Modeling*, volume 41.2015 (in Persian).
45. **Z.Moravej**, S. H. Mortazavi and S. M. Shahrtash, "DT-CWT based event feature extraction for high impedance faults detection in distribution system" *International Transactions on Electrical Energy Systems,* 25(12), 3288-3303, 2015.
46. A. A. Adelnia, **Z.Moravej** and M. Pazoki, "A hybrid method based on time frequency analysis and artificial intelligence for classification of power quality events" *Journal of Intelligent & Fuzzy Systems,* 28(3), 1183-1193, 2015.
47. V**.** Behravesh and **Z. Moravej**, "Optimal Placement of Phasor Measurement Units in Khorasan Network Using a Hybrid Intelligent Technique." *Journal of Modeling & Simulation in Electrical & Electronics Engineering,* Vol. 1, NO.1, Feb. 2015.
48. **Z. Moravej**, J. Enayati, "harmonics estimation in power systems using a fast hybrid algorithm." *Journal of Modeling & Simulation in Electrical & Electronics Engineering (MSEEE*), Vol. 1, NO. 2, May 2015.
49. **Z.Moravej** and S. Baghari, "Analysis of effective factors on transient ground potential rise in gas insulated substations " *Energy Equipment and Systems*, 125-136, 2015.
50. **Z.Moravej**, S.Bagheri, G.Gharepatian, "Discrimination between mechanical fault of windings, electrical internal fault and inrush current of transformer using hybrid method ", Tabriz university journal, Oct.2015.
51. H. KianiRad, **Z.Moravej** "Coordinated Transmission Substations and Sub-transmission Networks Expansion Planning Incorporating Distributed Generation" Energy, Energy, Vol. 120, 2016.
52. A. Rezai, P. Keshavarzi and **Z.Moravej** "Advance hybrid key management architecture for SCADA network security" *Security and communication networks,* 9(17), 4358-4368, 2016.
53. M. Pazoki, **Z.Moravej** and M. Khederzadeh "Effect of UPFC on protection of transmission lines with infeed current" *International Transactions on Electrical Energy Systems,* 26(11), 2385-2401, 2016.
54. **Z.Moravej** and M. Khederzadeh, " Assessment of the maximum loadability point of a power system after third zone of distance relay corrective actions" *Turkish Journal of Electrical Engineering & Computer Sciences,* 24(5), 4174-4192, 2016.
55. A. Rezai, P. Keshavarzi and **Z.Moravej** "Key management issue in SCADA networks: A review" *Engineering science and technology, an international journal*, 20(1), 354-363*,* 2017.
56. S.Bagheri, **Z.Moravej,** and G.Gharepatian, "Classification and Discrimination among Winding Mechanical Defects, Internal and External Electrical Faults and Inrush Current of Transformer" *IEEE Transactions on Industrial Informatics,* 14(2), 484-493, 2017.
57. S.Bagheri, **Z.Moravej,** and G.Gharepatian, " Effect of transformer winding mechanical defects, internal and external electrical faults and inrush currents on performance of differential protection" *IET Generation, Transmission & Distribution,* 11(10), 2508-2520, 2017.
58. H.KianiRad and **Z.Moravej**, "An approach for simultaneous distribution, sub –transmission and transmission networks expansion planning, " *International Journal of Electrical Power and Energy Systems*, Vol 91, 2017.
59. **Z.Moravej**, M. Pazoki and M. Khederzadeh, "New smart fault locator in compensated line with UPFC" *International Journal of Electrical Power & Energy Systems,* 92, 125-135, 2017.
60. J. Enayati and **Z.Moravej,** " Real-time harmonics estimation in power systems using a novel hybrid algorithm" *IET Generation, Transmission & Distribution,* 11(14), 3532-3538, 2017.
61. **Z.Moravej**, O. HAJHOSSANI and M. Pazoki, "Fault location in distribution systems with DG based on similarity of fault impedance" *Turkish Journal of Electrical Engineering & Computer Sciences,* 25(5), 3854-3867, 2017.
62. J. Enayati and **Z.Moravej,** " Real-time harmonic estimation using a novel hybrid technique for embedded system implementation" *International Transactions on Electrical Energy Systems,* 27(12), e2428, 2017.

63. **Z.Moravej** and S. Bagheri "Distance protection closed-loop testing using RTDS" *Energy Equipment and Systems,* 5(2), 197-210, 2017.
64. S.H. Mortazavi, **Z.Moravej** and S.M. Shahrtash, "A hybrid method for arcing faults detection in large distribution networks" *International Journal of Electrical Power & Energy Systems*, 94, 141-150, 2018.
65. H. Moravej, **Z.Moravej** and M. Yazdanparast " Antimicrobial peptides: features, action, and their resistance mechanisms in bacteria" *Microbial Drug Resistance,* 24(6), 747-767, 2018.
66. S.H. Mortazavi, **Z.Moravej** and S.M. Shahrtash, "A searching based method for locating high impedance arcing fault in distribution networks" *IEEE Transactions on Power Delivery,* 34(2), 438-447, 2018.
67. SH. Mortazavi, **Z Moravej**, SM Shahrtash, "High Impedance Fault Location in Distribution Networks Based on Time Domain Analysis" *IEEE Power Delivery*, 2018.
68. **Z.Moravej** and Z.Tabak, "Discrimination of Inrush Currents from Internal Faults in Power Transformers using Fractional Fourier Transform" *Tabriz university journal*, Oct 2018.
69. **Z.Moravej**, M. Movahhedneya and M. Pazoki, "Gabor transform-based fault location method for multi-terminal transmission lines" *Measurement,* 125, 667-679, 2018.
70. **Z.Moravej**, P. E. Ardejaniand and A. Imani, "Optimum placement and sizing of DG units based on improving voltage stability using multi-objective evolutionary algorithm" *Journal of Renewable and Sustainable Energy,* 10(5), 055304, 2018.
71. **Z.Moravej** and H. Mohaghegh Ardebili, "A new objective function for adaptive distance and directional over-current relays coordination" *International Transactions on Electrical Energy Systems,* 28(9), e2592, 2018.
72. **Z.Moravej** and O. S. OOREH, " Coordination of distance and directional overcurrent relays using a new algorithm: grey wolf optimizer" *Turkish Journal of Electrical Engineering & Computer Sciences,* 26(6), 3130-3144, 2018.
73. A. Rezai, P. Keshavarzi and **Z.Moravej** "High-Performance Key Management Scheme for Secure SCADA Communication" 2018.
74. **Z.Moravej**, H. Rasooli and M. Pazoki, "A new protection scheme for loss of excitation detection in presence of FACTS devices" *International Journal of Electrical Power & Energy Systems,* 109, 110-121, 2019.
75. **Z.Moravej**, H. Rasooli and M. Pazoki, "Analysis of Loss of Excitation Protection Schemes of Synchronous Generators in A Compensated Transmission Line with UPFC." *International Journal on Electrical Engineering and Informatics*, 11(3), 485-505, 2019.
76. S. Molaei, and **Z.Moravej**, "A Novel Probabilistic Method for Generating Scheduling of Multi-Zone Virtual Power Plants" *ADST Journal* , 10(1), 39-53, 2019.
77. **Z.Moravej**, R. Ansari and A. Jodaei, "Improvement of fault detection during power swing in series compensated line by using a Taylor series" *Computational Intelligence in Electrical Engineering.*2020. (in Persian)
78. **Z.Moravej**, S. M. Mortazavi and M. Mohseni, "using noise detection and data mining method" *International Journal of Industrial Electronics Control and Optimization.*2021.
79. M. Mohseni, G. Ryahi and **Z.Moravej** "Outage prediction of distribution network overhead lines using support vector machine to improve resilience" *Computational Intelligence in Electrical Engineering,* 2021.
80. **Z.Moravej** and M. Ghahremani, "Detection of high impedance faults in distribution networks using Stationary Wavelet Transform" *Energy Conversion and Management. Accept 15 November* 2021. (in Persian)
81. **Z.Moravej,** S. Molaei and A. Jodaei, "A smart method for multi-zonal virtual power plant scheduling with presence of electric vehicles" *Modeling & Simulation in Electrical & Electronics Engineering Journal,* Accept June 2021.
82. **Moravej, Zahra**, Saeid Molaei, and Alireza Jodaei. "A smart method for multi-zonal virtual power plant scheduling with presence of electric vehicles." *Modeling and Simulation in Electrical and Electronics Engineering* 1.2 (2021): 9-20.

83. **Moravej Z**, Bagheri S, Gharehpetian G. Detection and Discrimination of Internal Faults, External Faults and Inrush Current in Power Transformers using Real-Time Digital Simulator and Intelligent Methods. JNSEE 2021; 8 (1) :111-132
84. **Moravej, Zahra,** and Mehrdad Ghahremani. "Detection of High Impedance Faults in Distribution Networks Using Stationary Wavelet Transform." *Energy Engineering & Management* 11.3 (2021): 54-65.
85. **MORAVEJ, ZAHRA,** Alireza Jodaei, and Mohammad Pazoki. "Impact of STATCOM and HSFCL on the performance of distance relays in transmission network." *Journal of Modeling in Engineering* 20.71 (2022).
86. Akhlaghi, M., **Z. Moravej**, and A. Bagheri. "Maximizing wind energy utilization in smart power systems using a flexible network-constrained unit commitment through dynamic lines and transformers rating." *Energy* 261 (2022): 124918.
87. Imani, Amir**, Zahra Moravej**, and Mohammad Pazoki. "A novel time-domain method for fault detection and classification in VSC-HVDC transmission lines." *International Journal of Electrical Power & Energy Systems* 140 (2022): 108056.
88. Mehrdad, G., Pouriya Boostan, and **Zahra Moravej**. "Fault Location and Classification in non-Homogeneous Transmission Line Utilizing Breaker Transients." (2022): 48-59.
89. Ghahremani, Mehrdad, and **Zahra Moravej**. "Detection of high impedance faults in distribution networks using Discrete Fourier Transform." (2022): 1-13.

Conference Proceedings & Presentation

1. **Z. Moravej**, D.N. Vishwakarma, S.P. Singh, "A state of the art review of Digital Relaying Algorithms for the differential protection of power transformer." Proc. of *International Conference on Modern Trends in the Protection of Electric Power Apparatus and Systems*, Oct. 1998, New Delhi, India.
2. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "Applicability of Artificial Neural Network To Power Transformer Protection: An Overview." Proc. of *14th National Convention of Electrical Engineers on Modern Trends in The Transmission Systems*, pp. 230-235, Dec. 1998, I.I.T. Kanpur.
3. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "ANN Based Waveform Classification for Protection of Power Transformer." Proc. *23rd National Systems Conference I.T. B.H.U*, Varanasi, India, pp. 264-270.
4. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "Intelligent Numerical Differential Relay for Power Transformer Protection Using ANN." *Symposium on Advances in Electronics Electro I.T. B.H.U.*, 2001, Varanasi, India, pp. 437-442.
5. **Z. Moravej**, D.N. Vishwakarma and S.P. Singh, "ANN approach to numerical differential protection and condition monitoring of power transformer." *International Conference*, New Delhi, India.
6. **Z. Moravej**, "Numerical protection and condition monitoring of power transformer using ANN." *International Power System Conference PSC*, Tehran, Iran.
7. D.N.Vishwakarma, **Z. Moravej**, "ANN based directional overcurrent relay." *Transmission and Distribution Conference and Exposition IEEE/PES*, vol.1, 2001, pp. 59-64, Atlanta, USA.
8. **Z. Moravej**, "Radial Basis Function Neural Network Based Directional Overcurrent Relay." *17th International Power System Conference (PSC)*, pp. 1-9, Tehran- Iran.

9. **Z. Moravej**, S.Aminai, "ANN based Over- current protection." *National Protection and Control Conference*, Tehran, Iran, pp. 9-19. (in Persian)
10. **Z. Moravej** "ANN based Novel fault detector for busbar protection." *38th International Universities Power Engineering Conference (UPEC)*, 1-3 September 2003, Thessaloniki, Greece, pp. 677-680.
11. **Z. Moravej**, "Harmonic Restraint Differential Protection of Power Transformer Based MRBF." *UPEC*, 2004, Bristol, England, pp.782-788.
12. **Z. Moravej**, D.N. Vishwakerma, "Integrated Digital Control & Protection for Modern Substation", *International conference of CBIP* 2004, India, pp.60-65.
13. **Z. Moravej** and D.N. Vishwakerma, "Minimal radial basis function based directional overcurrent protection." *3rd International Conference on Power System Protection and Automation*, Nov. 2004, New Delhi- India, pp. 103-110.
14. **Z. Moravej**, "Minimal Radial Basis Function Network Based Bus Protection System using OCT." *International Conference of WSEAS,* 15-17 September 2005, Malta, Spain.
15. **Z. Moravej**, "Speed control of DC motor based neural net and fuzzy logic." *International conference of WSEAS*, September 2005, Malta, Spain.
16. **Z. Moravej**, "Power transformer protection using support vector machine network." *IASTED international conference on power and energy systems*, 2008, USA.
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18. **Z. Moravej**, "Evolving Neural Nets for directional over current protection." *4th International Conference on power system protection and automation*, November 2007, New Delhi, India.
19. **Z. Moravej**, "Intelligent and redundant high voltage substation." *NEEC*, IAU Najafabad, Isfahan, 2008, Iran.
20. **Z. Moravej**, M.Mohamadi, M.K. Akbari, "Protection of power transformer using wavelet transform." *Conference of Protection and Control*, Amir Kabir University 2008. (in Persian)
21. **Z. Moravej**, A.A. Abdoos and M.Pazoki, "Detection and classification of power quality events using S-transform and SVM." *24th International Conference PSC*, 2009, Iran.
22. Z. Moravej, A.A. Abdoos and M.Sanaypasand, "Recognition of inrush current from internal fault using s transform." *25th International Conference PSC*, 2010, Iran.
23. F. Salahi, R. Kaypour and **Z. Moravej**, "Reliability Assistment of Automated Substation by Considering Redundency." *25th International Conference PSC*, 2010, Iran.
24. M. Hajian, **Z. Moravej**, "Economic Evaluation of Distributed Generation in Semnan Power Grid." *Electric Power Distribution Conference*, Bandarabbas, Iran, 2011.
25. A.H. Rezai, P. Keshavarzi, **Z. Moravej**, "A New Key Management Scheme for SCADA Networks." *ISCSE Conference*, Turkey, 2011.
26. **Z. Moravej**, Mohammad Pazoki, "A pattern recognition system for fault analysis in TCSC based transmission line." *26th International power system conference PSC*, 2011, Iran.
27. H. Afshar, **Z. Moravej**, M. Niasati, "Modeling and Optimization of Microgrid Considering Emissions." *Conference on Smart Electric Grids Technology (SEGT2012)* 18-19 December 2012, Iran University of Science and Technology, Tehran, Iran.
28. **Z. Moravej**, R. Ebrahemi, S.Baghari, "A novel approach to decaying DC offset removal in current signals of digital relays." *29th International conf. (PSC)*, 2014, Iran.

29. M. Pazoki, **Z. Moravej**, M. Khaderzadah, Niermal, "Distance Protection of Transmission Line with Infeed Based on Real-Time Simulator." *Australasian University Power Engineering Conference (AUPEC)*, 28 Sep – 1 Oct 2014.

30. **Z. Moravej,** M. Movahhedneya, G. Radman,& M. Pazoki, Comparison of Signal Processing Methods for Traveling-Waves Fault location Technique in Three- Terminal Transmission lines, 2015 IEEE, Illinois University, Chicago USA.
31. **Z. Moravej,** M. Movahhedneya, G. Radman,& M. Pazoki, Effective Fault location Technique in Three-Terminal Transmission line Using Hilbert and Discrete Wavelet Transform , 2015 IEEE, Illinois University, Chicago USA.
32. S.Bagheri, **Z. Moravej**, K.kiyani, "Estimation of parameters of power transformer winding model using intelligent algorithms", ninth power system conference, ahvaz March 2014.
33. **Z. Moravej**, S.Bagheri," Comparison detailed model and wave model of Frequency response of power transformer", ninth power system conference, Ahvaz March 2014.
34. **Z. Moravej**, S.Bagheri, "Design and application of intelligent universal power transformer", International Conference of power transformers, Tehran, Nov. 2015.
35. S.Bagheri, **Z. Moravej**, "Economic evaluation and reliability Investigation of wind farm connection Power transmission network", Iran wind energy conference 2015.
36. **Z. Moravej**, H.Mahmudi," Fault location in HVDC transmission lines, using wavelet transform", National Conference of Technology, Energy and Data on Electrical & Computer Engineering 2015.
37. **Z. Moravej**, A.mohammadi, "Adaptive optimal coordination of overcurrent and distance relays in power systems ", National Conference of Technology, Energy and Data on Electrical & Computer Engineering 2015.
38. H.Kiyani, **Z.Moravej**, Substation Expansion Planning Based on BFOA, PSC November 2015, Tehran.
39. H.Kiyani, **Z.Moravej**, A new method based on HCM to implement the uncertainty times in extension and placement of substations, PSC November 2015.
40. **Z.Moravej**, M.Vatankhah, compersion of PSO and GA for placement of DG considering loss in line, 18th Iranian student conference in November 2015.
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