



Maryam Sadat Akhavan Hejazi

Associate Professor

College: Faculty of Electrical and Computer Engineering

Department: Electrical Engineering - Power



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Education

| Degree | Graduated in | Major | University |
|--------|--------------|--|--|
| BSc | 2003 | Bachelor of Science in Electrical Engineering (Major: Communication) | Electrical Engineering Department, Amir-Kabir University of Technology |
| MSc | 2006 | Master of Science in Electrical Engineering (with Outstanding Student Honor), Majoring in Power Engineering | Electrical Engineering Department, Amir-Kabir University of Technology |
| Ph.D | 2011 | Doctor of Philosophy in Electrical Engineering (with Outstanding Student Honor), Majoring in Power Engineering | Electrical Engineering Department, Amir-Kabir University of Technology |

Employment Information

| Faculty/Department | Position/Rank | Employment Type | Cooperation Type | Grade |
|--------------------|---------------|-----------------|------------------|-------|
| (not set) | (not set) | Tenured | Full Time | 15 |

Work Experience

1. University of Kashan Representative in Iranian Society of Smart Grid , July 2012- Present
2. Member of Publications and Conferences in Iranian Society of Smart Grid , January

2013-Present

3. Responsible for the Development of Center for Smart Grid Research and Technology Development in University of Kashan , March 2016 -Present
4. Member of Welfare Committee in University of Kashan , December 2015- Present
5. Representative of University of Kashan in MOU with NRI, 2015-Present
6. Member of the Energy Research Institute of the University of Kashan, 2015-Present
7. Executive Manager of Grand National Project `Design and manufacturing a 200kW gas turbine with CHP system for distributed power generation and energy storage , 2013-Present
8. Faculty Member of Power Engineering Group, Electrical and Computer Engineering Department, University of Kashan, 2011-Present
9. Vice President for Women Branch of University of Kashan , 2012-2013

Awards

Course Topics

Undergraduate Courses:

High Voltage Engineering, Electrical Installations, Power System Analysis I, Relay And Protection, Foundations of Electrical Engineering 1, Electromagnetics

Graduate Courses:

Distributed Generation, Power System Transients, Seminar & Research Methodology, Reliability and risk analysis, Energy storage system

Workshops

1. Dr.Ghavameddin Nourbakhsh, academic staff, Queensland University of Technology

Title : **Aging Equipment Replacement in Power Systems, Using Reliability and Cost Considerations**

Date: January 17, 2015

2. Dr. Ghassem Mokhtari, Researcher at Australian E-Health Research Centre (AHRC)

Title : **Digital Health System in Smart Home Platform**

Date: January 18, 2015

3. Dr. Amir Hossein Ranjbar , Design and Release Engineer at FCA Fiat Chrysler Automobiles

Title: **Reliability Analysis Of Modern Hybrid Micro-Grids**

Date: February 7, 2015

4. Prof. Mohammad Shahidehpour, Director of Robert W. Galvin Center for Electricity Innovation at Illinois Institute of Technology (IIT), IEEE FELLOW

Title: **Evolution of Microgrids in Smart Cities**

Date: May 13, 2015

5. Prof. Mohammad Shahidehpour, Director of Robert W. Galvin Center for Electricity Innovation at Illinois Institute of Technology (IIT), IEEE FELLOW

Title: **Evolution of Smart Grid in Large Cities**

Date: December 28, 2015

6. Dr. ing stephan volker, Head of the Technical Lighting Institute, Berlin University of technology (TU berlin)

Title: LED Lighting Technology

Date: February 21, 2016

7. Prof. Mohammad Shahidehpour, Director of Robert W. Galvin Center for Electricity Innovation at Illinois Institute of Technology (IIT), IEEE FELLOW

Title: Microgrid Design and Operation in Electric Power Systems

Date: May 23-24, 2016

8. Prof. Kaveh Niayesh, Professor at Department of Electric Power Engineering, NTNU

Title: **High Voltage** Technology at NTNU: Research interests and activities

Date: September 29, 2019

9. Prof. Mohammad Shahidehpour, Director of Robert W. Galvin Center for Electricity Innovation at Illinois Institute of Technology (IIT), IEEE FELLOW

Title: **Blockchain for Transactive Energy Management**

Date: August 9, 2021

Papers in Conferences

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1. Design and Simulation of Nano-Second Pulsed Power Generator for Cancer Treatment and Considering Load Effect ,2023 31st International Conference on Electrical Engineering (ICEE) ,1 - 09 05 2023, تهران .
 2. Mohammadreza Iranpour, Maryam A.Hejazi, Reza Arghandeh ,Probabilistic Voltage Instability Assessment of Smart Grid Based on Cross Entropy Concept ,2020 10th Smart Grid Conference (SGC) ,کاشان, 1 - 16 12 2020,
 3. Vahid Shabani, Maryam A.Hejazi, Hamed Teekany ,Energy Management of a Smart Home Micro Grid in Presence of Micro-CCHP ,2020 10th Smart Grid Conference (SGC) ,1 - 16 12 2020, کاشان.
 4. H. Yazdanpanahi, M. A. Hejazi and G.B. Gharehpetian.Non-linear Modeling of Transformer Using Hammerstein Method.۲۲-th International Power System Conference.Tehran, Iran.۲۰۰۷ ۱۱ ۲۱.

5. M.A. Hejazi, G.B. Gharehpetian, A. Mohammadi, A New Monitoring Method for Transformer Winding Axial Displacement Using Electromagnetic Waves, 21th International Power System Conference, Iran, 2006, 11-13.
6. M. Sadabadi, Mehdi Karrari, M. A. Hejazi, Non-linear Modeling of Synchronous Generator Using Hammerstein Method, 21th International Power System Conference, Iran, 2006, 11-13.
7. M.A. Hejazi, G.B. Gharehpetian, A. Mohammadi, The Oil Effect On The Transformer Winding Monitoring Using Electromagnetic Waves, 21th International Power System Conference, Iran, 2006, 11-13.
8. Hossein Karami, G. B. Gharehpetian, M. A. Hejazi, Yaser Norouzi, Experimental Study on Elimination of Partial Discharge Effect on Detection of Radial Deformation of High Voltage Transformer Winding Using Electromagnetic Waves, 18th IEEE International Conference on Environment and Electrical Engineering, IEEE EEEIC18, Italy, 2018, 06-15.
9. M.A Hejazi, Ali Khorrami, Gevork B. Gharehpetian, Operation and Maintenance Cost Effect on Optimal Sizing of PV Array and Battery for a Grid-Connected House, International Conference on Renewable Energies and Power Quality (ICREPQ'17), 05-12-2016, اسپانيا.
10. H. Karami, M.J. Sanjari, A. Tavakoli, G.B. Gharehpetian, M.S.A. Hejazi, HSA-Based Optimal Allocation and Sizing of Shunt Compensators Considering Cable Aging Constraint and Load Variations, International Conference on Renewable Energies and Power Quality, ICREPQ'14, Spain, 2014, 04-10.
11. H. Rahbari Magham, M. A. Hejazi, H. Karami Porzani, M. S. Naderi and G. B. Gharehpetian, Exact Determination of a Winding Disk Radial Deformation Location Considering Tank Effect Using an Analytical Method, 21st Iranian Conference on Electrical Engineering, Mashhad, 2013, 05-16.
12. H. Karami, M. S. A. Hejazi, G. B. Gharehpetian, Simulation of Transformer Oil Effect on PD Source Allocation, 4th Conference on Partial Discharge in Electrical Apparatus (PDC'13), Tehran, 2013, 02-27.
13. H. Karami, M.S.A. Hejazi, M.S. Naderi, G.B. Gharehpetian, S. Mortazavian, Three-dimensional Simulation of PD Source Allocation Through TDOA Method, 4th Conference on Thermal Power Plants (Gas, Combined Cycle, and Steam), 19-12-2012, تهران.
14. H. Rahbari Magham, M.S. Naderi, G.B. Gharehpetian, M.A. Hejazi and H. Karami Porzani, A Novel Method for Exact Determination to Localize Radial Deformation along the Transformer Winding Height, 4th Conference on Thermal Power Plants (Gas, Combined Cycle, and Steam), 19-12-2012, تهران.
15. S. Mortazavian, G. B. Gharehpetian, M. Akhavan Hejazi, M. S. Golsorkhi, and H. Karami, A Simultaneous Method for Detection of Radial Deformation and Axial Displacement in Transformer Winding Using UWB SAR Imaging, 4th Conference on Thermal Power Plants (Gas, Combined Cycle, and Steam), 19-12-2012, تهران.
16. M. Hejazi, G. B. Gharehpetian and A. Mohammadi, Characterization of On-line Monitoring of Transformer Winding Axial Displacement Using Electromagnetic Waves, 15th International Symposium on High Voltage Engineering, Ljubljana, Slovenia, 2007, 08-27.
17. M. Hejazi, G. B. Gharehpetian and A. Mohammadi, On-line Monitoring of the Radial Deformation of Transformer Winding using Radar Cross Section, 15th International Symposium on High Voltage Engineering, Ljubljana, Slovenia, 2007, 08-27.

Papers in Journals

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1. Diagnosis of Radial Deformation and Axial Displacement Faults in Power Transformer Windings using X-ray and Compton Backscatter Imaging, Journal of Electrical Systems, Vol. 20, pp. 4457, 2024, 08-10, SCOPUS, JCR.
 2. Diagnosis of Radial Deformation and Axial Displacement Faults in Power Transformer Windings using X-ray and Compton Backscatter Imaging, Journal of Electrical Systems, Vol. 20, pp. 4457, 2024, 08-10, SCOPUS, JCR.
 3. Optimal Protection Coordination of Active Distribution Networks Using Smart Selection of Short Circuit Voltage-Based Relay Characteristics, Energies, Vol. 16, pp. 1, 2023, 07-11, SCOPUS, JCR.

4. Ahmad Aziznia, Maryam A. Hejazi, Flexible Pulsed Power Generator to Create Wide Range of Pulses for Cancer Treatment, Iranian Journal of Electrical and Electronic Engineering, Vol. 19, pp. 2563, 2023 05 01, SCOPUS, ISC.
5. Ahmad Aziznia, Maryam A. Hejazi, Load Modeling of The Pulsed Power Generators for Electroporation Using Impedance Spectroscopy of Human Lung Normal and Cancer Cell, Tabriz Journal of Electrical Engineering, ۲۰۲۲ ۰۸ ۲۷.
6. Ali Vafadar, Maryam A. Hejazi, Hamed Hashemi, & Dezaki and Negin Mohagheghi, Optimal Protection Coordination of Active Distribution Networks Using Smart Selection of Short Circuit Voltage-Based Relay Characteristics, Energies, 2023 07 11.
7. M. Ghasemloo, M. A. Hejazi, Hamed Hashemi, & Dezaki, Flexibility Optimization in Robust Co-Optimization of Combined Power System and Gas Networks Using Transmission Lines' Switching, Electronics, 2022 08 24.
8. Mehrdad Aslani, Amir Imanloozadeh, Hamed Hashemi, & Dezaki, Maryam A. Hejazi, Mohammad Nazifard, Abbas Ketabi, Optimal probabilistic reliability-oriented planning of islanded microgrids considering hydrogen-based storage systems, hydrogen vehicles, and electric vehicles under various climatic conditions, Journal of Power Sources, 2022 03 30, JCR, SCOPUS.
9. M. Hariri, Hamed Hashemi, & Dezaki, M. A. Hejazi, Investigation of impacts of plug-in hybrid electric vehicles stochastic characteristics modeling on smart grid reliability under different charging scenarios, Journal of Cleaner Production, 2020 12 10, 7.246.
10. M.R. Iranpor, Maryam A. Hejazi, M. Shahideh por, A Unified Approach for Reliability Assessment of Critical Infrastructures using Graph Theory and Entropy, IEEE Transactions on Smart Grid, 2020 06 30, 10.5.
11. M. Mahmoudi, S. M. Nori Rahim abadi, H. Karami, Gevork Gharehpetian, Maryam A. Hejazi, Design and Implementation of Dielectric Windows for Detection of Radial Deformation of HV Transformer Winding Using Radar Imaging, IET Science, Measurement & Technology, 2020 05 18, 1.975.
12. H. Karami, Gevork Gharehpetian, Y. Norouzi, Maryam A. Hejazi, Simultaneous radial deformation and partial discharge detection of high-voltage winding of power transformer, IET Electric Power Applications, 2020 03 12, 3.051.
13. H. Karami, H. Tabarsa, G. B. Gharehpetian, Y. Norouzi, M. A. Hejazi, Feasibility Study on Simultaneous Detection of Partial Discharge and Axial Displacement of HV Transformer Winding Using Electromagnetic Waves, IEEE Transactions on Industrial Informatics, 2020 01 01.
14. J. Faraji, M. Babaei, N. Bayati, M. A. Hejazi, A Comparative Study between Traditional Backup Generator Systems and Renewable Energy Based Microgrids for Power Resilience Enhancement of a Local Clinic, Electronics, 2019 12 5, 1.764.
15. Mohsen Ghorat, Gevork Gharehpetian, Hamid Latifi, Maryam A. Hejazi, High-Resolution FBG-Based Fiber-Optic Sensor with Temperature Compensation for PD Monitoring, SENSORS-BASEL, 2019 11 30, 3.031.
16. A.M. Hariri, M. A. Hejazi, Hamed Hashemi, & Dezaki, A novel generalized analytical reliability assessment method of smart grids including renewable and non-renewable distributed generations and plug-in hybrid electric vehicles, Reliability Engineering & System Safety, 2019 11 11, 4.039.
17. Mehdi Aslinezhad, Maryam Akhavan Hejazi, Turbine Blade Tip Clearance Determination Using Microwave Measurement and k-Nearest Neighbour Classifier, Journal of the International Measurement Confederation, 2019 10 15.
18. A.M. Hariri, M. A. Hejazi, H. Hashemi, Reliability optimization of smart grid based on optimal allocation of protective devices, distributed energy resources, and electric vehicle/ plug-in hybrid electric vehicle charging stations, Journal of Power Sources, 2019 10 01.
19. H. Hashemi, A.M. Hariri, M. A. Hejazi, Impacts of load modeling on generalized analytical reliability assessment of smart grid under various penetration levels of wind/solar/non-renewable distributed generations, Sustainable Energy, Grids and Networks, 2019 09 04.
20. Esam A. Hashim Alkaldy, Maythem A. Albaqir, Maryam Sadat Akhavan Hejazi, A New load

forecasting model considering planned load shedding effect,International Journal of Energy Sector Management,2019 04 01.

21. Mehdi Aslinezhad , Maryam Akhavan Hejazi,New indices for Detection of Turbine blade Tip Deformation and Estimation of Clearance Extent Using Scattering Parameter,Iranian Association of Electrical & Electronics Engineers,2019 01 26.
22. M. Fazli, M. A. Hejazi,Novel Hierarchical Control of VSI-based Microgrids Against Large-Signal Disturbances,Iranian Association of Electrical & Electronics Engineers,2018 12 11.
23. Mohsen Ghorat, Gevork Gharehpetian, Hamid Latifi, Maryam A. Hejazi,A New Partial Discharge Signal Denoising Algorithm Based on Adaptive Dual-Tree Complex Wavelet Transform,IEEE Transactions On Instrumentation And Measurement,2018 10 01.
24. H. R. Tabarsa, M. S. A. Hejazi,Detection of HV Winding Radial Deformation and PD in Power Transformer Using Stepped-Frequency Hyperboloid Method,IEEE Transactions on Instrumentation & Measurement,2018 09 27.
25. Mohsen Ghorat, Gevork Gharehpetian, Hamid Latifi, Maryam A. Hejazi, Azam Layeghi,Partial Discharge Acoustic Emission Detector Using Mandrel Connected Fiber Bragg Grating Sensor,Optical Engineering,2018 08 11.
26. Hamed Hashemi , Dezaki, Hossein Askarian , Abyaneh, Amirhasan Shams , Ansari, Mohammad DehghaniSanij, Maryam A. Hejazi,Direct cyber-power interdependencies-based reliability evaluation of smart grids including wind/solar/diesel distributed generations and plug-in hybrid electrical vehicles,Electrical Power and Energy Systems,2018 02 11.
27. A.A. Khodadoost Arani, H. Karami, G.B. Gharehpetian, M.S.A. Hejazi,Review of Flywheel Energy Storage Systems structures and applications in power systems and microgrids,Renewable and Sustainable Energy Reviews,2017 03 11.
28. M.A Hejazi, Ali Khorrami, Gevork B. Gharehpetian,Operation and Maintenance Cost Effect on Optimal Sizing of PV Array and Battery for a Grid-Connected House,International Conference on Renewable Energies and Power Quality (ICREPQ'17),2016 10 24.
29. M. Sabbaghpur Arani, M. A. Hejazi,The Comprehensive Study of Electrical Faults in PV Arrays,Journal of Electrical and Computer Engineering, Hindawi Publishing Corporation,2016 10 11.
30. H. Karami, G. B. Gharehpetian, Y.Norouzi, M. A. Hejazi,GLRT-Based Mitigation of Partial Discharge Effect on Detection of Radial Deformation of Transformer HV Winding Using SAR Imaging Method,IEEE Sensors Journal,2016 10 11.
31. Yaser Toghani Holari, Maryam Akhavan Hejazi, Mehran Gharib Nowkandeh,Modeling of Generator Units Scheduled And Unscheduled Outage to Optimizing Units Maintenance Scheduling Based on Risk Index,IOSR Journal of Electrical and Electronics Engineering (IOSR-JEEE),2016 09 20.
32. A. Rahiminejad, B. Vahidi, M.A. Hejazi, S. Shahrooyan,Optimal scheduling of dispatchable distributed generation in smart environment with the aim of energy loss minimization,Energy,2016 09 11.
33. M. A. Hejazi,Voltage Control and Unbalance Compensation Operation Modes of DGs,Research Journal of Applied Sciences,2016 05 11.
34. H. Rahbarimaghani, H. Karami, M. A. Hejazi, M. S. Naderi and G. B. Gharehpetian,Determination of Transformer Winding Radial Deformation Using UWB System and Hyperboloid Method,IEEE Sensors Journal,2015 08 11.
35. A. Alehosseini, M. A. Hejazi, G. Mokhtari, G. B. Gharehpetian, M. Mohammadi,Detection and Classification of Transformer Winding Mechanical Faults Using UWB Sensors and Bayesian Classifier,International Journal of Emerging Electric Power Systems,2015 05 11.
36. Abbas Khorshidi, Mahdi Zolfaghari, Maryam Akhavan Hejazi,Dynamic Modeling and Simulation of Microturbine Generating System for Stability Analysis in Microgrid Networks,International Journal of Basic Sciences & Applied Research,2014 08 11.
37. Raziye Mosayebi, H. Sheikhzadeh, M. S. Golsorkhi, M. A. Hejazi, G. B. Gharehpetian,Detection of Winding Radial Deformation in Power Transformers by Confocal Microwave Imaging,Electric Power

Components and Systems,2014 03 11.

38. M. S. Golsorkhi, M. A. Hejazi , G. B. Gharepetian, M. Dehmollaian,A Feasibility Study on Application of Radar Imaging for Detection of Transformer Winding Radial Deformation,IEEE Transactions on Power Delivery,2012 10 11.
39. M. A. Hejazi, J. Ebrahimi, G. B. Gharepetian, M. Mohammadi, R. Faraji ,& Dana, G. Moradi,Application of Ultra-Wideband Sensors for On-line Monitoring of Transformer Winding Radial Deformations – A Feasibility Study,IEEE Sensors Journal,2012 06 06.
40. M. A. Hejazi, G. B. Gharepetian, G. Moradi, H. A. Alehosseini, M. Mohammad,On-line Monitoring of Transformer Winding Axial Displacement and its Extent Using Scattering Parameters and k-Nearest Neighbor Method,IET Generation, Transmission & Distribution,2011 10 08.
41. M. A. Hejazi, G. B. Gharepetian, R. Farajidana, G. R. Moradi, M. Mohammadi and H. A. Alehoseini,A New On-line Monitoring Method of Transformer Winding Axial Displacement Based on Measurement of Scattering Parameters and Decision Tree,Elsevier Journal of Expert Systems With Applications,2011 07 07.
42. M. A. Hejazi, G. B. Gharepetian, G. R. Moradi, M. Mohammadi and H. A. Alehoseini,Application of classifiers for On-line Monitoring of Transformer Winding Axial Displacement by Electromagnetic NDT,Electric Power Components and Systems,2011 04 04.
43. G. Mokhtari, G. B. Gharepetian, R. Faraji ,& dana, M. A. Hejazi,On-line Monitoring of Transformer Winding Axial Displacement Using UWB Sensors and Neural Network,International Review of Electrical Engineering (IREE),2010 10 05.