

# Curriculum Vitae

## Mahmud Fotuhi-Firuzabad

Professor  
Department of Electrical Engineering  
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## EDUCATION

Ph.D. Electrical Engineering, University of Saskatchewan, Canada, 1997  
M.Sc. Electrical Engineering, University of Saskatchewan, Canada, 1993  
M.Sc. Electrical Engineering, University of Tehran, Iran, 1989  
B.Sc. Electrical Engineering, Sharif University of Technology, Tehran, Iran, 1986, (Honors)

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## UNIVERSITY APPOINTMENTS AND EXPERIENCE

### Sharif University of Technology

#### Academic Positions in the Electrical Engineering Department

2009-present Professor  
2004-2009 Associate Professor  
2002-2004 Assistant Professor

#### Administrative Positions at Sharif University of Technology

2014-2021 President of Sharif university of Technology, Tehran, Iran  
2005-2014 Chair, Electrical Engineering Department  
2003-2005 Director, Power System Group, Electrical Engineering Department  
2002-present Director, Reliability and DG laboratory, Electrical Engineering Department

### **Other Appointments**

2001-2002	Postdoctoral Fellow, Department of Electrical Engineering, University of Saskatchewan, Canada
1998-2000	Postdoctoral Fellow, Department of Electrical Engineering, University of Saskatchewan, Canada
2012	Visiting Professor, Universiti Teknologi MARA (UiTM), Malaysia.
2013	Visiting Professor, Queensland University of Technology, Brisbane, Australia.
2018-2023	Visiting Professor, Aalto University, Finland.
2019	Visiting Professor, Aalborg University, Denmark.

### **RESEARCH INTERESTS**

- Power System Reliability/Resiliency
- Smart Grid
- Renewable and Distributed Energy Resources
- Power System Planning and Operation



### **HONORS AND AWARDS**

2025	2025 IEEE PES Roy Billinton Power System Reliability Award, for contribution to methods, algorithms, and solutions for assessment and enhancement of reliability, resilience, and operational efficiency of electric power delivery systems under uncertainty.
2025	Distinguished Professor, Sharif University of Technology, Tehran, Iran
2023	Fellow of The World Academy of Sciences (TWAS)
2022	Associate Fellow of the Iran National Academy of Sciences
2022	Nationwide Outstanding Teacher award, Ministry of Science, Research and Technology, Tehran, Iran
2021	Outstanding Research Award of the EE Department of Sharif University of Technology, Tehran, Iran
2021	Best Presentation Award in 2021 International Conference on Smart Energy Systems and Technologies for paper “Optimization-Based Distribution System Reliability Evaluation: An Enhanced MILP Model”, Finland, 2021.
2017-2022	Honorary Fellow of the Iran National Academy of Sciences
2017	Outstanding researcher Award in the Power Industry, Power Industry & University Collaborations, Ministry of Energy, TAVANIR, Jan. 24, 2017.
2016	PMAPS International Society Merit Award 2016 – Life long achievement award by the Probabilistic Methods Applied to Power Systems International

- Society (PMAPS), “for Contributions to the development and application of probability methods applied to power systems”
- 2015-present Listed among 1% top scientists of the world as reported by Essential *Science* Indicators (*ESI*) and Web of Science Thomson Reuters *ISI*
- 2015 Outstanding Research Award of EE Department of Sharif University of Technology, Tehran, Iran
- 2014-present Appointed by the Deputy President and Chairman of the National Endowment for Science and Technology Elite as the member of “Council of the Foundation and the National Endowment for the Elite”
- 2014 Elevated to the grade of Fellow of the Institute of Electrical and Electronics Engineers (IEEE) [for contributions to the application of probabilistic techniques in power system reliability assessment].
- 2014 Recipient of Allameh Tabatabaei award, Tehran, Iran
- 2013 IEEE PES Technical Committee Prize Paper Award, for “Optimal PMU Placement Based on Probabilistic Cost/Benefit Analysis” paper published in the IEEE Transactions on Power Systems
- 2012 Nationwide Outstanding Research award, Ministry of Science, Research and Technology, Tehran, Iran
- 2012 Outstanding Research Award of Sharif University of Technology, Tehran, Iran, (Ranked 1st)
- 2011 Outstanding Research Award of EE Department of Sharif University of Technology, Tehran, Iran
- 2003 Recipient of the Sixteen Khwarizmi International award
- 2003 Recipient of the World Intellectual Property Organization (WIPO) award for the outstanding inventor
- 2003 Recipient of the World Intellectual Property Organization (WIPO) Gold Medal for the outstanding inventor
- 1998 Elevated to the grade of Senior Member of the Institute of Electrical and Electronic Engineers (IEEE).
- 1998 1998 CAGS/UMI Distinguished Dissertation Award Nomination, Selected among the Doctoral Dissertations in any discipline in Engineering, Medicine and the Natural Sciences which have been completed and accepted by the Graduate School at the University of Saskatchewan between January 1, 1996 to January 1, 1998. (College of Graduate Studies and Research, University of Saskatchewan, Canada)
- 1998 Governor’s General’s Gold Medal Nomination (Department of Electrical Engineering, University of Saskatchewan, Canada)
- 1994-1997 Ph.D. Scholarship, University of Saskatchewan, Canada

1991-1995	Post-graduate scholarship, Ministry of Culture and Higher Education of Iran
1975-1978	Obtained a prestigious scholarship from the Government of Iran for academic excellence during secondary education

## **PROFESSIONAL ACTIVITIES**

### **IEEE Membership**

2024 -	Editor-In-Chief, IEEE Transactions on Smart Grid
2025-	Member of the IEEE PES Ramakumar Renewable Energy Excellence Award Committee
2021-2022	Member of the IEEE PES Fellow Evaluation Committee
2017-2022	Editor-In-Chief, IEEE Power Engineering Society Letters.
2014	IEEE Fellow
1999-2014	IEEE Senior Member
1998-1999	IEEE Member
1994-1998	IEEE Student Member

### **IEEE/PES Activities**

2022	Member of the Task Force on Climate Change, IEEE PES, IEEE Power and Energy Society.
2013-2015	Chair of IEEE Iran Section
2002	Member of the Working Group on System Design for developing <i>IEEE Std 1366-2003: IEEE Guide for Electric Power Distribution Reliability Indices</i> , Transmission and Distribution Committee, IEEE Power and Energy Society
1994-present	Member, IEEE Power and Energy Society
2020-present	Chair, Nomination and Appointment Committee, IEEE Iran Section.

### **Organizer**

2010-present	Chair, Session 6 of CIRED-Iran.
2010	Chair, The first Iranian Conference on Smart Grid, Sharif University of Technology, Tehran, Iran, October 2010.
2010	Chair, Smart Grid and Advanced Metering Seminar, Niroo Research Institute, Tehran, Iran, April 2009.
2007	Chair, Conference on Restructured Power Systems (CRPS), Tehran, Iran, October 2007.

### **Member of Editorial Boards**

2023	Guest Associate Editor (Lead), Special Issue on “Reliability and Resilience Modelling, Assessment, and Enhancement of Modern Power Systems with Proliferation of Grid-Edge Resources”, IET Generation, Transmission & Distribution.
2023	Guest Associate Editor, Special Issue on “Climate Change Mitigation and Adaptation in Power and Energy Systems (CMAP)”, Elsevier's International Journal of Electrical Power & Energy Systems.
2023	Guest Associate Editor, Special Issue on “Electric Vehicle Charging Impacts on Power Systems”, IET Generation, Transmission & Distribution.
2022	Associate Editor, Nature Scientific Report.
2022-present	Deputy Editor-in-Chief, Journal of Protection and Control of Modern Power Systems" (PCMP), Springer <a href="https://pcmp.springeropen.com/about/editorial-board">https://pcmp.springeropen.com/about/editorial-board</a>
2020-present	Editor, Journal of Modeling and Simulation in Electrical and Electronics Engineering, University of Semnan, Iran, 2020.
2020	Guest Editor, Special Issue on “Reliability and Resiliency of Modern Power Electronic-Based Power Systems (PEPS)”, IEEE Journal of Emerging and Selected Topics in Power Electronics.
2020	Guest Associate Editor, Special Issue on “Modelling and Analysis of Interaction between Grids and Grid Connected Power Electronics Converters in Distribution Networks”, IEEE Journal of Emerging and Selected Topics in Power Electronics.
2019	Guest Editor, Special Issue on “Recent Advances in Electric Power System Planning with High Penetration of Renewable Energy”, International Journal of Electrical Power & Energy Systems.
2019	Guest Editor, Special Issue on “Machine Learning, Data Analytics, and Advanced Optimization Techniques in Modern Electric Power Systems”, Journal Scientia Iranica, Sharif University of Technology, Iran
2018-2019	Editor, Journal of Modern Power Systems and Clean Energy
2017-Present	Editor-In-Chief, IEEE Power Engineering Society Letters.
2015	Guest Editor, Special Issue on “Power quality in Smart Grid”, IEEE Transactions on Smart Grid
2013	Guest Editor, Special Issue on “Asset Management in Smart Grid”, IEEE Transactions on Smart Grid
2011-2012	Guest Editor-in-Chief, Special Issue on “Smart Micro Grid”, IEEE Transactions on Smart Grid
2009-2017	Editor of the IEEE Transactions on Smart Grid

2010-present	Member of the Editorial Board, Journal of Scientia Iranica in Power Electronics, Energy Management Systems
2009-present	Member of the Editorial Board, International Journal of Electrical and Power Engineering
2009-present	Member of the Editorial Board, International Journal on Power System Optimization

### **International Conferences Activities**

2025	Member of the ASPCOM 2025 International Advisors. 13 <sup>th</sup> IET International Conference on Advances in Power System Control, Operation and Management (APSCOM), Nov. 9-12, 2025, Hong Kong.
2025	Member of Scientific Committee for the 6 <sup>th</sup> International Conference on Optimizing Electrical Energy Consumption, February 25-26, 2025, Islamic Azad University of Najafabad, Najafabad, Iran.
2025	Member of Scientific Committee for the 5 <sup>th</sup> Conference on Applied Research in Electrical Engineering (AREE2025), February 4-5, 2025, Shahid Chamran University, Ahvaz, Iran.
2024	Member of Scientific Committee for the 4th Conference on Applied Research in Electrical Engineering (AREE2024), February 13-14, 2024, Shahid Chamran University, Ahvaz, Iran.
2024	Member of Scientific Committee for the 11th Iranian Conference on Renewable Energy & Distributed Generation (ICREDG), March 2024, Yazd, Iran.
2023	Member of International Steering Committee for the 14 <sup>th</sup> International Conference on Electrical and Electronics Engineering, (ELECO 2023), Bursa, Turkey, Nov. 30- Dec. 2, 2023.
2022	Member of Scientific Committee for the 26 <sup>th</sup> Electric Power Distribution Conference, May 11-12, 2022, Tehran, Iran.
2022	Member of the International Technical Advisory Committee (ITAC) for the Probabilistic Methods Applied to Power Systems (PMAPS) 2022 Conference, Manchester, UK, June 12-15, 2022.
2022	Member of the International Technical Advisory Committee (ITAC) for the Probabilistic Methods Applied to Power Systems (PMAPS) 2022 Conference, Manchester, UK, June 12-15, 2022.
2021	General Co-Chair of International Conference on Electric-Vehicle, Smart-Grid and Information Technology, Nov. 29- Dec. 1, 2021.
2021	Member of the International Technical Committee for the SGES 2021 International Conference on Smart Grids and Energy Systems (SGES), Melbourne, Australia, 2021.

- 2021 Member of Scientific Committee for the 11<sup>th</sup> International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (ENERGY 2021), May 30, 2021 to June 03, 2021, Valencia, Spain.
- 2021 Member of Scientific Committee for the 6th International Reliability and Safety Engineering Conference (IRSEC 2020), Shiraz University, Shiraz, Iran, February 17-18, 2021.
- 2021 Member of Scientific Committee for the 25<sup>th</sup> Electric Power Distribution Conference, Alborz Distribution Company, Karaj, Iran, May 2021.
- 2021 Member of Technical Program Committee for “The First National Conference of Applied Researches on Water and Power Industry, Kermanshah, Iran, Jan. 1-2, 2021.
- 2020 Member of the International Technical Committee for the SGES 2020 International Conference on Smart Grids and Energy Systems (SGES), Perth, Australia, Nov. 23-26, 2020.
- 2020 Member of Technical Program Committee for the 2<sup>nd</sup> Global Power, Energy and Communication Conference (GPECOM2020), Ephesus, Izmir, Turkey, Oct. 20-23, 2020.
- 2020 General Co-Chair of the International Conference on Electric-Vehicle, Smart Grid and Information Technology (ICESI 2020), Korea, 2020.
- 2020 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAPS) 2020 Conference, Belgium, 2020.
- 2019 Member of the International Technical Committee for the 2019 9<sup>th</sup> International Conference on Power and Energy Systems (ICPES), Perth, Australia, Dec. 10-12, 2019.
- 2018 Member of the International Technical Committee for the 11th Advances in Power System Control, Operation and Management (APSCOM), Nov. 12-14, 2018, IET Hong Kong.
- 2018 Member of International Steering Committee for the 5<sup>th</sup> International Reliability and Safety Engineering Conference, (IRSEC2017), Shiraz, Iran, May 8-10, 2018.
- 2018 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAPS) 2018 Conference, USA, 2018.
- 2017 Member of International Steering Committee for the 9<sup>th</sup> International Conference on Electrical and Electronics Engineering, (ELECO 2017), Bursa, Turkey, Nov. 30- Dec. 2, 2017.
- 2017 Member of Scientific Committee for the 25<sup>th</sup> International Conference on Electrical Engineering, Tehran, Iran, May 2017.
- 2016 Member of the Symposium on Power Industry & University Collaboration, Tavanir, Iran, Jan. 2017.

- 2016 Member of the Scientific Committee for the 6<sup>nd</sup> Iranian Conference on Smart Grid, Graduate University of Advanced Technology (KGUT), Kerman, Iran, Dec. 2016.
- 2016 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAAPS) 2016 Conference, China, 2016.
- 2016 Member of Scientific Committee for the 21<sup>th</sup> Electric Power Distribution Conference, Alborz Distribution Company, Karaj, Iran, May 2016.
- 2016 Member of Scientific Committee for the 24<sup>th</sup> International Conference on Electrical Engineering, Shiraz, Iran, May 10-12, 2016.
- 2016 Member of Scientific Committee for the 6<sup>th</sup> Conference on Thermal Power Plant, Iran University of Science and Technology, Jan. 19-20, 2016.
- 2015 Member of the Scientific Committee for the 5<sup>nd</sup> Iranian Conference on Smart Grid, Iran University of science and Technology, Tehran, Iran, Dec. 2015.
- 2015 Member of International Steering Committee for the 9<sup>th</sup> International Conference on Electrical and Electronics Engineering, (ELECO 2015), Bursa, Turkey, Nov. 26-28, 2015.
- 2015 Member of the International Technical Committee for the 10<sup>th</sup> Advances in Power System Control, Operation and Management (APSCOM), Nov. 8-12, 2015, IET Hong Kong.
- 2015 Member of the Scientific Committee for the 3<sup>rd</sup> International Conference on Electric Industry Automation, Shiraz University, Shiraz, Iran, Feb. 2015.
- 2015 Member of the Scientific Committee for the 9<sup>nd</sup> Conference on Power System Protection and Control, Amirkabir University, Tehran, Iran, Jan. 2015.
- 2014 Member of the Scientific Committee for the 4<sup>nd</sup> Iranian Conference on Smart Grid, Niroo Research Institute, Tehran, Iran, Dec. 2014.
- 2014 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAAPS) 2014 Conference, UK, 2014.
- 2013 Member of the Scientific Committee for the International Conference of Energy and Power Engineering (ICEPE 2013), Beihai, Guangxi, China, December 20-22, 2013.
- 2013 Member of the Scientific Committee for the 3<sup>rd</sup> Iranian Conference on Smart Grid, Water and Power University of Technology, Tehran, Iran, Dec. 2013.
- 2013 Member of International Steering Committee for the 8<sup>th</sup> International Conference on Electrical and Electronics Engineering, (ELECO 2013), Bursa, Turkey, Nov. 2013.
- 2013 Member of the Technical Committee for the 12<sup>th</sup> IEEE International Conference on Environment and Electrical Engineering (IEEE IEEEIC), Rome, Italy, May 5-8, 2013.

- 2013 Member of the Scientific Committee for the 4<sup>nd</sup> Conference on Partial Discharge in Electrical Apparatus, Sharif University of Technology, Tehran, Iran, Feb. 26-27, 2013
- 2012 Member of the Scientific Committee for the 2<sup>nd</sup> Iranian Conference on Smart Grid, Amirkabir University of Technology, Tehran, Iran, May 23-24, 2012
- 2012 Member of the International Technical Committee for the IEEE 11th International Conference on Environment and Electrical Engineering (EEEIC-2012) conference, Symposium on Smart Grid Operation and Control (ISSGOC) 2012, Italy.
- 2012 Member of the International Technical Committee for the Symposium on Smart Grid Operation and Control (ISSGOC) 2012.
- 2012 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAPS) 2012 Conference, Istanbul, Turkey, 2012.
- 2011 Member of the International Advisory Board for the IEEE Innovative Smart Grid Technology Conference, Perth, Australia, Nov. 13-16, 2011.
- 2011 Member of the Technical Committee for the 10<sup>th</sup> IEEE International Conference on Environment and Electrical Engineering (IEEE EEEIC), Rome, Italy, May 8-11, 2011.
- 2011 Member of the Technical Committee for the second IEEE PES Conference on Innovative Smart Grid Technologies, Anaheim, California, January 17-19, 2011.
- 2011 Member of International Steering Committee for the International Conference on Electrical and Electronics Engineering, (ELECO 2011), Bursa, Turkey, Dec. 2011.
- 2011 Member of the Technical Committee for the 2011 Cigre Canada Conference on Power Systems, Halifax, Nova Scotia, Canada, Sept. 6-8, 2011.
- 2010 Member of the Technical Committee for the 2010 Cigre Canada Conference on Power systems, Vancouver, British Columbia, Canada, Oct. 17-19, 2010.
- 2010 Member of the Technical Committee for the first IEEE PES Conference on Innovative Smart Grid Technologies, Washington DC, 2010.
- 2010 Member of the International Technical Committee for the Probabilistic Methods Applied to Power Systems (PMAPS) 2010 Conference, Singapore, June 2010.
- 2010 Member of the Scientific Committee for the Second conference on Thermal Power Plants, Tehran, Iran, Oct. 26-27, 2010.
- 2010 Member of the Technical Committee for the First Iranian Conference on Renewable Energies and Distributed Generation (ICREDG 2010), Birjand, Iran, 2010.
- 2009 Member of International Steering Committee for the International Conference on Electrical and Electronics Engineering (ELECO 2009), Bursa, Turkey, 2009.

- 2008 Member of International Steering Committee for the International Joint Conference on Knowledge Management (KMCM 2008), Vancouver, BC, Canada, July 8-11, 2008.
- 2007 Member of International Steering Committee for the International Conference on Electrical and Electronics Engineering (ELECO 2007), Bursa, Turkey, 2007.
- 2007 Board of Honor, 2007 International Joint Conference on Knowledge Management (KMCM 2007), Dusseldorf, Germany, July 2-6, 2007.
- 2006 Member of the International Advisory Committee of the IEEE International Conference on Power System Technology (POWERCON 2006), Chongqing, China, Oct. 22-26 2006.
- 2005 Member of International Steering Committee for the International Conference on Electrical and Electronics Engineering (ELECO 2005), Bursa, Turkey, December 2005.

### **External Examiner of PhD Programs**

- 2003-present Murdoch University, Australia
- University of Manitoba, Winnipeg, Canada
- Nanyang Technological University, Singapore, Singapore
- National Institute of Technology Agartala, India
- Universiti Teknologi MARA (UiTM), Malaysia
- University of Tehran, Tehran, Iran
- Amirkabir University of Technology, Tehran, Iran
- Iran University of Science and Technology, Tehran, Iran
- Tarbiat Modarres University, Tehran, Iran
- Power and Water University, Tehran, Iran
- Isfahan University of Technology, Isfahan, Iran
- Bahonar University of Kerman, Kerman, Iran
- Ferdowsi University of Mashhad, Mashhad, Iran
- Shiraz University, Shiraz, Iran

### **Technical Review Activities**

- 1993-presnet Technical reviewer, reviewed several papers for the following Journals: IEEE Transactions on Power Systems, IEEE Transactions on Power Delivery, IEEE Transactions on Energy Conversion, IEEE Transactions on Smart Grid, IEE Proceedings, IET Generation, Transmission and Distribution, Journal of Reliability and System Safety, Journal of Electric Power Systems Research, Power System Computation Conference (PSCC), Journal of Electric Machines and Power Systems and Canadian Journal of Electrical Engineering, KIEE, International Journal of Engineering, Science and Technology, European Transactions on Electric Power (ETEP), Turkish Journal of Electrical Engineering & Computer.

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## RESEARCH EXPERIENCE

2002-Present **Sharif University of Technology**, Research has been conducted and going on over the last twenty five years to solving many challenges of the power system operation and control nationally and internationally. My contributions to power system reliability evaluation include the extensively documented analyses of the “well-being framework” of power systems and have been at the forefront of research which are being extended by industry engineers for practical implementations. Providing sufficient and risk-informed information to power system operators to manage the system reliability, my contribution has been an important innovation and was extremely well received by the power system reliability research community and created considerable interest in electric power industry. Over the years, my distinctive contributions to the power system reliability evaluation have been extended to the cost/worth analysis of Wide Area Measurement System (WAMS) design and Phasor Measurement Unit placement for enhancing the power system reliability, which are also followed by other researchers across the globe.

My innovative work on situational awareness and controllability of power systems would smartly surpass a critical condition when a failure in monitoring and control functions could spread the consequences throughout the power grid. Asset management and the implementation of reliability centered maintenance (RCM) on power distribution system is another major contribution developed. I have been leading RCM efforts both in its preliminary stages and its implementation in several power distribution companies in a number of Provinces in Iran, where it saw huge success, saving the power distribution systems significant costs.

My research team has been and are collaborating with the electric power industry personnel in Iran to implement the proposed methodologies in the nation-wide bulk power grid. In the context of smart distribution systems, a reliability evaluation approach has been developed for predicting the reliability performance of the electric power distribution systems when employing smart grid technologies. The research concern in these works was to address new challenges and opportunities faced by power distribution companies (DISCOs) that affect the optimal planning and operation decisions. In this regard, new methods were proposed for distribution system planning (DSP) considering the smart grid and distribution automation (DA) technologies, methods for planning of DA and models for integrated DA and capacity expansion planning. By increasing the penetration of distributed energy resources (DERs) in power distribution networks, these resources and their associated uncertainties have been modeled in the distribution network expansion planning problem. We also extended the proposed models, algorithms and frameworks on the reliability evaluation of the power grid to its response against extreme events. Our

research on this front has been focused to improve the resilience of electric power systems to devastating threats through advanced and computationally-efficient algorithms, decision making support tools, and innovative models that are capable of handling the emerging concerns and challenges associated with the smart power grids. In particular, I advocate for an enhanced fusion of data via high-performance computing for power system's online situational awareness, and faster-than-real-time monitoring and control decisions specifically tailored to realizing a heightened resilience to evolving environmental stressors and cyber-physical threats. This ground-breaking research has offered and will provide the electric industry with innovative toolsets that enable computationally-efficient, fast, and accurate decisions for resilience and recovery efficiency of the smart grids that could potentially lead to sizeable monetary savings and an enriched overall social welfare. More critically, successful development and execution of these research outcomes and technological solutions could help reduce undesirable social, psychological, and physical outcomes associated with prolonged power outages, e.g., premature death, injury, social unrest, etc.

As a consequence of power system restructuring, performance-based regulations (PBR) have been widely adopted in the power distribution sector. My reliability research team has performed research and industrial projects on reliability incentive schemes in two distinctive paths, namely regulatory design and implementation of the schemes as well as reliability-constrained economic evaluations for power distribution companies. Several of these efforts has led to pilot implementation of this proposed frameworks, witnessing significant annual cost saving.

1998-2001     **Postdoctoral Fellow**, Department of Electrical Engineering, University of Saskatchewan, Canada. The focus of the research conducted in my postdoctoral period was to combine power system security considerations with an overall framework for power system reliability assessment. The framework was developed and is designated as the system well-being approach which embeds the existing deterministic criteria within a probabilistic framework. A focus of the research was to apply the well-being framework to the new competitive utility environment. Research has also been done to examine the impact of power electronic technology, Flexible AC Transmission Systems (FACTS) devices such as Unified Power Flow Controller (UPFC) and Thyristor Controlled Series Capacitors (TCSC), Static Synchronous Series Capacitor (SSSC) on transmission and sub-transmission system reliability. In this context, a reliability model of a device has been developed and incorporated in the transmission system. I have also completed the first phase of a research project related to reliability evaluation of protection systems where studies have been conducted to illustrate the expected reliability benefits by inclusion of monitoring and self-checking facilities within the relay. A project related to the calculation of customer interruption cost in Manitoba has also been completed.

- 1991-1997 **Graduate Student**, (M.Sc. & Ph.D.), Department of Electrical Engineering, University of Saskatchewan, Canada. Conducted research on probabilistic techniques for unit commitment and operating reserve assessment of generating systems and composite generation and transmission systems and the application of probabilistic methods to power system analysis.
- 1986-1991 **Senior Engineer**, worked with Iran's Ministry of Energy in planning training courses for power transmission and distribution engineers.
- 1986-1989 **Graduate Student**, (M.Sc.), Department of Electrical Engineering, University of Tehran, Iran. Conducted research on the application of Power Electronics for speed control of induction motors.

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## TEACHING EXPERIENCE

- 2009-present **Professor**, Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran
- 2004-2009 **Associate Professor**, Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran
- 2002-2004 **Assistant Professor**, Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran
- 2000-2002 **Term-faculty and Sessional Lecturer**, Department of Electrical Engineering, University of Saskatchewan, Canada. Responsibility included coordinating/ conducting third and second year labs (EE319, Electrical Engineering Lab III), (EE391, Electrical Engineering Lab III), (EE292, Electrical Engineering Lab II). Teaching undergraduate courses (EE488, Reliability of Engineering Systems), (EE212, Passive AC Circuits) and graduate courses (EE850, Reliability of Engineering Systems) and (EE851, Power System Reliability) and conducting research in the area of power system.
- 1991-2000 **Teaching Assistant**, Department of Electrical Engineering, University of Saskatchewan, Canada. Responsibility included conducting lab sessions and evaluating assignments for undergraduate engineering courses. Participated in the teaching of undergraduate/graduate level courses.
- 1986-1991 **Lecturer**, Power and Water Institute of Technology, affiliated to the Ministry of Energy, Tehran, Iran. Taught short courses in electrical engineering. Also worked in this university to establish a laboratory in special electrical machines for teaching purposes.
- 1985-1986 **Teaching Assistant**, Sharif University of Technology, Tehran, Iran

## INDUSTRIAL ACTIVITIES

2010-2014	<b>Member of the Executive Committee</b> , Iran Grid Management Company (IGMC)
2010-2013	<b>Member</b> , Iran Distribution System Reliability Council
2009-2012	<b>Member of the Research Committee</b> , Yazd Regional Electric Company
2009	<b>Chair</b> , Taskforce for developing reliability related keywords, Iran Electric Reliability Council
2008-2017	<b>Member</b> , Iran Electric Reliability Council
2008-2017	<b>Member of the Research Committee</b> , Iran Grid Management Company (IGMC)
2008-2018	<b>Member of the Executive Committee</b> , Iran Transformer Research Institute (ITRI)
2007	Member of the consultative committee and chairman of scientific subgroup on Ancillary services (reserve requirements and frequency control)
2004-2019	<b>Technical consultant</b> for IGMC in power system reliability issues
2001-2004	<b>Technical consultant</b> for TAVANIR (Iran electricity holding company) in power system reliability issues
1986-1991	<b>Senior Engineer</b> , Ministry of Energy, Responsible for developing and teaching short-courses for skill enhancement of technicians and engineers employed in utilities under the jurisdiction of the Ministry of Energy, Iran. Formulated the course contents in coordination with the technical personnel of different utilities. Detailed reports related to the courses were prepared and circulated in the concerned establishment. These courses, conducted at different levels, were termed compulsory by the Ministry of Energy to the technical employees for improving their employability and offering opportunities for their promotional avenues.



## INVITED TALKS, SHORT COURSES GIVEN AT EDUCATIONAL INSTITUTIONS AND INDUSTRY

1. Keynote Speaker, "The Role of Innovation and Technologies in Upcoming Electric Power Systems" , 9<sup>th</sup> International Conference on Technology and Energy Management, (ICTEM 2024), University of Science and Technology of Mazandaran, Behshahr, Mazandaran, Iran, Feb. 14-15, 2024.

2. "Advanced Power System Reliability", North China Electric Power University, Boading, China, Jan. 2024.
3. Invited Speaker, "A New Framework for Assessment and Optimal Enhancement of Multi-Microgrid Distribution System Reliability", Kerman Graduate University of Industrial and Advanced Technology & Iranian Society of Smart Grid, Kerman, Iran, Dec. 4, 2023.
4. Keynote Speaker, "Building Resilience and Safeguarding Our Modern Society Against Power Outages and Large-Scale Blackouts", 14<sup>th</sup> International Conference on Electrical and Electronics Engineering, (ELECO 2023), Bursa, Turkey, November 30-December 2, 2023.
5. Keynote Speaker, "Sustainable and Reliable Electric Power Systems of the Future: Challenges & Opportunities", The 10th Regional CIRED Conference on Electricity Distribution, Tehran, Feb. 14, 2023.
6. Keynote Speaker, "Challenges and Opportunity for Reliability Assessment of Cyber-Physical Electric Power Grids", Third Conference on Applied Research in Electrical Engineering (AREE2023), Shahid Chamran University, Ahvaz, Feb. 8, 2023.
7. Short Course in "An Introduction to Reliability Assessment of Electric Power Systems", Kermanshah Distribution Electricity Company, June 2022.
8. Invited Speaker, "Cost of electricity interruptions to industry customers", Kerman Regional Electrical Company, June 22, 2022, Kerman, Iran.
9. Keynote Speaker, "Reliability Regulation and Target Determination in Distribution Systems", 9th Regional Conference on Electricity Distribution (CIRED), Tehran, Jan. 18, 2022.
10. Keynote Speaker, "A Review on Challenges and Opportunities for Reliability Assessment of Cyber-Physical Electric Power Grids", 8th Regional Conference on Electricity Distribution (CIRED), Tehran, Feb. 22, 2021.
11. Invited Speaker, "Renewable Energy and Power System Reliability", 6th International Reliability and Safety Engineering Conference (IRSEC), Shiraz, Iran, Feb. 18, 2021.
12. Keynote Speaker, "Regulatory Incentives for Distribution System Reliability; Principles, Practical Examples, and Current Trends", "17th International Conference on the European Energy Market (EMM)", Stockholm, Sweden, Sept. 16-18, 2020.
13. "Reliability Issues in Todays Electric Power Systems", North China Electric Power University, Beijing, China, Jan. 2020.
14. "Reliability Assessment in the Electric Power Systems", Aalto University, Finland, August 2019.
15. "Reliability Assessment in the Electric Power Systems", Aalborg University, Denmark, March 11-14, 2019.
16. "Reliability Assessment in the Electric Power Systems", Aalto University, Finland, Aug./Sept. 2018.

17. "Reliability Assessment in the Electric Power Systems", Aalto University, Finland, Aug./Sept. 2017.
18. "Impacts of University-Industry Collaboration on Resilient Economy", Keynote Speaker, 3<sup>rd</sup> Power Industry & University Collaboration, Tehran, Iran, Jan. 2017.
19. "Challenges in University-Industry Collaboration", Bushehr Polymer Industrial Group, Bushehr, Iran, Oct. 2016.
20. "Risk Assessment of Power Systems", Invited speaker, 4th International Reliability Engineering Conference, Sahand University of Technology, Tabriz, Iran, May 2-4, 2016.
21. "Reliability-Centered Maintenance (RCM) - A new Framework in Electric Power Distribution Asset Management", Invited Speaker, Arak Distribution Company, Arak, Iran, Dec. 2015.
22. "Reliability-Centered Maintenance (RCM) - A new Framework in Electric Power Distribution Asset Management", Keynote Speaker, Iran CIRED Conference, Niroo Research Institute, Tehran, Iran, Nov. 2015.
23. "Reliability-Centered Maintenance (RCM) Implementation in Electric Power Systems - Experiences of Sharif University of Technology", (IFRIM), Sharif University of Technology, Iran, May 2015.
24. "University Industry collaborations", Kharazmi Group, Kermanshah, Iran, May 2015.
25. "Distribution Automation System; Infrastructures and Capabilities", The 3<sup>rd</sup> international congress on electric industry automation, Shiraz, Iran, Feb. 24-25, 2015.
26. "Generation System Reliability Assessment", 7<sup>th</sup> Electric Power Generation Conference & Exhibition, Bandar-Abbas, Feb. 17-18, 2015.
27. "Security Challenges in Electric Power Systems: Physical Security and Information Security", Invited Speaker, Iran CIRED Conference, Niroo Research Institute, Tehran, Iran, Nov. 2014.
28. "Upcoming Challenges of Future Electric Power Systems: Sustainability and Resiliency", University of Irvine, Academy of Science, USA, 2014.
29. "Distribution Automation System; Infrastructures and Capabilities", 10th internal Conference in North Kerman Distribution Electric Company, Feb. 2014, Kerman, Iran.
30. "Reliability Issues in Today's Electricity Power Systems", Keynote speaker, 8th Condition Monitoring and Fault Diagnosis Conference-CMFD2014, Sharif University of Technology, Tehran, Iran, March 2014.
31. "Smart Grid: A New Paradigm in Electricity Industry", Keynote speaker, 12<sup>th</sup> Iranian Conference on Intelligent Systems (ICIS 2014), Kerman, Iran, Feb. 2014.
32. "Challenges of Renewable Energy Resource Integration in Power Systems", Invited Speaker, Queensland University of Technology, Brisbane, Australia, Dec. 2013.
33. "Reliability Assessment in the Electric Power Systems", Aalto University, Finland, Sept. 2013.

34. "Load Commitment in a Smart Home", Invited Speaker, Chinese University of Hong Kong, Hong Kong, Nov. 2012.
35. "Smart Grid; A New Paradigm in Electricity Industry", Invited Speaker, Iran Academy of Science, Tehran, Iran, Dec. 2012.
36. "Publication: Tricks and Ethics", Universiti Teknologi MARA (UiTM), Malaysia, Sept. 2012.
37. "Reliability Issues in Electric Power Systems", Universiti Teknologi MARA (UiTM), Malaysia, Sept. 2012.
38. "Smart Grid: Introductions, Pillars, and Applications", Universiti Teknologi MARA (UiTM), Malaysia, Sept. 2012.
39. "Security Challenges in Electric Power Systems: Physical Security and Information Security", Invited Speaker, 20th Iranian Conference on Electrical Engineering, ICEE2012, University of Tehran, Iran, May 2012.
40. "Power System Security Assessment Incorporating Communication System Failure", Invited Speaker, Khjeh Nasir University, Tehran, Iran, Jan. 2012.
41. "Reliability Issues in an electric power systems," Invited Speaker, Islamic Azad University, Zanzan, Iran, Dec. 2011.
42. "Distribution network as electricity market place and impact of regulation," Invited Speaker, Iran Cired workshop, Tehran, Iran, Sept. 2011.
43. "Demand-Side Resources and Their Impacts on Reliability of Smart Electricity Grids," Invited Speaker, Smart Grid Seminar, Abbaspour University of Technology, Tehran, Iran, March 2011.
44. "Reliability Assessment of Electric Power Systems," Invited Speaker, Congress of Power Week, Amirkabir University of Technology, Tehran, Iran, 2010.
45. "A short course in Power System Reliability," Short course, Helsinki University of Technology, Finland, Sept. 2010.
46. "A short course in Power System Reliability," Short course, Helsinki University of Technology, Finland, Sept. 2009.
47. "A short course in Power System Reliability," Invited Speaker, Isfahan Power Regional Company, Isfahan, Iran, Aug. 2008.
48. "A short course in Power System Reliability," Invited Speaker, Yazd Power Regional Company, Isfahan, Iran, Feb. 2008.
49. "A short course in Power System Reliability," Invited Speaker, Hormozgan Power Regional Company, Bandar Abbas, Iran, Feb. 2008.
50. "Reliability Issues in Today's Electricity Market," Invited Speaker, IEEE Branch of Kerman, Kerman, Iran, Summer 2008.
51. "Distribution System Reliability," Workshop, 10th Conference on Distribution Network, University of Tabriz, Tabriz, Iran, May 2005.

52. "Reliability Assessment of an Electric Power System," Invited Speaker, Congress of Power Week, Amirkabir University of Technology, Tehran, Iran, 2005.
53. "Restructuring in Electric Power Systems," Workshop, Fars Institute for Education and Research, Affiliated to the Ministry of Energy, Shiraz, Iran, Summer 2004.
54. "Restructuring in Electric Power Systems," Workshop, Zahedan Institute for Education and Research, Affiliated to the Ministry of Energy, Zahedan, Iran, Summer 2004.
55. "Restructuring in Electric Power Systems," Workshop, Kermanshah Institute for Education and Research, Affiliated to the Ministry of Energy, Hamadan, Iran, Summer 2004.
56. "Restructuring in Electric Power Systems," Workshop, Esfahan Institute for Education and Research, Affiliated to the Ministry of Energy, Esfahan, Iran, Summer 2004.
57. "Restructuring in Electric Power Systems," Workshop, Khorasan Institute for Education and Research, Affiliated to the Ministry of Energy, Mashhad, Iran, Summer 2004.
58. "Reliability Assessment of Electric Power Distribution Systems," Invited Speaker, IEEE Branch of Mazandaran, Sari, Iran, 2004.
59. "New Techniques in Power System Reliability Assessment," Invited Speaker, 2<sup>nd</sup> Congress of the IEEE Branch of Kerman, Kerman, Iran, 2004.
60. "Power System Reliability Evaluation," Keynote Speaker, Power Engineering Conference, Water and Power University of Technology, Tehran, Iran, 2003.
61. "Power System Reliability Evaluation," Invited Speaker, IEEE Branch of Khorasan, Mashhad, Iran, Summer 2003.
62. "Reliability Assessment of an Electric Power Systems," Keynote Speaker, 8<sup>th</sup> Congress of Electrical Engineering Students, Babol, Iran, 2003.



## SELECTED INDUSTRIAL RESEARCH GRANTS AND CONTRACTS

- |      |  |
|------|--|
| 2021 | Devising the comprehensive plan for Alborz electric power distribution system resiliency via pinpointing, recommending, and standardizing the proper procedures and proposing viable and remedial actions to improve the resiliency of the system, <i>Alborz Distribution Company, Alborz, Iran.</i> |
| 2020 | Evaluation and Calculation of Optimal and Economical Reliability Indices for Tehran Electric Distribution Network, <i>Tehran Electric distribution Company, Tehran, Iran.</i>  |
| 2020 | Earthquake Resilience Evaluation of Medium Voltage Distribution Networks and Proposing Efficient Solutions in order to Improve Network Resilience, <i>Alborz Distribution Company, Alborz, Iran.</i>   |

- 2019 Electric service continuity in communication center, *Zirsakht Communication company, Tehran, Iran.*
- 2018 A Feasibility Study on Microgrid Usage in Yazd Distribution Company with the Goal of Using Renewable Energies and Distributed Energy Resources, *Yazd Distribution Company, Yazd, Iran.*
- 2017 Locating the Optimum Maneuver Points Considering the Generation and Demand uncertainties and System's Operational Constraints, *East Azarbayejan Distribution Company, Tabriz, Iran.*
- 2016 Impacts of Station Originated Outages on Transmission and Sub-transmission Network Reliability of Tehran Regional Electric Company (TREC), *Tehran Regional Electric Company, Tehran, Iran.*
- 2015 Design of a comprehensive reliability equipment information system for generating units, *Niroo research Institute, Tehran, Iran.*
- 2015 Design of a comprehensive reliability equipment information scheme for Transmission systems, *Niroo research Institute, Tehran, Iran.*
- 2014 Feasibility study on the use of Electric Vehicle on *Smart Power Distribution Systems*, Saba, Tehran, Iran
- 2013 Implementing *Incentive-Based Regulations for Reliability Improvements in South Kerman Power Distribution Systems*, Kerman, Iran
- 2011 *Study and Design of Incentive-Based Regulations for Reliability Improvements in Power Distribution Systems*, TAVANIR, Tehran, Iran
- 2011 *Design of a framework for Reliability Centered Maintenance (RCM) in Power Distribution Systems*, TAVANIR, Tehran, Iran
- 2010 *Feasibility Study on Developing a Software for Reliability Evaluation of Power Systems*, Iran Grid Management Company (IGMC), Tehran, Iran
- 2010 *Investigating the Protection Methods for Multi-Terminal Transmission Lines and Their Impact on Reliability of Iranian Power Grid*, Iran Grid Management Company (IGMC), Tehran, Iran
- 2010 *Designing Methods and Instructions for Implementing Reliability-Centered Maintenance (RCM) in Iran Power Distribution Systems*, TAVANIR, Tehran, Iran
- 2010 *Reliability Assessment of Isfahan Regional Electric Company*, Isfahan Regional Electric Company, Isfahan, Iran
- 2010 *An Introduction to Demand Response Resources and Feasibility Study on Implementing Them in Yazd Regional Electric Company*, Yazd Regional Electric Company, Yazd, Iran
- 2010 *Reliability Evaluation of HV Substations in the Presence of Fault Current Limiter (FCL)*, Iran National Science Foundation (INSF), Tehran, Iran



## GRADUATE STUDENTS

### Ph.D. Students (Date of graduation is given in parenthesis)

1. A. Zargar-Rezaei (ongoing) Multi-Microgrid Based Distribution Network Resilient Expansion Planning Considering the Private Ownership and Dynamic Boundaries of Microgrids
2. M. Cheginizadeh (ongoing) Managing flexibility resources to enhance resiliency of distribution systems using AI-based approaches
3. H. Tarzamni (ongoing) Comprehensive design and optimization of electric vehicle DC-DC converters for a predictable failure rate (advisor)
4. H. Goudarzi (ongoing) Energy and Reserve Market Clearance Considering Participant Losses in Non-Convex Environment
5. M. Farrokhi (Ongoing) Multi-Microgrids Structure Based Distribution Network Planning
6. S. A. Hosseini (2023) Power System Frequency Regulation Improvement Using Delay Compensation of Demand Response
7. N. Pourghaderi (2023) Developing a Market-based Framework for Exploiting Flexibility Capabilities of Distribution Network's Resources Using the Concept of Virtual Power Plant
8. S. Fattahian (2023) Resources Management in a Distribution System with High-Penetration of Renewable Energies Considering Flexibility Concept
9. M. Kabirifar (2023) Developing a New Framework for Expansion Planning Studies of Active Distribution Network Based on Optimal Management of Energy Resources
10. M. Gholami (2021) A Multi-Agent Design for Automation in Active distribution Network Considering Cost-Worth Analysis
11. Iman Khonakdar (2021) Determining Optimal Maintenance Algorithm in a Distribution Network in Presence of Incentive Regulation (Supervisor)
12. M. Joshaki (2020) Electricity distribution System Planning Considering Incentive Reliability Regulation (Advisor)
13. R. Ghorani (2020) Designing a Risk Management Framework for a Electricity Retailer (Supervisor)
14. H. R. Masrour (2019) Operation and Reliability Investigation of Multi-Carrier Energy Systems in Presence of Responsive Energy Loads and Renewable Energies (Supervisor)

15. Hamed Sabouhi (2019) Providing an Index to Compare the Resilience of Power Grids (Advisor)
16. S. Riahinia (2018) Design a Comprehensive Framework for Distribution System Restoration in the Presence of Distributed Generations and Energy Storage Systems (Advisor)
17. S. Heidari (2017) Distribution system planning incorporating distribution automation (Supervisor)
18. R. Dorostkar (2017) Impacts of Reconfiguration in Operation and Planning of Smart Distribution system Grids (Supervisor)
19. H. Farzin (2016) Reliability Studies of a Smart Distribution System Based on the Concept of Multi-Micro Grid (Supervisor)
20. M. Rastegar (2015) Home Load Management in an Energy Hub and its Impacts on Power Network (Supervisor)
21. A. Safdarian (2014) Optimal Design of Price-Based Demand Response Programs in Distribution Networks, (Supervisor)
22. M. Moeini (2014) Designing the Structure of a PHEV Aggregator in Multi-carrier Energy Environment, (Advisor)
23. M. Parvania (2013) Demand Response Scheduling, (Supervisor)
24. A. Ghaedi (2013) Operation Reserve Determination in a Power System with Significant Wind and Solar Generations, (Advisor)
25. M. Ghazvaeni (2013) Hybrid System Optimization in Microgrid Systems, (Advisor)
26. H. Mohamadnezhad (2012) Design of Incentive Scheme for Reliability Improvement In Electricity Distribution Systems, (Supervisor)
27. S. Kazemi (2011) Reliability Evaluation of Smart Distribution Grid, (Supervisor)
28. A. Akhavein (2011) Composite System Reliability Equivalent, (Supervisor)
29. F. Aminifar (2011) Probabilistic Placement of PMUs Considering Network Observability, (Supervisor)
30. A. Rajabi (2010) Probabilistic Assessment of Available Transfer Capability Incorporating FACTS Devices, (Supervisor)
31. M. Najafi (2010) Optimal reserve capacity allocation with consideration of customer reliability requirements, (Advisor)
32. A. Ehsani (2008) Reliability evaluation and Provision of Spinning Reserve in Restructured Power systems, (Advisor)
33. K. Afshar (2007) Determination and Reserve Pricing in the Restructured Environment, (Co-Supervisor)
34. H. Gharagozloo (2006) Reliability Assessment of Composite Power Systems Using Equivalent Technique and Network Reduction, (Advisor)

**M.Sc. Students (Date of graduation is given in parenthesis)**

1. M. R. Zarei (ongoing) Flexibility management of distributed energy resources in distribution networks using artificial intelligence models (supervisor)

2. E. Younesi (2025) Assessment of Aggregators' Operation and Value Sharing in Flexibility Market (advisor)
3. M. A. Hasanabadi (2025) Reliability-based expansion planning of distribution networks considering load point reliability indices (supervisor)
4. A. Zandi(2023) Determination of the optimal number of microgrids in an active distribution network considering network expansion plans (supervisor)
5. S. Taheri (2023) Efficient and Economic Reliability Target Setting and Legislation in Electric Power Distribution Systems(supervisor)
6. M. Naserian (2023) Developing Prerequisites for the Implementation of Incentive-Based Demand Response – Predicting Demand Response Potential and Estimating the Baseline Load Pattern Using Machined Learning method (supervisor)
7. M. Ganjkhani (2022) Identification and Detection of Cyber-Attack on Smart Grid Using Artificial Intelligence
8. M. Omri (2022) Developing a Framework for Assessment and Optimal Enhancement of Multi-Microgrid Distribution System Reliability
9. A. Moghimifam (2022) Determination of the Desired and Economical Reliability Level in Electric Power Distribution Systems Considering Network condition
10. A. Fallah (2022) Semi- automated Distribution System Planning with Considering Decentralized Automation at feeder level (supervisor)
11. M. Sadeghian (2022) Investigating the Effects of Distribution Automation on Network Resiliency and its Improvement (supervisor)
12. S. Moradi (2021) Distribution System Planning Considering Demand Response programs
13. A. Salehi (2021) Developing an Optimal Algorithm for State Estimation in Active Distribution Systems Based on Cost-Worth Analysis (Supervisor)
14. A. Zarrin (2021) Developing a Framework for Determining the Amount of Operating Reserve Delivered by Virtual Power Plants (VPPs) in Power Systems with High Penetration of Renewables, (Advisor)
15. M. Habibi (2021) Evaluating Capacity Value of Renewable Energy Sources Considering Storage Systems (Supervisor)
16. M. Tofghi (2021) Efficient Distributed Management of Local Resources in Multi-Agent Distribution systems (Supervisor)
17. A. Rajaei (2019) Developing a New Mechanism for Managing Technical Issues of Energy Transactions in Transactive Energy Market (Supervisor)

18. F. Amani (2020) Developing an Efficient Approach for Improving Operational Resilience of Natural Gas and Power Distribution Network in Facing with Earthquake (Supervisor)
19. S. Zare (2018) Financial risk management of an electricity retailer in the presence of intermittent generation and demand response (Supervisor)
20. A. Zargar-Rezaei (2018) Transmission expansion planning considering network topology optimization (Supervisor)
21. A. Arjonamandi (2018) Developing an Efficient Framework for Investigating the Abilities of Network Reconfiguration in Improving Operational Resilience of Distribution System (Supervisor)
22. F. Mirkhaef (2016) Developing a Framework for Efficient Usage of Distributed Generation Expansion Plans in Distribution Network Considering the Effect of Reward and Penalty Mechanism
23. M. Khoshjahan (2017) Developing an Optimal Framework for Energy Storage Systems (ESSs) Participation in Flexible Ramping Market to Enhance Reliability of Power Systems
24. N. Pourghaderi (2017) Developing an Efficient Framework for Bidding Strategy of a Technical Virtual Power Plant Considering Network Reliability (Supervisor)
25. M. Nazemi (2017) Planning studies of energy storage systems in distribution network with the main goal of improving resiliency of system (Supervisor)
26. H. Mazaheri (2017) Transmission System Planning in Presence of Storage Systems (Supervisor)
27. K. Esmailian (2016) Developing an optimal approach for maintenance procedure in combined cycle power plants
28. M. Zehtab, (2016) An Investigation on the Energy Hubs Development in Urban Distribution Areas (Supervisor)
29. H. Marfou (2016) Developing a new approach for reliability evaluation of large scale composite systems
30. M. Zareh (2016) Improving the Resiliency of Distribution Grids Owning Different Distributed Generation (DG) Resources by Optimal Switching Device Placement and Microgrids Formation (Advisor)
31. M. Kabirifar (2016) Residential Demand Response Coordination to Enhance Network Reliability (Supervisor)
32. M. Farajollahi (2016) Reliability Oriented Optimal Placement of Sectionalizing Switches and Fault Indicators (Supervisor)
33. S. Tavakkoli (2015) Optimal Employment of Energy Storage System in Energy Hub (Supervisor)
34. F. Mir-Ahmadi (2015) Modeling of Electric Vehicles Using System Dynamics (Supervisor)

35. M. Ganjkhani (2015) Impact Assessment of Cyber Attacks in Power Market Operations (Advisor)
36. M. Bahrami (2015) Risk Assessment of Cyber Attacks on Smart Grid (Advisor)
37. Z. Parvini (2015) Short-Term and Mid-Term Reliability Evaluation of High-Wind Penetrated Power Systems in Presence of Energy Storage Systems (Advisor)
38. N. Sarajpour (2015) Designing a Proper Residential Demand Response Program to Improve Distribution System Reliability (Supervisor)
39. A. Tabatabaei (2015) optimal transmission switching as a remedial action to enhance composite system reliability (Advisor)
40. M. Farrokhi (2015) Automatic Voltage and VAR Control in Smart Distribution Grids Considering Network Reliability and Demand Response Programs (Supervisor)
41. F. Askari (2014) Operation of Distribution Systems with High Penetration of wind Energy (Supervisor)
42. S. Fattahian (2014) Optimum Maintenance Strategy of Transmission Substations Equipment Incorporating Reliability Centered Maintenance (RCM) (Supervisor)
43. F. Pourahmadi (2014) An Optimum Framework and a Step-by-Step Implementation Process for Reliability Centered Maintenance (RCM) in Power Generation Systems (Supervisor)
44. M. Mazidi (2014) Optimum Allocation of Hybrid Electric Vehicles' Charging stations Incorporating Distribution System Reliability Criteria (Advisor)
45. A. Zareh (2014) Proposing a Profit-Based Strategy for Optimal Energy Management at Electric Vehicles' Public Parking Decks (Advisor)
46. M. Jooshaki (2014) Designing a Reward-Penalty Scheme to Improve Technical Performance of Distribution System Employing Distributed Generation (DG) Resources (Advisor)
47. M. H. Barmayoon (2014) An Investigation on the Energy Hubs Development in Urban Areas (Supervisor)
48. M. H. Gholami (2013) Impact of Communication System Failure in Feeder Automation (Supervisor)
49. R. Ghorani (2013) Reliability Centered Maintenance in Power Transmission (Supervisor)
50. S. Riahinia (2013) Determining the Optimal Level of Reserve in Power Systems with High Penetration of Wind Energy (Advisor)
51. H. Sabouhi (2013) Reliability Centered Maintenance (RCM) Implementation in Thermal and combined cycle power plants (Advisor)
52. M. Hozouri (2013) Developing an Optimal Strategy to Manage the Curtailment of Wind Farms Output (Advisor)
53. A. Allahyari (2013) Considering Customer Interruption Cost in PHEV Charging Control (Supervisor)

54. M. H. Ghasemifard (2012) Design of a Novel Real-Time Pricing Tariff for Efficient Distribution System Operation Incorporating Demand Response
55. V. Rastegar-M (2012) Probabilistic Distribution Load Modeling Incorporating Distributed Generations
56. S. Shafiee (2012) Charging Strategy of Plug-in Hybrid Electric Vehicle to Reduce Distribution Congestion
57. S. Heidari (2012) Power Distribution Planning Using Smart Grid Technologies
58. M. Aein (2012) Assessment of Optimal Power Flow(OPF) Uncertainty in Hybrid Wind-Photo Voltaic(PV) Power Systems
59. P. Dehghanian (2011) Reliability Centered Asset Management Implementation on Power Distribution Systems, (Supervisor)
60. M. Rastegar (2011) Smart Home Incorporating Optimal Residential Load Control, (Supervisor)
61. M. Hedayati (2011) Reliability Assessment of Communication system in power grid, (Advisor)
62. Z. Shahouyi (2011) Reliability Improvement of Power System Incorporating ESS with Wind Farm, (Advisor)
63. S. Modarresi (2011) Impact of distribution network automation on performance based regulation (PBR), (Supervisor)
64. Y. Tohidy (2011) Optimum Selection of Generating Unit Size in a Power System from a Reliability Point of View, (Supervisor)
65. M. Moeini (2010) Transmission Expansion Planning For Implementing Large Scale Distant Wind Farm, (Advisor)
66. A. Safdarian (2010) Composite System Reliability Assessment using Post Optimal Contingency Analysis, (Supervisor)
67. M. R. Dorostkar (2009) Reliability Analysis of Distributed Series Synchronous Compensator (DSSC) and Its Reliability-Constrained Optimal Placement In Composite Power System, (Supervisor)
68. H. Shaker (2009) Transmission Line Dynamic Rating Using Fuzzy Theorem, (Supervisor)
69. A. Taghizadeh (2009) Ancillary Service Management in Reserve Requirements for Frequency Control, (Supervisor)
70. M. Parvania (2009) Risk-Based Placement of Demand Response in Composite System, (Supervisor)
71. A. Salehi (2009) Incorporating Wind Power in Generation System Expansion Planning: A reliability Point of View, (Supervisor)
72. P. Jahangiri (2009) Modeling, Assessment & Comparing Centralized and Distributed Schemes of Distribution Automation from Reliability point of view, (Supervisor)
73. H. Hajian (2009) Reliability Assessment of Automation Substation, (Supervisor)
74. A. Etemadi (2007) Transformer Multifunction Protection Reliability Assessment and Enhancement, (Supervisor)

75. M. Dadashaliha (2007) Incorporating Station Originated Outages in Composite System Reliability Evaluation, (Supervisor)
76. S. Fereidooni (2007) Impact of Tariffs on Load Management Approaches for Reducing Electricity Costs in Industrial Uses, (Supervisor)
77. H. M. Sarab (2007) Distribution System Reliability Enhancement Incorporating Electricity Storage Systems, (Supervisor)
78. E. Abbasi (2007) Reliability-Centered Maintenance Optimization of Power Distribution Systems, (Supervisor)
79. F. Aminifar (2007) Reliability-Constrained Unit Commitment and Reserve Procurement, (Supervisor)
80. S. Nourizadeh (2007) Generating Units Maintenance Scheduling in a Restructured Power Systems in the Presence of Wind Power Units, (Supervisor)
81. A. Motamedi (2007) Ancillary Service Markets Design and Simultaneous Clearing of Energy and Spinning Reserve, (Supervisor)
82. E. Faraji (2007) Reliability Evaluation of Switchgears in Communication Systems, Islamic Azad University, (Supervisor)
83. A. Alami (2007) Development of Transmission System Reliability Data Base in Iran Power Network, Islamic Azad University, (Supervisor)
84. H. Rastgoftar (2007) Strategic Assessment of Distributed Generations Technologies of Electrical Energy in Iran, (Supervisor)
85. T. Sarmasti (2007) Price Bidding of GENCOs in a Pay-As-Bid Market, (Supervisor)
86. I. Rahmati (2006) Spinning Reserve Management in Deregulated Power Systems Using Probabilistic Approaches, University of Tabriz, (Co-Supervisor)
87. A. Abiri-Jahromi (2006) A New Approach to Determine Power Systems Well-being Indices Using Fuzzy Logic, (Supervisor)
88. A. Abbarin (2006) Reliability Enhancement in Protection Systems, (Supervisor)
89. B. Kashanizadeh (2006) Congestion Management in a Deregulated System, (Co-Supervisor)
90. S. Karimi (2006) Generation System Planning Incorporating Wind Power from A Reliability View Point, (Co-Supervisor)
91. M. Ekrami (2006) Estimation of Power Transformers Failure Rate Using Periodic Surveys Data, Islamic Azad University, (Supervisor)
92. I. Nasserri (2006) Determination of an Optimum Approach to Customer Interruption Cost Evaluation-A Practical Case Study using Fuzzy Logic Approach, (Supervisor)
93. M. Rahmani-Khah (2006) Composite Generation and Transmission System Reliability Evaluation Incorporating Station Originated Outages, (Supervisor)
94. A. Shahzadeh (2006) Maintenance Scheduling of Generating Units in Restructured Power Systems, (Supervisor)

95. A. Moradi (2006) Optimum Switch Placement in Distribution Systems Using a Reliability Cost-Worth Approach, (Supervisor)
96. A. Ahmadi-Khatir (2006) Spinning Reserve Procurement Using Customers' Desired Reliability Levels in a Deregulated Environment, (Supervisor)
97. M. Firouznia (2005) Impacts of Large Scale Electricity Storage Devices on Power Systems Reliability Criteria, (Co-Supervisor)
98. M. Molaei (2005) Reliability Assessment of Motor-Drive Systems, (Co-Supervisor)
99. D. Kaheh (2005) Reliability Evaluation of Interconnected Systems Using A Well-being Framework, (Supervisor)
100. H. Farahmand (2004) Implementation of GA & Fuzzy Sets for Allocation of TCSC to Enhance ATC Transmission Networks, University of Kerman, (Advisor)
101. A. Alsadi (2004) An Algorithm for Transmission Reliability Evaluation Incorporating Protection Systems, (Advisor)
102. M. Farajzadeh (2004) Generating System Planning Using Reliability Point of View- A Practical Case Study in Iran, (Supervisor)

## TECHNICAL PUBLICATIONS

### Book Chapters

- [1] **Mahmud Fotuhi-Firuzabad**, Mohammad Rastegar, Amir Safdarian, Farrokh Aminifar, "Probabilistic Home Load Controlling Considering Plug-in Hybrid Electric Vehicle Uncertainties", Springer, 2014. (Book chapter)
- [2] **Mahmud Fotuhi-Firuzabad**, Soroush Shafiee, Mohammad Rastegar, "Optimal In-Home Charge Scheduling of Plug-in Electric Vehicles Incorporating Customer's Payment and Inconvenience Costs", book chapter in "Plug-In Electric Vehicles in Smart Grid: Management and Control Strategies" book, Springer, 2014.
- [3] Mehdi Rahmani-Andebili, **Mahmud Fotuhi-Firuzabad**, M. Moeini-Aghaie, "Optimal Incentive Plans for Plug-in Electric Vehicles", book chapter in "Electric Distribution Network Planning", Springer, 2017.
- [4] Amir Safdarian, **Mahmud Fotuhi-Firuzabad**, Matti Lehtonen, "Demand Response from Residential Consumers: Potentials, Barriers, and Solutions ", book chapter in "Handbook of Smart Grid and Communication Systems", Springer, 2018.
- [5] Sajjad Fattahian, Mahyar Tofghi, **Mahmud Fotuhi-Firuzabad**, Fei Wang, "Peer-to-Peer Management of Energy Systems", Book Chapter in "Decentralized Frameworks for Future Power Systems", Elsevier, 2022.
- [6] Nilloofar Pourghaderi, **Mahmud Fotuhi-Firuzabad**, Moein Moeini-Aghaie, Milad Kabirifar, "Optimization Model of a VPP to Provide Energy and Reserve", Book Chapter in "Scheduling and Operation of Virtual Power Plants: Technical Challenges and Electricity Markets", Elsevier, 2022.
- [7] Mohammad Aryanfar, **Mahmud Fotuhi-Firuzabad**, Sasan Azad, Payman Dehghanian, and Saeed Paighami, "Resilience vs. reliability metrics in power systems: A conceptual overview", in Future Modern Distribution Networks Resilience: From Passive Operation to Strategic Active Paradigms (FMDNR) book, Elsevier, 2023.
- [8] M. Chegnizadeh, **M. Fotuhi-Firuzabad**, S. Fattahian-Dehkordi, "Resiliency, reliability, and security of cyber-physical power system", A book chapter in Smart Cyber-Physical Power Systems: Challenges and Solutions book\_9781394191499, Wiley, 2024.

(This list includes a total of 704 papers including 368 journal papers, 17 Discussions on journal papers, and 319 conference papers)

### Journal Publications

- [1] Amin Moghimy Fam, Amir Safdarian, **Mahmoud Fotuhi-Firuzabad**, Matti Lehtonen, Mahdi Pourakbari-Kasmaei, "Data Envelopment Analysis to Determine Reliability Targets for Power Distribution Systems", Applied Energy, 394 (2025), 126175, pp. 1-16.
- [2] M. Sadeghian-Jahromi, **M. Fotuhi-Firuzabad**, S. Fattaheian-Dehkordi, F. Wang, and Matti Lehtonen, "Simultaneous Planning of Distribution Automation and Battery Energy Storage Systems for Improving Resilience of Distribution Network", Journal of Sustainable Energy Grids and Networks (SEGN), 42, 101709, pp. 1-13, 2025.

- [3] Farshad Amani, **Mahmud Fotuhi-Firuzabad**, Moein Moeini-Aghtaie, Payman Dehghanian, “Seismic Resilience Assessment of Electric Power Distribution Networks”, IEEE Transactions on Power Delivery, vol. 40, No. 1, pp. 387-397, Feb. 2025.
- [4] A. Alavi Eshkaftaki, M. Amin Latify, **M. Fotuhi-Firuzabad**, P. Dehghanian, “A Resilience Enhancement Planning Framework Capturing Customers’ Participation in Distribution Systems”, IEEE Transactions on Smart Grid, Vol. 16, No. 2, pp. 957-972, March 2025.
- [5] Hamid Reza Massrur, **Mahmud Fotuhi-Firuzabad**, Payman Dehghanian, and Frede Blaabjerg, “Fog-Based Hierarchical Coordination of Residential Aggregators and Household Demand Response with Power Distribution Grids—Part I: Solution Design”, IEEE Transactions on Power Systems, Vol. 40, No. 1, pp. 85-98, Jan. 2025.
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