Curriculum Vitae

Morteza Rahimiyan
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Energy Systems Planning and Operation (ESPO) Lab.
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Personal Information

He was born in Shahrood, Iran in 1981.

Experiences

- Associate Professor, Faculty of Electrical Engineering, Shahrood University of Technology, Shahrood, Iran, 2011-Present.
- Visiting Researcher, Electric Energy Systems Group, University of Castilla-La Mancha, Ciudad Real, Spain, Jan.-Jul. 2010.

Professional Society Memberships

- IEEE Senior Member since 2021 (M'12-SM'21).

Education

- Ph.D., Electrical Engineering, Ferdowsi University of Mashhad, Mashhad, Iran, 2006-2011.
- M.Sc., Electrical Engineering, Ferdowsi University of Mashhad, Mashhad, Iran, 2003-2006.
- B.Sc., Electrical Engineering, Isfahan University of Technology, Isfahan, Iran, 1999-2003.

Research Interests

- Planning and operation of power and energy systems
- Energy economics and markets
- Renewable energy integration and virtual power plants
- Uncertainty modeling and forecasting
- Optimization of energy systems under uncertainty

Skills

- Development of computational tools for planning and operation of energy systems
- Development of computational tools for participating in energy markets
- Development of computational tools for forecasting in energy systems

Professional Leadership

- Executive chair of 18th International Conference on Protection and Automation in Power Systems (IPAPS2024), Shahrood University of Technology, Iran, January 2024.
- Scientific chair of 7th Iran Wind Energy Conference (IWEC2021), Shahrood University of Technology, Iran, 2021.
- Editorial board member of Renewable Energy Research and Application (RERA) journal, 2019-now.
- Vice-Dean of Faculty of Electrical Engineering, Shahrood University of Technology, Iran, 2018-2021.
- Head of Power Department at Faculty of Electrical Engineering, Shahrood University of Technology, Iran, 2017-2018.
- Director of Energy Systems Planning and Operation (ESPO) Lab., Shahrood University of Technology, Iran, 2015-now.

Honors and Awards

- Best lecturer award in electrical engineering, Shahrood University of Technology, 2018, 2020, and 2022.
- Best researcher award in industrial applications and projects, Shahrood University of Technology, 2012, 2013 and 2016.
- Best researcher award in electrical engineering, Shahrood University of Technology, 2016.
- Best Ph.D. researcher award in electrical engineering, Ferdowsi University of Mashhad, Dec. 2009 and Dec. 2010.
- Ranked 1st among students of M.Sc program, Jan. 2006.
- Awarded in 6th Ferdowsi Festival for the M.Sc. thesis as 2nd excellent engineering thesis, Dec. 2007.

Publications

Books

[1] L. Baringo, and M. Rahimiyan, "Virtual Power Plants and Electricity Markets: Decision Making Under Uncertainty", ***Springer Nature Switzerland AG*****,** 2020.

Journal Papers

[1] S. R. Ebrahimi, M. Rahimiyan, M. Assili, and Amin Hajizadeh, "Energy Management of Net-Zero Energy Buildings: A Two-Layer Hierarchical Approach", ***Energy and Buildings***, Volume 336, 115592, June 2025.

[2] S. Ghamarypour, and M. Rahimiyan, "Energy Resources Investment for Industrial Virtual Power Plants under Techno-Economic Uncertainties", ***International Journal of Electrical Power & Energy Systems***, Volume 164, 110409, March 2025.

[3] M. Azarnia, M. Rahimiyan, and P. Siano, "Offering of Active Distribution Network in Real-Time Energy Market by Integrated Energy Management System and Volt-Var Optimization", ***Applied Energy***, Volume 358, 122635, March 2024.

[4] S. Dirin, M. Rahimiyan, and L. Baringo, “Optimal Offering Strategy for Wind-Storage Systems under Correlated Wind Production”, ***Applied Energy***, Volume 333, 120552, March 2023.

[5] M. H. Araghian, M. Rahimiyan, and M. Zamen, “Robust Integrated Energy Management of a Smart Home Considering Discomfort Degree-Day”, ***IEEE Transactions on Industrial Informatics***, Volume 19, pp. 10133 -10144, October 2023.

[6] M. Rezaie-Estabragh, A. Dastfan, and M. Rahimiyan, “Grid-Tied Hybrid AC-DC Microgrid: Finding Optimal Number of Parallel-Connected AC-DC Bidirectional Interfacing Converters”, ***International Transactions on Electrical Energy Systems***, Volume 2022, 1932818, June 2022.

[7] S. R. Ebrahimi, M. Rahimiyan, M. Assili, and A. Hajizadeh, “Home Energy Management under Correlated Uncertainties: A Statistical Analysis through Copula”, ***Applied Energy***, Volume 305, 117753, January 2022.

[8] M. Azarnia, and M. Rahimiyan, “Robust Volt-Var Control of a Smart Distribution System under Uncertain Voltage-Dependent Load and Renewable Production”, ***International Journal of Electrical Power & Energy Systems***, Volume 134, 107383, January 2022.

[9] M. Rezaie-Estabragh, A. Dastfan, and M. Rahimiyan, “Parallel AC-DC Interlinking Converters in the Proposed Grid-Connected Hybrid AC-DC Microgrid; Planning”, ***Electric Power Systems Research***, Volume 200, 107476, November 2021.

[10] L Baringo, M Freire, R García-Bertrand, M Rahimiyan, “Offering Strategy of a Price-Maker Virtual Power Plant in Energy and Reserve Markets”, ***Sustainable Energy, Grids and Networks***, Volume 28, 100558, December 2021.

[11] M. Jalaeian-F., M. M. Fateh and M. Rahimiyan, "Bi-Level Adaptive Computed-Current Impedance Controller for Electrically Driven Robots, " ***Robatica***, Volume 39, Issue 2, pp. 200-216, February 2020.

[12] A. Abedi, and M. Rahimiyan, “Day-Ahead Energy and Reserve Scheduling under Correlated Wind Power Production”, ***International Journal of Electrical Power & Energy Systems***, Volume 120, 105931, September 2020.

[13] I. Amirjani Marvi, M. Rahimiyan, and R. Arjmand, “Real-Time Market Operation under Single-and Dual-Price Settlement Mechanisms in Presence of Correlated Wind Power Production,” ***Tabriz Journal of Electrical Engineering***, Volume 49, No 4, pp. 1469-1481, 2020.

[14] M. Jalaeian-F., M. M. Fateh and M. Rahimiyan, "Optimal Predictive Impedance Control in the Presence of Uncertainty for a Lower Limb Rehabilitation Robot," ***Journal of Systems Science and Complexity***, Volume 33, pp. 1310-1329, May 2020.

[15] M. Rahimiyan, and L. Baringo, "Real-Time Energy Management of a Smart Virtual Power Plant", ***IET Generation, Transmission & Distribution***, Volume 13, Issue 11, pp. 2015-2023, June 2019.

[16] S. Kaabe Pahne Kolaei, and M. Rahimiyan, "Energy Management of Virtual Power Plant Using Stochastic Programming Approach", ***Tabriz Journal of Electrical Engineering***, Volume 48, Issue 2, pp. 907-918, 2018.

[17]B. Sirjani, and M. Rahimiyan, "Wind Power and Market Power in Short-Term Electricity Markets", ***International Transactions on Electrical Energy Systems***, Volume 28, Issue 8, August 2018.

[18]A. Ghasemi, M. Banejad, and M. Rahimiyan, "Integrated Energy Scheduling under Uncertainty in a Micro Energy Grid", ***IET Generation, Transmission & Distribution***, Volume 12, Issue 12, pp. 2887-2896, July 2018.

[19]A. Ghasemi, M. Banejad, and M. Rahimiyan, "Stochastic Energy Scheduling in a Microgrid with Renewables and Electric Vehicles", ***Iranian Electric Industry Journal of Quality and Productivity***, Volume 6, Issue 2, pp. 46-55, July 2018.

[20]A. R. Vahabi, M. A. Latify, M. Rahimiyan, and G. R. Yousefi, "An Equitable and Efficient Energy Management Approach for a Cluster of Price-Responsive Demands", ***Applied Energy***, Volume 219, pp. 276-279, June 2018.

[21]P. Akbarzadeh, S. Z. Mikaeeli, M. Rahimiyan, "Multiobjective Optimization of Thermohydrodynamic Journal Bearing using MOPSO Algorithm", ***Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology***, Volume 232, Issue 6, pp. 657-671, June 2018.

[22]M. Ameri, M. Rahimiyan, and M. A. Latify, "Capacity Withholding Constrained by Operational Limits of Generation under Financial Virtual Divestiture in a Day-Ahead Market", ***IEEE Transactions on Power Systems***, Volume 33, Issue 1, pp. 771-780, January 2018.

[23]S. Kaabe PahneKolaei, and M. Rahimiyan, "Robust Optimization-based Energy Management of Virtual Power Plant by Monitoring Microgrid Contingencies: Single-Line Outage Case Study", ***Tabriz Journal of Electrical Engineering***, Volume 47, No 1, pp. 249-261, 2017.

[24]M. Rahimiyan, and L. Baringo, "Strategic Bidding for a Virtual Power Plant in the Day-Ahead and Real-Time Markets: A Price-Taker Robust Optimization Approach", ***IEEE Transactions on Power Systems***, Volume 31, pp. 2676-2687, July 2016.

[25]R. Arjmand, and M. Rahimiyan, "Statistical Analysis of a Competitive Day-Ahead Market Coupled with Correlated Wind Production and Electric Load", ***Applied Energy***, Volume 161, pp. 153-167, January 2016.

[26]R. Arjmand, and M. Rahimiyan, "Impact of Spatio-Temporal Correlation of Wind Production on Clearing Outcomes of a Competitive Pool Market", ***Renewable Energy***, Volume 86, pp. 216-227, February 2016.

[27]M. Rahimiyan, "A Statistical Cognitive Model to Assess Impact of Spatially Correlated Wind Production on Market Behaviors", ***Applied Energy***, Volume 122, Issue 1, pp. 62-72, June 2014.

[28]M. Rahimiyan, L. Baringo, and A. J. Conejo, "Energy Management of a Cluster of Interconnected Price-Responsive Demands", ***IEEE Transactions on Power Systems***, Volume 29, Issue 2, pp. 645-655, March 2014.

[29]M. Rahimiyan, J. M. Morales and A. J. Conejo, "Evaluating Alternative Offering Strategies for Wind Producers in a Pool", ***Applied Energy***, Volume 88, Issue 12, pp. 4918-4926, December 2011.

[30] H. Rajabi Mashhadi, and M. Rahimiyan, "Measurement of Power Supplier's Market Power Using a Proposed Fuzzy Estimator", ***IEEE Transactions on Power Systems***, Volume 26, Issue 4, pp. 1836-1844, November 2011.

[31] M. Rahimiyan, and H. Rajabi Mashhadi, "An Adaptive Q-Learning Algorithm Developed for Agent-Based Computational Modeling of Electricity Market", ***IEEE Transactions on Systems, Man, and Cybernetics, Part C: Applications and Reviews***, Volume 40, Issue 5, pp. 547-556, September 2010.

[32] M. Rahimiyan, and H. Rajabi Mashhadi, "Evaluating the Efficiency of Divestiture Policy in Promoting Competitiveness Using an Analytical Method and Agent-Based Computational Economics", ***Energy Policy***, Volume 38, Issue 3, pp. 1588-1595, March 2010.

[33] M. Rahimiyan, and H. Rajabi Mashhadi, "Supplier's Optimal Bidding Strategy in Electricity Pay-as-Bid Auction: Comparison of the Q-Learning and a Model-Based Approach ", ***Electric Power Systems Research***, Volume 78, Issue 1, pp. 165-175, January 2008.

[34] M. Rahimiyan, and H. Rajabi Mashhadi, "Risk Analysis of Bidding Strategies in an Electricity Pay-as-Bid Auction: A New Theorem", ***Energy Conversion and Management***, Volume 48, Issue 1, pp. 131-137, January 2007.

Selected Conference Papers

[1] E. Ghanaee, and M. Rahimiyan, "Strategic Offering of a Virtual Power Plant in Energy Markets Under Contingency Conditions: A Hybrid Stochastic Robust Optimization Approach", ***30th International Conference on Electrical Engineering (ICEE 2022)***, pp. 242-248, May 2022.

[2] A. Mokhtari, M. A. Latify, M. Rahimiyan, "Impacts of Energy Storage Systems on Market Power in a Day-Ahead Market with a Dominant Producer", ***26th Iranian Conference on Electrical Engineering (ICEE 2018)***, pp. 1337-1342, May 2018.

[3] L. Baringo, and M. Rahimiyan, "Strategic Bidding for a Virtual Power Plant: A Price-taker Robust Optimization Approach", ***INFORMS Annual Meeting***. Philadelphia, Philadelphia, 2015.

[4] B. F. Talebazloo, M. A. Latify, and M. Rahimiyan, "Ex-ante Analysis of Potential Impact of Transmission Switching on Market Power", ***23rd Iranian Conference on Electrical Engineering (ICEE 2015)***, pp. 1580-1584, May 2015.

[5] S. Kaabe, M. Rahimiyan, and M. A. Latify, "Impact of Forecast Accuracy on Energy Management of a Virtual Power Plant", ***Smart Grid Conference (SGC 2014)***, pp. 1-6, December 2014.

[6] A. J. Conejo, L. Baringo, and M. Rahimiyan, "Energy Management of Interconnected Price-Responsive Demands", ***INFORMS Annual Meeting***. Minneapolis, Minnesota (EEUU), 2013.

[7] A. Ramezanian, H. Rajabi Mashhadi and M. Rahimiyan, "Evaluation of Electricity Market Competitiveness based on Estimation of HHI Variation", ***25th International Power System Conference***, Tehran, November 2010.

[8] M. J. Poorsalimi, H. Rajabi Mashhadi and M. Rahimiyan, "Risk Analysis of Bidding strategies for Generation Companies Using Utility function based Q-Learning Algorithm", ***25th International Power System Conference***, Tehran, November 2010.

[9] M. Oloomi, M. Rajabi Mashhadi, M. Rahimiyan *et. al.*, "Design of Efficient Bidding Method for Khorasan Generating Units Based on Price Forecasting and Risk Analysis", ***24th International Power System Conference***, Tehran, November 2009.

[10] M. Rahimiyan and H. Rajabi Mashhadi, "Modeling the Supplier Agent's Risk Strategy based on Fuzzy Logic Combined with the Q-Learning Algorithm", ***IEEE International Conference on Computational Intelligence and Security***, Hong Kong, Vol. 1, pp. 159–163, November 2006.

[11] M. Rahimiyan and H. Rajabi Mashhadi, R. Masoudi, "Annual Expected Budget Estimation and Regulation of Regional Electricity Companies in the Iran's Power Market Based on the Bidding Strategy", ***21th International Power System Conference***, Tehran, November 2006.

[12] R. Ghazi and M. Rahimiyan, "Reactive Power Cost Allocation in Competitive Electricity Environment", ***21th International Power System Conference***, Tehran, November 2006.

[13] H. Rajabi Mashhadi and M. Rahimiyan, "Risk Management and Optimal Bidding in a Pay-as-Bid Auction Based Multi-area Electricity Market", ***13th Iranian Conference on Electrical Engineering***, Zanjan, May 2005.

Collaborating in Industrial Projects

- Resilient and reliable distribution system planning: a case study in Semnan province, Semnan Electric Distribution Company, 2024-2025.
- Investigation of the effect of conservation voltage reduction on Khorasan power network load, Khorasan Regional Electric Company, 2023-2025.
- Planning of power systems with high penetration of aggregators, Spain Ministry of Science and Innovation, 2021.
- Preparation of design and installation guideline of distribution networks in megacities based on requirements and features of megacities of Tehran and Mashhad, Niroo Research Institute, 2019-2020.
- Studying and analyzing the integration of renewable energy units and independent producers into Iran wholesale electricity market, Iran Grid Management Company, 2018.
- Modeling and developing algorithm for energy management system in power distribution network based on FAHAM characteristics, Iran Power Generation, Transmission & Distribution Company, 2017.
- Design and implementation of energy management system for smart power microgrid, Shahrood University of Technology, 2017.
- Evaluating structural market power in Iran electricity market, Iran Grid Management Company, 2013.
- Monitoring system design for Iran electricity market, Iran Grid Management Company, 2013.
- Transmission expansion planning in the Iran electricity market for Khorasan network, Khorasan Regional Electric Company, 2007-2008.
- Analysis of probabilistic methods in transmission expansion planning, Khorasan Regional Electric Company, 2006.
- Mid-term planning of KREC's selling electricity to the Iran electricity market: Studying the effect of KREC's bidding price on the cost of Khorasan energy consumption, Khorasan Regional Electric Company, 2005.

- Capacitor placement in Khorasan distribution & transmission network, Khorasan Regional Electric Company, 2004.

Peer Review

- Book reviewer for Elsevier
- Book reviewer for Wiley
- Reviewer for IEEE Transactions on Power Systems
- Reviewer for IEEE Transactions on Smart Grid
- Reviewer for IEEE Transactions on Sustainable Energy
- Reviewer for IET Renewable Power Generation
- Reviewer for Applied Energy
- Reviewer for International Journal of Electrical Power & Energy Systems
- Reviewer for Electric Power Systems Research
- Reviewer for Sustainable Energy, Grids and Networks