

Professor Mohammad Sherkat Masoum



Professor Mohammad Sherkat Masoum

Position Professor
Faculty Faculty of Science and Engineering
School School of Electrical Engineering and Computing
Department Department of Electrical and Computer Engineering
Campus Bentley Campus
Location 314.336
Phone 08 9266 7901
Fax 08 9266 2584
Email M.Masoum@curtin.edu.au

Brief Summary

Education:

PhD (1991; University of Colorado Boulder, USA), **MS** and **BS** (1985 and 1983; University of Colorado Denver, USA)

Citations (Google Scholar) and Publications:

- Citation: +5500, H-Index: 34, i10-index: 86
- Publications: 7 Books, 4 Edited Volume / Book Chapters, 1 Invention, 303 Articles (115 Journal and 188 Conference Papers).

Student Supervisions:

- 19 PhD students graduated (including 3 co-supervisions)
- 3 Master by Research students graduated

- 50 Master by Course & Research students graduated
- 62+ BSc Project students graduated

Recent Awards:

- The IEEE PES WA Outstanding Engineer of the Year Award 2014.
- The Engineers Australia John Madsen Medal 2014.
- The IET Science, Measurement and Technology (SMT) Premium Award 2012.

Professional Associations:

- Senior Member of IEEE (Institute of Electrical and Electronics Engineers).
- Editor: IEEE Transactions on Smart Grid, 2016-Present.
- Editor: IEEE Power Engineering Letters, 2016-Present.
- Guest Editor: IEEE Transactions on Industrial Informatics, 2017
- Editor: Australian Journal of Electrical and Electronic Engineering (AJEEE), 2012-Present.
- Editor: Australian Electrical and Electronics Engineering International Journal (EEEIJ), 2012-Present.
- Editor In Chief: American Journal of Engineering and Science (AJEAS), 2012-2014.
- General Chair: Australasian Universities Power Engineering Conference (AUPEC 2014, Perth WA).
- Chair: IEEE-PES/PEL Western Australia (WA) Section, 2013.
- Vice Chair: IEEE-PES/PEL Western Australia (WA) Section, 2011-2012.
- Vice General Chair: IEEE Innovative Smart Grid Technologies (IEEE ISGT Asia) 2011.
- Vice General Chair: Australasian Universities Power Engineering Conference (AUPEC 2007).
- Regular Reviewer for IEEE Transactions and IET Proceedings.

Employment History:

- Curtin University, Perth, Australia, Senior Lecturer/Associate Professor/Professor (2004 to date)
- University of California, Irvine, USA, Visiting Scholar (Dec. 2009 - March 2010)
- Iran University of Science & Technology, Tehran, Iran, Assistant Professor/Associate Professor (1993 - 2004)
- Isfahan University of Technology, Isfahan, Iran, Assistant Professor (1992 - 1993)
- University of Colorado at Boulder, USA, Research Associate (1991 - 1992)
- University of Colorado at Boulder, USA, Research Assistant/Teaching Assistant (1987 - 1990)
- University of Colorado at Denver, USA, Instructor (1985 - 1987)

Overview

Recent Books:

1. **M.A.S. Masoum**, E.F. Fuchs, "Power Quality in Electrical Machines and Power Systems", Elsevier, Academic Press, USA, Second Edition, 2015 (SSN: 978-0-12-800782-2).
2. E.F. Fuchs, **M.A.S. Masoum**, "Power Conversion of Renewable Energy Systems", Springer, USA, Second Edition, 2012 (ISBN: 978-1-4419-7978-0).
3. E.F. Fuchs, **M.A.S. Masoum**, "Power Conversion of Renewable Energy Systems", Springer, USA, First Edition, 2011 (ISBN: 978-1-4419-7978-0).
4. E.F. Fuchs, **M.A.S. Masoum**, "Power Quality in Electrical Machines and Power Systems", Elsevier, Academic Press, USA, First Edition, 2008 (ISBN-13: 978-0-12-369536-9).

Recent Journal Articles (2016-2017):

1. M. Moghbel, **M.A.S. Masoum**, A. Fereidouni, S. Deilami, "Optimal Sizing, Siting and Operation of Custom Power Devices with STATCOM and APLC Functions for Real-Time Reactive Power and Network Voltage Quality Control of Smart Grid", *IEEE Transactions on Smart Grid*, In Press, 2017.
2. A. Ashrafiyan, M. Mirsalim, **M.A.S. Masoum**, "Application of a Recursive Phasor Estimation Method for Adaptive Fault Component Based Differential Protection of Power Transformers", *IEEE Transactions on Industrial Informatics*, In Press, 2017.
3. S.D. Kermany, M. Joorabian, S. Deilami, **M.A.S. Masoum**, "Hybrid Islanding Detection in Microgrid with Multiple Connection Points to Smart Grids using Fuzzy-Neural Network", *IEEE Transactions on Power Systems*, In Press, 2017.
4. A.S. Masoum, N. Hashemnia, A. Abu-siada, **M.A.S. Masoum**, S. Islam, "Online Transformer Internal Fault Detection Based on Instantaneous Voltage and Current Measurements Considering Impact of Harmonics", *IEEE Transactions on Power Delivery*, Vol.32, No.2, pp.587-598, 2017.
5. X. Su, **M.A.S. Masoum**, P. Wolfs, "Multi-Objective Hierarchical Control of Unbalanced Distribution Networks to Accommodate More Renewable Connections in the Smart Grid Era", *IEEE Transactions on Power Systems*, Vol.31, No.5, pp.3924-3936, 2016.
6. N. Jayasekar, **M.A.S. Masoum**, P. Wolfs, "Optimal Operation of Distributed Energy Storage Systems to Improve Distribution Network Load and Generation Hosting Capability," *IEEE Transactions on Sustainable Energy*, Vol.7, No.1, pp.250-261, 2016.
7. X. Su, **M.A.S. Masoum**, P. Wolfs, "PSO and Improved BSFS Based Sequential Comprehensive Placement and Real-time Multi-objective Control of Delta-connected Switched Capacitors in Unbalanced Radial MV Distribution Networks", *IEEE Transactions on Power Systems*, Vol.31, No.1, pp.612-622, 2016.
8. A. Fereidouni, **M.A.S. Masoum**, K.M. Smedley "Supervisory Nearly Constant Frequency Hysteresis Current Control for Active Power Filter Applications in Stationary Reference Frame", *IEEE Power and Energy Technology Systems Journal*, Vol.3, No.1, pp.1-12, 2016.
9. **M.A.S. Masoum**, S.M.H. Nabavi, "Hybrid Optimal Online-Overnight Charging Coordination of Plug-in Electric Vehicles in Smart Grid", *Journal of Power Sources* (Elsevier), Vol.330, pp.7-17, 2016.

10. S. Hajfroosh, **M.A.S. Masoum**, S. Islam “*Online Optimal Variable Charge-Rate Coordination of Plug-In Electric Vehicles to Maximize Customer Satisfaction and Improve Grid Performance*,” *Electrical Power System Research* (Elsevier), Vol.141, pp.407-420, 2016, 2016.
11. A. Fereidouni, **M.A.S. Masoum**, “*Shunt Active Power Filter with Enhanced Dynamic Performance By means of Frequency-Locking Complex Adaptive Linear Combiner*”, *Electric Power Components & Systems Journal*, Vol.44, No.20, pp.2256-2270, 2016.
12. A. Fereidouni, **M.A.S. Masoum**, M. Moghbel, “*Performance of LR-Type Solid-State Fault Current Limiter in Improving Power Quality and Transient Stability of Power Network with Wind Turbine Generators*”, *International Journal of Electrical Power & Energy Systems* (Elsevier), Vol.74, pp.172-186, Jan. 2016.

Recent Conference Papers (2016-2017):

1. N. Jabalameli, **M.A.S. Masoum**, S. Deilami, “*Optimal Online Charging of Plug in Electrical Vehicles Considering Voltage Unbalance Factor*”, *IEEE PES General Meeting*, Chicago, IL, USA, pp. 1-5, July 16-20, 2017.
2. M. Moghbel, **M.A.S. Masoum**, S. Deilami, “*Optimal Placement and Sizing of Multiple StatCom in Distribution System to Improve Voltage Profile*”, *Australasian Universities Power Engineering Conference (AUPEC 2016)*, Brisbane, Australia, pp. 1-6, Sep. 25-28, 2016.
3. M. Moghbel, **M.A.S. Masoum**, “*D-STATCOM Based on Hysteresis Current Control to Improve Voltage Profile of Distribution Systems with PV Solar Power*”, *Australasian Universities Power Engineering Conference (AUPEC 2016)*, Brisbane, Australia, pp. 1-6, Sep. 25-28, 2016.
4. M. Saleh, **M.A.S. Masoum**, L. Meek, M. Abshar, “*Control Algorithm for Bidirectional Fly-back Active Cell Balancer with Interleaved Transformer Connections*”, *IEEE PES General Meeting*, Boston, USA, pp. 1-5, July 17-21, 2016.
5. S. Deilami, **M.A.S. Masoum**, M. Moghbel, “*Derating Active Power Filters Considering Network and Bus Voltage Total Harmonic Distortions*”, *16th IEEE International Conference on Environment and Electrical Engineering (IEEE-EEEIC2016)*, pp.1-5, Florence, Italy, 7-10 June, 2016.

Ten Career-Best Publications:

[1]. **M.A.S. Masoum**, H. Dehbonei, E.F. Fuchs, “*Theoretical and Experimental Analysis of Photovoltaic Systems with Voltage and Current-Based Maximum Point Tracking*”, *IEEE Transactions on Energy Conversion*, Vol.17, No.4, pp.514-522, Dec. 2002, Cited: Over **733** times.

[2] S. Deilami, A.S. Masoum, P.S. Moses, **M.A.S. Masoum**, “*Real-Time Coordination of Plug-In Electric Vehicle Charging in Smart Grids to Minimize Power Losses and Improve Voltage Profile*”, *IEEE Transactions on Smart Grid*, Vol.2, No.3, pp.456-467, 2011, Cited: Over **530** times.

[3]. **M.A.S. Masoum**, E.F. Fuchs, “Power Quality in Electrical Machines and Power Systems”, Elsevier, Academic Press, USA, Feb. 2008 (First Edition), 2015 (Second Edition), Cited: Over **388** times.

[4]. A.S. Masoum, S. Deilami, P.S. Moses, **M.A.S. Masoum**, A. Abu-Siada, “Smart Load Management of Plug-In Electric Vehicles in Distribution and Residential Networks with Charging Stations for Peak Shaving and Loss Minimization Considering Voltage Regulation”, IET Proceedings on Generation, Transmission and Distribution, Vol.5, No.8, pp.877-888, 2011, Cited: Over **221** times.

[5]. **M.A.S. Masoum**, M. Ladjevardi, A. Jafarian, E.F. Fuchs, “Optimal Placement, Replacement and Sizing of Capacitor Banks in Distorted Distribution Networks by Genetic Algorithms”, IEEE Transactions on Power Delivery, Vol.19, No.4, pp.1794-1801, Oct 2004, Cited: Over **203** times.

[6]. **M.A.S. Masoum**, A. Jafarian, M. Ladjevardi, E.F. Fuchs, W.M. Grady, “Fuzzy Approach for Optimal Placement and Sizing of Capacitor Banks in the Presence of Harmonics”, IEEE Transactions on Power Delivery, Vol.19, No.2, pp.822-829, April 2004, Cited: Over **126** times.

[7]. **M.A.S. Masoum**, S.M. Mosavi, E.F. Fuchs, “Microprocessor-Controlled New Class of Optimal Battery Chargers for Photovoltaic Applications”, IEEE Transactions on Energy Conversion, Vol.19, No.3, pp.599-606, Sep 2004, Cited: Over **107** times.

[8]. M. Mohseni, S. Islam, **M.A.S. Masoum**, “*Impacts of Symmetrical and Asymmetrical Voltage Sags on DFIG-based Wind Turbines Considering Phase-Angle Jump, Voltage Recovery and Sag Parameters*,” IEEE Transactions on Power Electronics, Vol.26, No.5, pp.1587-1598, 2011, Cited: Over **133** times.

[9]. M. Mohseni, S. Islam, **M.A.S. Masoum**, “Enhanced Hysteresis-Based Current Regulators in Vector Control of DFIG Wind Turbines,” IEEE Transactions on Power Electronics, Vol.26, No.1, pp.223-234, 2011, Cited: Over **114** times.

[10]. **M.A.S. Masoum**, S. Jamali, N. Ghaffarzadeh, “Detection and Classification of Power Quality Disturbances using Discrete Wavelet Transform and Wavelet Networks”, IET Proceedings on Science, Measurement & Technology, Vol. 4, No.47, pp: 193-205, 2010, Cited: Over **109** times.

[Back to top](#)

Publications

2016

Journal Articles (Research)

- Safitri, N., F. Shahnian, and M. A. Masoum. 2016. “[Coordination of single-phase rooftop PVs in unbalanced three-phase residential feeders for voltage profiles](#)”

[improvement](#).”*Australian Journal of Electrical & Electronics Engineering* - (99). In press.

- Fereidouni, A., and M. Masoum. 2016.“[Shunt Active Power Filter Enhancement by Means of Frequency-locking Complex Adaptive Linear Combiner](#).”*Electric Power Components and Systems* 44 (20): 2256-2270.
- Hajforoosh, S., M. Masoum, and S. M. Islam. 2016.“[Online optimal variable charge-rate coordination of plug-in electric vehicles to maximize customer satisfaction and improve grid performance](#).”*Electric Power Systems Research* 141: 407-420.
- Fereidouni, A., M. Masoum, and K. Smedley. 2016.“[Supervisory nearly constant frequency hysteresis current control for active power filter applications in stationary reference frame](#).”*IEEE Power and Energy Technology Systems Journal* 3 (1): 1-12.
- Su, X., M. Masoum, and P. Wolfs. 2016.“[Multi-Objective Hierarchical Control of Unbalanced Distribution Networks to Accommodate More Renewable Connections in the Smart Grid Era](#).”*IEEE Transactions on Power Systems* -. In press.
- Su, X., M. Masoum, and P. Wolfs. 2016.“[PSO and Improved BSFS Based Sequential Comprehensive Placement and Real-Time Multi-Objective Control of Delta-Connected Switched Capacitors in Unbalanced Radial MV Distribution Networks](#).”*IEEE Transactions on Power Systems* 31: 612-622.
- Jayasekara, N., M. Masoum, and P. Wolfs. 2016.“[Optimal Operation of Distributed Energy Storage Systems to Improve Distribution Network Load and Generation Hosting Capability](#).”*IEEE Transactions on Sustainable Energy* 7.
- Fereidouni, A., M. Masoum, T. Hosseinimehr, and M. Moghbel. 2016.“[Performance of LR-type solid-state fault current limiter in improving power quality and transient stability of power network with wind turbine generators](#).”*International Journal of Electrical Power and Energy Systems* 74: 172-186.
- Fereidouni, A., and M. Masoum. 2016.“[Space-vector hysteresis modulation for neutral-diode-clamped inverter in active power filter applications](#).”*Journal of Electrical Engineering* 16 (2): 89-93.
- Masoum, M., and S. Nabavi. 2016.“[Hybrid optimal online-overnight charging coordination of plug-in electric vehicles in smart grid](#).”*Journal of Power Sources* 330: 7-17.

2015

Books (Research)

- Masoum, M., and E. Fuchs. 2015. [Power Quality in Power Systems and Electrical Machines: Second Edition](#). : .

Book Chapters (Research)

- Deilami, S., A. S. Masoum, M. A. Masoum, A. Abu Siada, and S. M. Islam. 2015. “[Optimal scheduling of LTC and switched shunt capacitors in smart grid concerning overnight charging of Plug-in Electric Vehicles](#).” In *Applied Engineering Sciences*, 71-76. London UK, CRC Press is part of The Taylor & Francis Group: CRC Press.

- Masoum, A. S., S. Deilami, M. A. Masoum, A. Abu Siada, and S. M. Islam. 2015. "[Overnight coordinated charging of plug-in electric vehicles based on maximum sensitivities selections](#)." In *Applied Engineering Sciences*, 65-70. London UK, CRC Press is part of The Taylor & Francis Group: CRC Press.

Journal Articles (Research)

- Hajforoosh, S., M. Masoum, and S. M. Islam. 2015. "[Real-time charging coordination of plug-in electric vehicles based on hybrid fuzzy discrete particle swarm optimization](#)." *Electric Power Systems Research* 128: 19-29.
- Derakhshandeh, S., M. Masoum, and M. Hamedani Golshan. 2015. "Unit commitment in industrial microgrids with plug-in electric vehicles and photovoltaic generation." *INTERNATIONAL TRANSACTIONS ON ELECTRICAL ENERGY SYSTEMS* 25 (7): 1349-1356.
- Fereidouni, A., M. Masoum, and M. Moghbel. 2015. "[A new adaptive configuration of PID type fuzzy logic controller](#)." *ISA Transactions* 56: 222-240.
- Fereidouni, A., M. Masoum, and M. Moghbel. 2015. "[Power Quality Improvement Using an Enhanced Network-Side-Shunt-Connected Dynamic Voltage Restorer](#)." *International Journal of Emerging Electric Power Systems* 16 (5): 451-472.

Conference Articles (Research)

- Fereidouni, A., and M. Masoum. 2015. "[A new space-vector Hysteresis current-control modulation for active power filter applications](#)."

2014

Journal Articles (Research)

- Khamaira, M. Y., A. Abu Siada, S. M. Islam, and M. A. Masoum. 2014. "Improved Topology of Doubly Fed Induction Generator based Wind Energy Conversion System." *Australian Journal of Electrical & Electronics Engineering* #. In press.
- Fereidouni, A., M. A. Masoum, T. Mehr, and M. Moghbel. 2014. "[Improving performance of shunt active power filter with hysteresis-based direct current control using particle swarm optimisation](#)." *Australian Journal of Electrical & Electronics Engineering* 11 (4): 357-365.
- Rossi, R., and M. A. Masoum. 2014. "[The effect of wind generation on an islanded network based on rotor angle dynamic evaluation](#)." *Australian Journal of Electrical & Electronics Engineering* 11 (1): 119-126.
- Masoum, A. S., N. Hashemnia, A. Abu Siada, M. Masoum, and S. M. Islam. 2014. "[Finite-Element Performance Evaluation of On-Line Transformer Internal Fault Detection Based on Instantaneous Voltage and Current Measurements](#)." *Australian Journal of Electrical and Electronics Engineering* 11 (4): 391-399.
- Jayasekara, N., P. Wolfs, and M. A. Masoum. 2014. "[An optimal management strategy for distributed storages in distribution networks with high penetrations of PV](#)." *Electric Power Systems Research* 116: 147-157.

- Khamaira, M. Y., A. Abu Siada, S. M. Islam, and M. Masoum. 2014. "[A new topology for doubly fed induction generator to improve the overall performance of wind energy conversion system.](#)" *Elixir International Journal* 73: 26432-26435.
- Fereidouni, A., and M. A. Masoum. 2014. "[Study on Adaptive Harmonic Extraction Approaches in Active Power Filter Applications.](#)" *Engineering Letters* 22 (4): 209-214.
- Mesbah, M., P. S. Moses, S. M. Islam, and M. A. Masoum. 2014. "[Digital Implementation of a Fault Emulator for Transient Study of Power Transformers Used in Grid Connection of Wind Farms.](#)" *IEEE Transactions on Sustainable Energy* 5 (2): 646-654.
- Su, X., M. A. Masoum, and P. J. Wolfs. 2014. "[Comprehensive optimal photovoltaic inverter control strategy in unbalanced three-phase four-wire low voltage distribution networks.](#)" *IET Generation Transmission and Distribution* 8 (11): 1848-1859