Biography

Dr. Hong was born in 1972. He received the B.S.E.E. degree from the Kaohsiung Polytechnic Institute, Kaohsiung, Taiwan, in 1997, the M.S.E.E. degree from the Chung Yuan Christian University, Chung Li, Taiwan, in 1999, and the Ph.D.E.E. degree at National Sun Yat-Sen University, Kaohsiung, Taiwan, in 2011. He joined China Steel Corporation Group, Kaohsiung, Taiwan, in 2000. His major areas of interests include Aluminum process control, Distributed control system, Programming logic control, and Energy save technology. He was a Lecturer at the Department of Electronic Communication Engineering, National Kaohsiung Marine University from 2010 to 2012. He was an Associate Professor at the Department of Electronic Communication Engineering, National Kaohsiung Marine University from 2012 to 2018. Since 2018, he has been an Associate Professor at the Department of Electronic Communication Engineering, National Kaohsiung University of Science and Technology, Nanzih Campus, Kaohsiung, Taiwan. He is an active reviewer for numerous high quality journals, which include publishers from IEEE, IET and Elsevier. Dr. Hong's research interests include motor drive systems, DSP, power electronics, control theory applications, and renewable energy systems.

PUBLICATIONS

A. Journal Papers

[1] W. M. Lin, **C. M. Hong**, and F. S. Cheng, "Fuzzy Neural Network Output Maximization Control for Sensorless Wind Energy Conversion System," *Energy*, Vol. 35, No. 2, pp.592-601, 2010.
[2] W. M. Lin, and **C. M. Hong**, "Intelligent Approach to Maximum Power Point Tracking Control Strategy for Variable-Speed Wind Turbine Generation System," *Energy*, Vol. 35, No. 6, pp. 2440-2447, 2010.
[3] W. M. Lin, **C. M. Hong**, and F. S. Cheng, "On-Line Designed Hybrid Controller with Adaptive Observer for Variable-Speed Wind Generation System," *Energy*, Vol. 35, No. 7, pp. 3022-3030, 2010.
[4] W. M. Lin, **C. M. Hong**, and F. S. Cheng, "Design of Intelligent Controllers for Wind Generation System with Sensorless Maximum Wind Energy Control,"

Energy Conversion and Management, Vol. 52, No. 2, pp. 1086-1096, 2011.

[5] W. M. Lin, **C. M. Hong**, T. C. Ou, and T. M. Chiu, "Hybrid Intelligent Control of PMSG Wind Generation System Using Pitch Angle Control with RBFN," *Energy Conversion and Management*, Vol. 52, No. 2, pp. 1244-1251, 2011.

[6] W. M. Lin, **C. M. Hong**, "A New Elman Neural Network-Based Control Algorithm for Adjustable-Pitch Variable Speed Wind Energy Conversion Systems," *IEEE Trans. Power Electronics*, Vol. 26, No. 2, pp. 473-481, 2011.

[7] **C. M. Hong**, W. M. Lin, C. H. Chen, T. C. Ou, "MPPT Control of Wind Generation Systems Based on FNN with PSO Algorithm," *International Journal of Energy & Environment*, Vol. 2, Issue 5, pp.877-886, 2011.

[8] W. M. Lin, **C. M. Hong**, and C. H. Chen, "Neural-Network-Based MPPT Control of a Stand-Alone Hybrid Power Generation System," *IEEE Trans. Power Electronics*, Vol. 26, No. 12, pp. 3571-3581, 2011.

[9] C. H. Chen, **C. M. Hong**, and T. C. Ou, "Hybrid Fuzzy Control of Wind Turbine Generator by Pitch Control Using RNN," *International Journal of Ambient Energy*, Vol. 33, No. 2, pp. 56-64, 2012.

[10] C. H. Chen , **C. M. Hong**, and F. S. Cheng, "Intelligent Speed Sensorless Maximum Power Point Tracking Control for Wind Generation System," *International Journal of Electrical Power and Energy Systems*, Vol. 42, No. 2, pp. 399-407, 2012.

[11] W. M. Lin, **C. M. Hong**, C. H. Huang, and T. C. Ou, "Hybrid Control of a Wind Induction Generator Based on Grey-Elman Neural Network," *IEEE Trans. Control Systems Technology*, Vol. 21, No. 6, pp. 2367-2373, 2013.

[12] **C. M. Hong**, T. C. Ou, and K. H. Lu, "Development of Intelligent MPPT Control for a Grid-Connected Hybrid Power Generation System," *Energy*, Vol. 50, pp. 270-279, 2013.

[13] **C. M. Hong**, C. H. Chen, and C. S. Tu, "Maximum Power Point Tracking-Based Control Algorithm for PMSG Wind Generation System without Mechanical Sensors," *Energy Conversion and Management*, Vol. 69, pp. 58-67, 2013.

[14] C. H. Huang, **C. M. Hong**, Y. F. Su, and S. M. Lee et al., "Elman Neural Network for Dynamic Control of Wind Power Systems," *Applied Mechanics and Materials*, Vols. 479-480, pp. 570-574, 2014.

[15] **C. M. Hong**, and C. H. Chen, "Intelligent Control of a Grid-Connected Wind-Photovoltaic Hybrid Power Systems," *International Journal of Electrical Power and Energy Systems*, Vol. 55, pp. 554-561, 2014.

[16] T. C. Ou, and **C. M. Hong**, "Dynamic Operation and Control of Mircrogrid Hybrid Power Systems," *Energy*, Vol. 66, pp. 314-323, 2014.

[17] S. J. Chuang, C. H. Chen, **C. M. Hong**, and G. Y. Chen, "Intelligent Control for USV Based on Improved Elman Neural Network with TSK Fuzzy", Advances in Artificial Intelligence, Vol. 2014, Article ID 739517, 9 pages, 2014.

[18] **C. M. Hong**, F. S. Cheng, and C. H. Chen, "Optimal Control for Variable-Speed Wind Generation Systems using General Regression Neural Network," *International Journal of Electrical Power and Energy Systems*, Vol. 60, pp. 14-23, 2014.

[19] **C. M. Hong**, C. H. Huang, and F. S. Cheng, "Sliding Mode Control for Variable-Speed Wind Turbine Generation Systems using Artificial Neural Network," *Energy Procedia*, Vol. 61, pp. 1626-1629, Dec. 2014.

[20] T. C. Ou, S. J. Chuang, **C. M. Hong**, R. C. Wu, and T. P. Taso, "Self-Regulation ground faults model for Microgrid Distribution," *An International Journal of Research and Surveys*, Vol. 6, Issue 12, pp. 3225-3230, 2015.

[21] **C. M. Hong**, T. C. Ou, Y. H. Li, R. C. Wu, and Y. T. Lin, "Hybrid ACO-MPSO algorithm for Unit Commitment problems with power flow and environmental," *An International Journal of Research and Surveys*, Vol. 7, Issue 1, pp. 17-22, 2016.

[22] S. J. Chuang, **C. M. Hong**, and C. H. Chen, "Improvement of Integrated Transmission Line Transfer Index for Power System Voltage Stability," *International Journal of Electrical Power and Energy Systems*, Vol. 78, pp. 830-836, 2016.

[23] S. J. Chuang, **C. M. Hong**, and C. H. Chen, "Design of intelligent control for stabilization of microgrid system," *International Journal of Electrical Power and Energy Systems*, Vol. 82, pp. 569-578, 2016.

[24] **C. M. Hong**, C. H. Huang, and F. S. Cheng, "Design of an Adaptive Intelligent Control Scheme for Switched Reluctance Wind Generator," *Engineering Computations*, Vol. 34, Issue 1, pp. 105-122, 2017.

[25] **C. M. Hong**, and C. H. Chen, "Enhanced Radial Fuzzy Wavelet Neural Network with Sliding Mode Control for a Switched Reluctance Wind Turbine Distributed Generation," *Engineering Optimization*, Vol. 51, Issue 7, pp. 1133-1151, 2019.

[26] K. H. Lu, **C. M. Hong**, and Q. Q. Xu, "Recurrent Wavelet-based Elman Neural Network Control for Integrated Offshore Wind and Wave Power Generation Systems," *Energy*, Vol. 170, pp. 40-52, 2019.

[27] K. H. Lu, **C. M. Hong**, Z. Han, and L. Yu, "New Intelligent Control Strategy Hybrid Grey-RCMAC Algorithm for Ocean Wave Power Generation Systems," *Energies*, Vol. 13, Issue 1, pp. 241, Jan. 2020.

[28] C. S. Tu, **C. M. Hong**, and K. H. Lu, "Design of Novel Intelligent Controller for Doubly-Fed Induction Generator Driven Wind Turbine," *Electric Power Components and Systems*, Vol. 48, Issue 1-2, pp. 174-185, May 2020.

[29] C. S. Tu, **C. M. Hong**, H. S. Huang, and C. H. Chen, "Short Term Wind Power Prediction Based on Data Regression and Enhanced Support Vector Machine," Vol. 13, Issue 23, pp. 6319, *Energies*, Nov. 2020.

[30] K. H. Lu, **C. M. Hong**, X. Tan, and F. S. Cheng, "Novel Intelligent Control Technology for Enhanced Stability Performance of Ocean Wave Energy Conversion System," Energies, Vol. 14, Issue 7, pp. 2027, April 2021.

[31] C. H. Chen, **C. M. Hong**, W. M. Lin, and Y. C. Wu, "Implementation of an Environmental Monitoring System Based on IoTs," Electronics, Vol. 11, Issue 10, pp. 1596, May 2022.

B. Conference Papers:

[1] F. J. Lin, R. F. Fung, H. H. Lin, and **C. M. Hong**, "A supervisory fuzzy neural network controller for slider-crank mechanism," 1999 IEEE International Conference on Control Applications, Vol. 2, Aug. 1999.

[2] **C. M. Hong**, W. M. Lin, and F. S. Cheng, "Application of Fuzzy Neural Network Sliding Mode Controller for Wind Driven Induction Generator System," 2007 International Conference on Intelligent Systems Applications to Power Systems, pp. 1-6, 2007.

[3] W. M. Lin, **C. M. Hong**, F. S. Cheng, C. C. Chien, and Y. H. Li , "Development of Multiplier Power Factor Correction Control for Switched Reluctance Motor Drive," 30th R.O.C. Symp. on Electrical Power Eng., D031, Nov. 2009.

[4] W. M. Lin, **C. M. Hong**, T. C. Ou, K. H. Lu, and C. H. Huang, "An Intelligent Maximum Power Tracking Control Strategy for Wind-Driven IG System using MPSO Algorithm," *2009 IEEE/ASME Int. Conf. on Advanced Intelligent Mechatronics,* pp. 1659-1664, Singapore, July 2009.

[5] K. H. Lu, W. M. Lin, C. H. Huang, **C. M. Hong**, W. C. Hung, and Yuan-Hui Li, "Real power control design for SSSC via Fuzzy Neural Network based on Genetic Algorithms," 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, pp. 1769-1774, 2009.

[6] C. H. Huang, C. C. Huang, T. C. Ou, K. H. Lu, and **C. M. Hong**, "Intelligent fuzzy logic controller for a solar charging system," 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, 2009, pp. 1412-1417.

[7] T. C. Ou, C. H. Huang, C. H. Chen, **C. M. Hong**, and K. H. Lu, "Probabilistic neural network and Polynomial Fitting Approach used to determine radio field strength under power lines in radial network," 2009 IEEE/ASME Int. Conf. on Advanced Intelligent Mechatronics, pp. 1653-1658, Singapore, July 2009.

[8] W. M. Lin, **C. M. Hong**, T. C. Ou, and F. S. Cheng, "MRAS-Based Sensorless Wind Energy Control for Wind Generation System using RFNN," *The 5th IEEE Conf. on Industrial Electriconics and Applications (ICIEA 2010)*, pp. 2270-2275, Taichung, Taiwan, June 2010.

[9] T. C. Ou, K. H. Lu, W. M. Lin, and **C. M. Hong**, "A study for price-based unit commitment with carbon trading by DI&C simulation," 2010 8th IEEE International Conference on Industrial Informatics, pp. 73-78, 2010.

[10] W. M. Lin, **C. M. Hong**, M. R. Lee, and C. H. Huang, "Fuzzy Sliding Mode-Based Control for PMSG Maximum Energy Capture with Compensated Pitch Angle," *IEEE International Symposium on Computerm, Computer, Control and Automation (3CA 2010)*, pp. 397-400, Taiwan, May 2010.

[11] **C. M. Hong**, T. C. Ou, C. H. Chen, and W. M. Lin, "On-Line Tuning Variable Structure Adaptive Control for Wind Induction Generator System," *The 9th International Power and Energy Conference (IPEC2010)*, pp. 1044-1049, Singapore, Oct. 2010.

[12] W. M. Lin, **C. M. Hong**, K. H. Lu, C. H. Chen, and N. Y. Chang-Chien, "Implementation of A Grid-Connected Solar and Wind-Diesel Power Hybrid Generating system," *The 9th Taiwan Power Electronics Conference & Exhibition*, pp.1212-1217, Sept. 2010.

[13] W. M. Lin, **C. M. Hong**, C. H. Chen and T. C. Ou, "Development of Solar MPPT Control Strategy for Stand-alone Hybrid Power Generation system," *The 9th Taiwan Power Electronics Conference & Exhibition*, pp.1218-1223, Sept. 2010.

[14] W. M. Lin, **C. M. Hong**, F. S. Cheng, and N. Y. Chang-Chien, "Implementation

of STATCOM for Grid-Connected Hybrid Power Generation System," *31th R.O.C. Symp. on Electrical Power Eng.*, pp.27-31, Dec. 2010.

[15] C. H. Chen , **C. M. Hong**, T. C. Ou, and K. H. Lu, "Adaptive Control Based On Neural Network of Induction Generator for Wind Energy Systems," *3rd IEEE International Conference on Power Electronics and Intelligent Transportation System (PEITS 2010)*, pp. 30-33, Shenzhen, China, Nov. 2010.

[16] W. M. Lin, **C. M. Hong**, F. S. Cheng, and K. H. Lu, "MPPT Control Strategy for Wind Energy Conversion System Based on RBF Network," *IEEE Energy Tech2011*, No.83, Cleveland, OH, USA, May 2011.

[17] C. H. Chen, **C. M. Hong**, and T. C. Ou, "WRBF Network Based Control Strategy for PMSG on Smart Grid," *16th IEEE Int. Conf. on Intelligent System Appl. to Power Systems (ISAP2011)*, No.5, Hersonissos, Crete, Greece, Sept. 2011.

[18] W. M. Lin, **C. M. Hong**, C. S. Tu, K. H. Lu, and C. K. Chang, "Intelligent MPPT Control for Wind Energy Conversion System using Neural Network with Grey System Modeling Approach," *2011 IEEE/SICE International Symposium on System Integration (SII2011)*, F7-5, Yoshida Campus, Kyoto, Japan, Dec. 2011.

[19] T. C. Ou, T. H. Lin, **C. M. Hong**, and T. P. Tsao, "Microgrid Distribution Power Flow with Evolutionary Programming," *33th R.O.C. Symp. on Electrical Power Eng.*, pp. 277-281, Dec. 2012.

[20] C. H. Chen, K. H. Lu, **C. M. Hong**, and T. C. Ou, "Dynamic characteristic analysis for FACTS using GACO-FNN," 2012 7th IEEE Conference on Industrial Electronics and Applications (ICIEA), pp. 954-959, 2012.

[21] W. M. Lin, **C. M. Hong**, C. S. Tu, C. K. Chang, T. C. Ou, and Y. H. Cheng, "Development of A Grid-Connected Fuel Cell and Solar-Wind Renewable Power Generation system," *33th R.O.C. Symp. on Electrical Power Eng.*, pp.1512-1517, Dec. 2012.

[22] T. C. Ou, T. P. Tsao, **C. M. Hong**, and C. H. Chen, "Hybrid Control System for Automatic Voltage Regulator in Smart Grid," *International Conference of Machine Learning and Cybernetics (ICMLC)*, July 2013.

[23] T. C. Ou, T. P. Tsao, W. M. Lin, **C. M. Hong**, K. H. Lu and C. S. Tu, "A novel power flow analysis for microgrid distribution system," 2013 IEEE 8th Conference on Industrial Electronics and Applications (ICIEA), pp. 1550-1555, 2013.

[24] C. H. Huang, **C. M. Hong**, C. L. Huang, C. C. Huang, J. H. Lin, B. Y. Shi, C. S. Jhuang, "Dynamic Operation and Control of a Stand-Alone Wind/PV/Diesel Energy Systems," *2013 International Conference on Information, Business and Education Technology*, pp. 1373-1376, Beijing, China. Mar. 2013.

[25] **C. M. Hong**, C. H. Huang, F. S. Cheng, "Sliding Mode Control for Variable-Speed Wind Turbine Generation Systems using Artificial Neural Network," *The 6th*

International Conference on Applied Energy, pp. 882.1-882.4, Taipei Taiwan, June 2014.

[26] **C. M. Hong**, C. H. Huang, C. C. Huang, "Design of an Adaptive Intelligent Control Scheme for Switched Reluctance Wind Generator," *2015 The International Multi-Conference on Engineering and Technology Innovation*, pp. 172, Kaohsiung Taiwan, Nov. 2015.

[27] C. H. Huang, **C. M. Hong**, K. C. Lin, and S. J. Chuang, "Advanced MPPT Control Strategy for Wind/PV/Fuel Cell Hybrid Power System in Micro-grid application," *2015 International Conference on Computing and Precision Engineering*, pp.32, Nantou, Taiwan, Nov. 2015.

[28] C. H. Huang, **C. M. Hong**, K. C. Lin, X. R. Qiu, and Y. T. Su, "Stability Analysis and Control of Distributed Generation Microgrids by Hybrid Neural Network Control," *The 2nd International Conference on Computing and Precision Engineering*, D1-4, Kenting Taiwan, Oct. 2016.

[29] F. T. Liu, C. H. Chen, Y. C. Kao, **C. M. Hong**, and C. Y. Yang, "Improved ZigBee Module Based on Fuzzy Model for Indoor Positioning System," 2017 IEEE International Conference on Applied System Innovation, I0101, Sapporo, Japan, May 2017.

[30] C. Y. Yang, W. M. Lin, C. H. Chen, and **C. M. Hong**, "Application of Intelligent Speed and Pitch Angle Control for Offshore Wind Power Generation System," 2nd International Conference on Innovative Trends in Engineering, Technology, Computers and Applied Sciences (ITETCAS), ITETCAS-067-CEAS101, Tokyo, Japan, June 2017.

[31] C. S. Tu, H. S. Huang, C. C. Huang, **C. M. Hong**, M. T. Tsai, and F. S. Cheng, "The TM-EPSO for Solving the Unit Commitment Planning in the Day-ahead Power System," 2019 IEEE International Conf. of Intelligent Applied Systems on Engineering (ICIASE), Fuzhou, Fujian, China, April 2019.

[32] K. H. Lu, **C. M. Hong**, X. Gong, M. F. Horng, and Y. Cao, "A Novel Intelligent Controller for Improved Transient Performance of SEIG-based Wave Energy Conversion System," 2020 IEEE 2nd Eurasia Conference on Biomedical Engineering, Healthcare and Sustainability (ECBIOS), pp. 223–226, May 2020.

[33] C. H. Chen, Y. C. Wu, **C. M. Hong** and J. X. Zhang, "Applications of Environment Monitoring System based on Internet of Things via Wireless Sensor Network," 2021 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS), pp. 1-2, Hualien, Taiwan, Nov., 2021.

[34] C. H. Chen, **C. M. Hong**, J. X. Zhang and J. J. Chen, "Energy Storage Monitoring and Smart Energy management System combining Wind and Solar Power Generation," 2022 IEEE International Conference on Applied System Innovation

(ICASI 2022), J220031, Nantou, Taiwan, April, 2022.

C. Patents:

[1] Wind Generation System With PMSG Using Intelligent Maximum Power Tracking Controller, Invention Patent of the Republic of China, I418119, 2013.
[2] An Adjustable-Pitch Control Of Wind Power System and Method Thereof, Invention Patent of the Republic of China, I481780, 2015.
[3] A System Of Solar Power Generator With Power Tracker, Invention Patent of the Republic of China, I481989, 2015.
[4] Air-conditioning compressor control method, Invention Patent of the Republic of China, I587107, 2017.
[5] System Of Fuel Cell With Power Tracker, Invention Patent of the Republic of China, I590573, 2017.
[6] Double-Looped Requirement Control System, Invention Patent of the Republic of China, I659384, 2019.
[7] Integral Electricity Generation System, Invention Patent of the Republic of China, I684142, 2020.
[8] Lighting control system based on Internet of Things (IoT), New Type Patent of the Republic of China, M606823, 2021.
[9] Wind power generation amount prediction system, New Type Patent of the Republic of China, M617390, 2021.
[10] Energy storage system of composite renewable energy, New Type Patent of the Republic of China, M622762, 2022.

D. Books:

[1] W. M. Lin and **C. M. Hong**, Chapter 13 "Intelligent Approach to MPPT Control Strategy for Variable-Speed Wind Turbine Generation System" in *Wind Turbines. Edit by Dr. Ibrahim Al-Bahadly,* InTech Open Access Publisher*,* Austria, European Union, ISBN 978-953-307-221-0, April 2011.
[2] **C. M. Hong,** Renewable Energy Power Generation, Chuan Hwa Book Co., LTD, Jan. 2013.
[3] **C. M. Hong** and T. C. Ou, Renewable Energy Power Generation (Second Edition), Chuan Hwa Book Co., LTD, ISBN：9789865034795, Sept. 2020.