

Kai-Hung Lu Resume



Kai-Hung Lu was born in Penghu County, Taiwan, 1979. I received the B.S. degree in 2001 and the M.S. degree in 2006. I received the Ph.D degree in the department of Electrical Engineering, National Sun Yat-Sen University, Kaohsiung, Taiwan, in 2015. He has been with Minnan University of Science and Technology, Quanzhou City, China, since 2019. My research interests include hybrid green energy, smart grid, carbon reduction for power systems, power system operation, high capacity power electronic systems and power system intelligent control and stability. He was a lecturer and assistant professor in many universities of Taiwan.

I supervised and trained more than 10 master's students of energy field in Taiwan. Furthermore, I have participated in more than 20 large projects and participated in the revision of draft amendment of electricity Act in Taiwan. Previously I have helped some Taiwan companies to plan and evaluate of renewable energy demonstration and automation establishment planning. He have published 51 papers of international/national Journal and conferences, including 30 papers in SCI and EI. I am also a international Journal reviewer of IEEE ACCESS, Energies, IET GT&D, ECM, JAM, CINA EE and ISRN at present.

Working Experience :

Associate Professor, School of Electronic and Electrical Engineering, Minnan University of Science and Technology, Fujian, China. 2019.9-

Associate Professor, School of Information Technology, Beijing Institute of Technology, Zhuhai, China. 2016.9-2019.8

Honor/Award:

2017 Energies Best Paper Award

2019 IEEE ICIASE BEST CONFERENCE PAPER AWARD, IEEE ICIASE.

International Journal, international conference, other:

1. Kai-Hung Lu, Chih-Ming Hong*, Xiaojing Tan, Fu-Sheng Cheng. "Novel Intelligent Control Technology for Enhanced Stability Performance of an Ocean Wave Energy Conversion System, *Energies*", 2021, 14 (SCI)
2. Kai-Hung Lu, Deng Yiping, Li Zhimin *, Xu Ziyu, Chen Yunhao, Lian Junfang and Yang Xia "The study of RWENN for Proton Exchange Membrane Fuel Cell system in microgrid, International Conference on Smart Cities and Smart Grid, 2021. (EI)
3. Kai-Hung Lu, Chih-Ming Hong*, Zhigang Han and Lei Yu "New Intelligent Control Strategy Hybrid Grey–RCMAC Algorithm for Ocean Wave Power Generation Systems", *Energies*, Vol. 13, 241, 2020 (SCI)
4. Fei Wang, Kai-Hung Lu*, Qiangqiang Xu and Ziwen Chen "Design of an Optimal Adaptive Intelligent Control Scheme for STATCOM in a Series Compensated Wind Farm", *Journal of Marine Science and Technology*, pp: 276–287, 2020 (SCI)
5. Chia-Sheng Tu, Chih-Ming Hong and Kai-Hung Lu "Design of Novel Intelligent Controller for Doubly-Fed Induction Generator-Driven Wind Turbine to Improve Transient Control Performance", *Electric Power Components and Systems*, 48(1-2), pp: 174–185, 2020 (SCI)
6. Kai-Hung Lu, Chih-Ming Hong* and Qiangqiang Xu "Recurrent wavelet-based Elman neural network with modified gravitational search algorithm control for integrated offshore wind and wave power generation systems", *Energy*, Vol. 170, pp. 40-52, 2019 (SCI)
7. Kai-Hung Lu, Qiangqiang Xu* and Ziwen Chen* "Transient Stability Analysis of Ocean Wave Energy Fed to a Power Grid Using a SSSC", *IOP Conf. Ser.: Mater. Sci. Eng.* 486, 2019. (EI)
8. Kai-Hung Lu, Chih-Ming Hong*, Xin Gong, Mong-Fong Horng, and Yu Cao "A Novel Intelligent Controller for Improved Transient Performance of SEIG-based Wave Energy Conversion System", *IEEE- IECBIOS*, 2020. (EI)

9. Hsin-Chuan Chen*, Chiou-Jye Huang, and Kai-Hung Lu, "An Infrared-Based Parking System Using Non-Processor OBU Device," *Journal of Computers*, Vol. 30 No. 1, pp. 153-165 2019. **(EI)**
10. Kai-Hung Lu, Hsin-Chuan Chen, Yu Su, and Qiangqiang Xu* "DESIGN OF AN INTELLIGENT DAMPING CONTROLLER OF STATCOM WITH HVDC FOR LARGE OFFSHORE WIND FARM", *Journal of Marine Science and Technology*, Vol. 26, No. 2, pp. 228-239, 2018 **(SCI)**
11. Ting-Chia Ou, Kai-Hung Lu*, and Chiou-Jye Huang "Improvement of Transient Stability in a Hybrid Power Multi-System Using a Designed NIDC (Novel Intelligent Damping Controller)". *Energies*, 10(4):488, 2017 **(SCI)**
12. Kai-Hung Lu*, Hsin-Chuan Chen, Chiou-Jye Huang, Zhi-Feng Huang "DESIGN OF IRFNN FOR RECONFIGURED UPFC TO POWER FLOW CONTROL AND STABILITY IMPROVEMENT", *2017 International Conference on Machine Learning and Cybernetics*, pp 436-443, 2017. **(EI)**
13. Hsin-Chuan Chen*, Chiou-Jye Huang and Kai-Hung Lu "Design of a Non-Processor OBU Device for Parking System Based on Infrared Communication" *2017 IEEE International Conference on Consumer Electronics*, pp 301-302, 2017. **(EI)**
14. Whei-Min Lin, Kai-Hung Lu* and Ting-Chai Ou "Design of a Novel Intelligent Damping Controller for UPFC in Power System Connected Offshore Wind Power Applications", *IET Generation, Transmission & Distribution* Vol. 9, iss. 13, pp.1708-1711, 2015 **(SCI)**
15. Kai-Hung Lu*, Whei-Min Lin and Ting-Chai Ou "An Intelligent Controller for the Integrated Generation Control System", *International Journal of Innovative Research in Advanced Engineering*, Vol.2 iss. 5, pp.39-47, 2015 **(SCI)**
16. C. M. Hong*, Ting-Chai Ou and Kai-Hung Lu "Development of intelligent MPPT (maximum power point tracking) control for a grid-connected hybrid power generation system", *Energy*, Vol. 50, No.1, pp. 270-279, 2013. **(SCI)**
17. Ting-Chia Ou*, Ta-Peng Tsao, Whei-Min Lin, Chih-Ming Hong, Kai-Hung Lu, Chia-Sheng Tu, "A novel power flow analysis for microgrid distribution system", *2013 IEEE 8th Conference on Industrial Electronics and Applications (ICIEA)*, pp1550-1555. **(EI)**
18. Whei-Min Lin, Kai-Hung Lu*, Chih-Ming Hong and Chia-Sheng Tu, "Optimal Location of FACTS for Voltage stability using Modified Particle Swarm Optimization", *Proceedings of IMECS 2012*, 14-16 March, 2012, Hong Kong, Vol II, pp1063-1068. **(EI)**
19. Whei-Min Lin, Kai-Hung Lu*, Chia-Sheng Tu, "Assessment of Power Market for Carbon Trading by Modified Particle Swarm Optimization", *Proceedings of IMECS 2012*, 14-16 March, 2012, Hong Kong, Vol II, pp1407-1505. **(EI)**
20. Whei-Min Lin, Kai-Hung Lu*, Chia-Sheng Tu, "Design the Carbon Market for Power System of Taiwan", *2011 Cross-Straits Energy Economics Conference, HANGCHOW*, 2011.
21. Whei-Min Lin, Chia-Sheng Tu, Kai-Hung Lu*, and Wu-Cheng Lin, "Voltage Stability Study for Smart Grid with Distributed Generation Application", *2011 Cross-Straits Energy Economics Conference, HANGCHOW*, 2011.
22. Whei-Min Lin, Chia-Sheng Tu*, Kai-Hung Lu, and Chang-Ming Lin, "Small Area Power Plant Optimal Planning with Distributed Generations", *2011 Cross-Straits Energy Economics Conference, HANGCHOW*, 2011.
23. Whei-Min Lin, Chih-Ming Hong*, F.S. Cheng, and Kai-Hung Lu, "MPPT Control Strategy for Wind Energy Conversion System Based on RBF Network," *IEEE Energy Tech2011*, No.83, Cleveland, OH, USA, May 2011. **(EI)**
24. Chiung-Hsing Chen, Chih-Ming Hong*, Ting-Chia Ou, and Kai-Hung Lu, "Adaptive Control Based On Neural Network of Induction Generator for Wind Energy Systems," *The 3rd IEEE International Conference on Power Electronics and Intelligent Transportation System (PEITS 2010)*, Vol. 1, pp. 30-33, Shenzhen, China, Nov. 2010. **(EI)**
25. Ting-Chia Ou, Kai-Hung Lu*, Whei-Min Lin, and Chih-Ming Hong, "A Study for Price-Based Unit

Commitment with Carbon Trading by DI&C simulation,”*8thIEEE International Conference on Industrial Informatics (INDIN 2010)*, pp. 73-78, Japan, July, 2010. (EI)

26. Whei-Min Lin Jui-Chu Lin and Kai-Hung Lu* Chia-Sheng Tu, “Study for Price-Based Unit Commitment with Time-varying Nature of Acceleration Coefficient, Particle Swarm Optimization” *3rd International Conference on Power Electronics and Intelligent Transportation System*, 2010. (EI)
27. Whei-Min Lin, Kai-Hung Lu*, “Voluntary Carbon Market Mechanism and Innovative Value of Energy Efficiency Improvement in Electrical Power Market”, *PEITS 2010 vol 6*, pp. 258~261, 2010. (EI)
28. Wei-Min Lin, Wen-Cha Hung*, Cong-Hui Huang, Kai-Hung Lu, “A preventive control for contingencies security”, *International Conference on Power Electronics and Drive Systems (PEDS)*, pp. 252~256, 2009 (EI)
29. Kai-Hung Lu*, Whei-Min Lin, Cong-Hui Huang, Chih-Ming Hong, Wen-Cha 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, Singapore, July. 2009 (EI)
30. Whei-Min Lin, Kai-Hung Lu*, Cong-Hui Huang, Ting-Chia Ou and Yuan-Hui Li “Optimal Location and Capacity of STATCOM for Voltage stability Enhancement using ACO plus GA”, *2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, pp. 1915-1920, Singapore, July. 2009. (EI)
31. Cong-Hui Huang*, Chung-Chi Huang, Ting-Chia Ou, Kai-Hung Lu and Chih-Ming Hong “Intelligent Fuzzy Logic Controller for a Solar Charging System”, *2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, pp. 1412-1417, Singapore, July. 2009. (EI)
32. Ting-Chia Ou, Cong-Hui Huang, Chiung-Hsing Chen, Kai-Hung Lu and Chih-Ming Hong “Probabilistic Neural Network and Polynomial Fitting Approach Used to Determine Radio Field Strength under Power Lines in Radial Network”, *2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, pp. 1653-1658, Singapore, July. 2009. (EI)
33. Whei-Min Lin, Chih-Ming Hong*, Ting-Chia Ou, Kai-Hung Lu and Cong-Hui Huang “An Intelligent Maximum Power Tracking Control Strategy for Wind-Driven IG System Using MPSO Algorithm”, *2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, pp. 1659-1664, Singapore, July. 2009. (EI)
34. Whei-Min Lin, Wen-Cha Hung*, Cong-Hui Huang, and Kai-Hung Lu, “A Preventive Control for Contingencies Security,” *The Eighth International conference on Power Electronics and Drive Systems*, pp. 359, Taipei, Taiwan, Nov. 2009. (EI)
35. T. T. Ma and Kai-Hung Liu*, “Performance Analysis of a Variable Structure Unified Power Flow Controller Using PSCAD/EMTDC Transients Simulation Program,” *The proceedings of ICSS2005, International Conference on Signal and Systems*, pp. 145-150, Taiwan, May 2005. (EI)
36. T. T. Ma and Kai-Hung Lu*, “A P-Q Decoupled Control Scheme Using Fuzzy-Neural Controllers for the Unified Power Flow Controller,” *The IASTED International Conference on Power, Energy, and Applications (PEA2006)*, Botswana, Sept. 2006. (EI)
37. Kai-Hung Lu*, and Ting-Wei Liu, “Assessment of Power Market for Carbon Trading in Taiwan Power System” *Proceedings of The 33th Symposium on Electrical Power Engineering*, Taipei, Taiwan, Dec. 2012.
38. Kai-Hung Lu*, Wan-Bao Shen, Ting-Wei Liu, “System Contingency Study with Power Flow Tracing Method for Congestion” *Proceedings of The 32th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec. 2011.
39. Kai-Hung Lu*, Meng-Che Wu, Cheng-En Tsai, “Power Market for Carbon Trading” *Proceedings of The 32th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec. 2011.
40. Kai-Hung Lu*, “Voluntary Carbon Standard for power system of Taiwan” *Proceedings of The 31th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec. 2010.
41. Kai-Hung Lu*, “Power Dispatch Problems with Emissions for the Interconnected Power Network”, *Proceedings of The 31th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec. 2010.
42. Kai-Hung Lu*, “Study of the Power and Carbon Dispatch Problems”, *Proceedings of The 31th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec. 2010.

43. Whei-Min Lin, Chia-Sheng Tu, Kai-Hung Lu*, “Hybrid Data Mining and MSVM for Short Term Load Forecasting”, *Proceedings of The 31th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2010.
44. Kai-Hung Lu*, Chiung-Hsing Chen, Chia-Shung Tu, Chih-Ming Hong “Dynamic Characteristic Analysis for FACTS Device Using Cerebellar Model Articulation Controller”, *Proceedings of The 31th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2010.
45. Whei-Min Lin, Chih-Ming Hong*, Kai-Hung Lu, “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.
46. Kai-Hung Lu*, Tung-Sheng Zhan, Ting-Chia Ou, Jia-Chu Lee and Yi-Sheng Chen “Study of the Two-Objective Power Dispatch Problem Combined with Optimal Power Flow”, *Proceedings of The 30th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2009.
47. Kai-Hung Lu*, Cong-Hui Huang, Wen-Cha Hung, Yuan-Hui Li and Meng-Che Wu “A Study for GACO-Based Unit Commitment”, *Proceedings of The 30th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2009.
48. Kai-Hung Lu*, Ting-Chia Ou, Chih-Ming Hong, Yuan-Hui Li and Meng-Che Wu “A Study for Carbon Trading-Based Unit Commitment”, *Proceedings of The 30th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2009.
49. Whei-Min Lin, Hong- Jey Gow, Kai-Hung Lu*, Jia-Long Hong, Yuan-Hui Li and Ta-Peng Tsao “Power Market Security Assessment and Dispatch”, *Proceedings of The 30th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2009.
50. “Whei-Min Lin, Tung-Sheng Zhan*, Kai-Hung Lu, Yi-Sheng Chen, Wu-Cheng Lin and Ta-Peng Tsao Study of Transfer Capability for Dynamic Optimal Power Flow”, *Proceedings of The 30th Symposium on Electrical Power Engineering*, Taoyuan, Taiwan, Dec.2009.
51. 吕凯弘*, 黄琮晖, 赖正颖, 吴建贤, “应用智能型控制器整合静态同步串联补偿器之动态分析”, 第二十九届电力工程研讨会, F4-6, 中华民国九十七年十二月。

Projects (PI/Co-PI/ Researcher) :

- [1] Research on optimal power flow with preventive security constraints in power system in the Post-COVID-19 World, Natural Science Foundation of Fujian Province of China (No. 2021J01531), 2021.11.01-2024.11.01 **(PI)**
- [2] Design of Intelligent Algorithms for UPFC to Ocean Wave Generator System, School level scientific research projects of Beijing institute of technology, Zhuhai. (XK-2019-02). 2019.01.01-2019.12.31. **(PI)**
- [3] Scientific Research Foundation, Beijing Institute of Technology, Zhuhai, 0000000017/010/003, 2016.9.1-2018.7.31. **(PI)**
- [4] Intelligent Power Distribution and Microgrid Energy Management System (1/3). Ministry of Science and Technology, Taiwan, (103-2221-E-110-046-MY3). 2014.8.1-2015.7.31. **(Researcher)**
- [5] Development and Operation Planning of Power Quality Improvement and Substitution Technology in Transmission and Distribution Systems (3/3). Ministry of Science and Technology, Taiwan. (103-3113-E-194-003). 2014.4.1-2014.12.31. **(Researcher)**
- [6] A Novel Wind Power Generator Framework with an Excitation Synchronous Generator (I). Ministry of Science and Technology, Taiwan. (102-3113-P-110-005). **(Researcher)**
- [7] Application of Fault Section Determination in the Micro-Grid Distribution System Institute of Nuclear Energy Research Atomic Energy Council. (101-3111-Y-042A-028). 2012.5.1-2013.4.30. **(Researcher)**
- [8] Assessing long-term carbon emissions control methods of feasibility for Taiwan power dispatch. Ministry of Science and Technology, Taiwan. (101-2221-E-110-076-MY2). 2012.8.1-2014.7.31. **(Researcher)**
- [9] Development and Operation Planning of Power Quality Improvement and Substitution Technology in Transmission and Distribution Systems (2/3). Ministry of Science and Technology, Taiwan. (102-3113-P-194-002). 2013.1.1-2013.12.31. **(Researcher)**
- [10] Energy saving strategy and carbon reduction for power systems (3/3). National Science Council, Taiwan. (100-3113-P-110-003). 2012.1.1-2012.12.31. **(Co-PI)**
- [11] Feasibility Assessment and Planning Suggestions for Intelligent Emergency Center of Taiwan power company. Taiwan Power Company. (99-0003). 2011.1.1-2011.6.30. **(Researcher)**

- [12] Development and Operation Planning of Power Quality Improvement and Substitution Technology in Transmission and Distribution Systems (1/3). National Science Council, Taiwan. (100-3113-P-110-003). 2011.12.1-2012.12.31. **(Researcher)**
- [13] Energy saving strategy and carbon reduction for power systems (2/3). National Science Council, Taiwan. (100-3113-P-110-003). 2010.1.1-2011.12.31. **(Co-PI)**
- [14] Smart Grid-Low voltage energy management and supervision. National Science Council, Taiwan. (99-2221-E-110-084). 2010.8.1-2011.7.31. **(Researcher)**
- [15] Energy saving strategy and carbon reduction for power systems (1/3). National Science Council, Taiwan. (98-3114-P-110-002). 2009.11.1-2010.12.31. **(Co-PI)**
- [16] The study of energy saving and carbon reduction in power system. National Science Council, Taiwan. (98-2221-E-110-079). 2009.8.1-2010.7.31. **(Co-PI)**
- [17] The study of energy saving and carbon reduction in power system-The research of carbon reduction strategy and trading for power market. National Science Council, Taiwan. (98-2221-E-110-080). 2009.8.1-2010.7.31. **(Co-PI)**
- [18] Security and Robustness Enhancement and Improvement for Power system operation (3/3). National Science Council, Taiwan. (95-2221-E-110-130-MY3). 2008.8.1-2009.7.31. **(Researcher)**
- [19] Security and Robustness Enhancement and Improvement for Power system operation-Coupled real and reactive power tracing with sensitivity model for power market security assessment and dispatch (3/3). National Science Council, Taiwan. (95-2221-E-110-131-MY3). 2008.8.1-2009.7.31. **(Researcher)**
- [20] Security and Robustness Enhancement and Improvement for Power system operation (2/3). National Science Council, Taiwan. (95-2221-E-110-130-MY3). 2007.8.1-2008.7.31. **(Researcher)**
- [21] Security and Robustness Enhancement and Improvement for Power system operation-Coupled real and reactive power tracing with sensitivity model for power market security assessment and dispatch (2/3). National Science Council, Taiwan. (95-2221-E-110-131-MY3). 2007.8.1-2008.7.31. **(Researcher)**
- [22] Security and Robustness Enhancement and Improvement for Power system operation (1/3). National Science Council, Taiwan. (95-2221-E-110-130-MY3). 2006.8.1-2007.7.31. **(Researcher)**
- [23] Security and Robustness Enhancement and Improvement for Power system operation-Coupled real and reactive power tracing with sensitivity model for power market security assessment and dispatch (1/3). National Science Council, Taiwan. (95-2221-E-110-131-MY3). 2006.8.1-2007.7.31. **(Researcher)**