**Publication and Project List**

1. **Referred Journal Papers**
2. L. Yao,W. A. Sethares and D. C. Kammer, “Sensor placement for on-orbit modal identification of large space structures via a genetic algorithm,” *AIAA Journal,* vol. 31, No. 10, pp. 1922-1928, Oct. 1993.
3. L. Yaoand W. A. Sethares, “Nonlinear parameter estimatin via the genetic algorithm,” *IEEE Trans. Signal Processing,* Vol. 42, No. 4, pp. 927-935, April 1994.
4. D. C. Kammer and L. Yao, “Enhancement of on-orbit modal identification of large sapce structures through sensor placement,” *Journal of Sound and Vibration,* Vol. 177, pp. 119-139, March, 1994.
5. L. Yao, “Kernal estimation of a sparse Volterra series,” *Journal of Taipei Institute of Technology,* Vol. 27-1, pp. 87-109, March 1994.
6. L. Yao, R.-L. Yen and G.-W. Huang, “Design of air-conditioning load shedding system via radio,” *Energy*, vol. 24, no. 2, pp. 92-105, Apr. 1994.
7. L. Yao, W.-P. Wang, R.-L. Yen, G.-W. Huang and S.-D. Tu, “Management of air-conditioning system by Radio controlled load management system,” *Journal of Taipower’s Engineering*, vol. 551, pp. 44-53, Jul. 1994.
8. L. Yao, W.-P. Wang, R.-L. Yen and W.-C. Chang,” Improve strategy for direct control of air conditioning facilities by radio controlled load management system,” *Journal of Taipower’s Engineering*, vol. 568, pp. 37-47, Dec. 1995.
9. L. Yao**,** “Nonparametric learning of decision regions via the genetic algorithm,” *IEEE Trans. System, Man, and Cybernetics,* Vol. 26, No. 2, pp. 313-321, April 1996.
10. L. Yao**,** “Fuzzy control of belt conveyor in the manufacturing system,” *Journal of Taipei Institute of Technology,* Vol. 29-1, pp. 49-67, March 1996.
11. L. Yao, R.-L. Yen and W.-C. Chang, “Strategy of selecting customers for direct load control,” *Energy*, vol. 26, no. 4, pp. 87-104, Oct. 1996.
12. L. Yao, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Design of expanding coverage of direct load control,” *Journal of Taipower’s Engineering*, vol. 583, pp. 95-105, Mar. 1997.
13. L. Yao, “Existence of time optimal control of a DC motor,” *Journal of Taipei Institute of Technology,* Vol. 30-1, pp. 83-96, 1997.
14. L. Yao, R.-L. Yen and W.-C. Chang, “Design of improving monitoring system for radio-controlled direct load control system,” *Journal of Technology*, vol. 12, no. 4, pp. 689-695, Dec. 1997.
15. L. Yao, W.-P. Wang, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Direct control of air-conditioning load in Chung-Ho and Yung-Ho districts by radio-controlled load management system,” *Journal of Taipower’s Engineering*, vol. 589, pp. 84-93, Sep. 1997.
16. L. Yao, “Edge detection by encoded edge patterns,” *Journal of Taipei Institute of Technology,* Vol. 30-2, pp. 47-59, 1997.
17. L. Yao, K.-C. Hsieh, W.-P. Wang, R.-L. Yen and W.-C. Chang, “Studies of periodic direct control of air conditioning load,” *Journal of Refrigeration and Air Conditioning,* vol. 6, no. 3, pp. 50-62, 1997.
18. L. Yao, “Genetic algorithm based identification of nonlinear systems by sparse Volterra filters,” *IEEE Trans. Signal Processing,* Vol. 47, No. 12, pp. 3433-3435, Dec. 1999.
19. S.-D. Cheng, L. Yao, R.-L. Yen, W.-C. Chang, T.-G. Lu and J.-H. Lin, “Cost and schedule analysis for building radio-controlled load management system in Taipei metropolitan area,” *Journal of Taipower’s Engineering,* vol. 589, pp. 36-50, Jun. 1998.
20. S.-D. Cheng, L. Yao, R.-L. Yen, W.-C. Chang, “Application of modulated side-band to direct control of air-conditioning load,” *Energy,* vol. 7, no. 2, pp. 26-40, 1998.
21. L. Yao, J.-C. Feng, W.-P. Wang, W.-H. Chao, L.-C. Wang and G.-C. Lee, “Economic analysis and promotion strategies for absorption chillers,” *Journal of Taipower’s Engineering,* vol. 600, pp. 51-64, Aug. 1998.
22. L. Yao, C.-C. Tu, M.-H. Huang, C.-H. Yang, “Application of trunking radio and multi-address radio systems to feeder automation,” *Journal of Taipower’s Engineering,* vol. 600, pp. 51-64, Aug. 1998.
23. L. Yao, C.-C. Lin, C.-C. Tu, M.-H. Huang and Y.-C. Yang, “Application of radio broadband network to feeder automation,” *Journal of Taipower’s Engineering,* vol. 618, pp. 27-36, Feb. 2000.
24. J.-H. Lin, L. Yao and R.-L. Yen, “Direct control of air-conditioning load,” *Journal of Electrical Engineering,* pp. 18-23, Mar. 1999.
25. L. Yao and J.-H. Lin, “Customer solicitation strategy and customer response analysis for remote control of central chillers,” *Journal of Taipower’s Engineering,* vol. 628, pp. 85-97, Dec. 2000.
26. L. Yao and W.-C. Chang, “Coordination of building automation and Taipower’s remote load shedding,” *Refrigeration and Air-conditioning,* vol. 5, pp. 141-150, Oct. 2000.
27. L. Yao and G.-W. Chang, “Application of radio spectrum network to feeder automation,” Journal of Taipower’s Engineering, vol. 625, pp. 86-97, Sep. 2000.
28. L. Yao and S.-D. Cheng, “Feasibility studies of direct load control via radio paging system with specific communication codes,” *Journal of Taipower’s Engineering,* vol. 627, pp. 107-118, Nov. 2000.
29. L. Yao and G.-W. Chang, “Application of radio network to switching of capacitor bank,” *Journal of Taipower’s Engineering,* vol. 641, pp. 31-42, Jan. 2002.
30. T.-B. Huang and L. Yao, “Software system design for two-way load control via broadband networks,” *Journal of Taipower’s Engineering,* vol. 648, pp. 44-56, Aug. 2002.
31. L. Yao and W.-C. Chang, “Analysis of load shedding strategy for central chillers,” *Journal of Taipower’s Engineering,* vol. 649, pp. 24-33, Sep. 2002.
32. L. Yao, “Linear load shedding control for centrifugal chillers,” *Engineering Technology,* vol. 64, pp. 31-34, Oct. 2002.
33. W.-C. Chang and L. Yao, “Direct control of air-conditioning load for convenient stores via radio paging system,” *Journal of Taipower’s Engineering,* vol. 654, pp. 68-76, Feb. 2003.
34. H.-Y. Pan and L. Yao, “Design of data distributor for broadband network based wide-area monitoring and control system,” *Journal of Taipower’s Engineering,* vol. 655, pp. 122-133, Mar. 2003.
35. Y.-C. Chen and L. Yao, “Design of outage detection system in broadband network based multi-services system,” *Journal of Taipower’s Engineering,* vol. 656, pp. 31-40, Apr. 2003.
36. L. Yao, “Direct control of split-type air conditioners for convenient stores,” *Engineering Technology,* vol. 71, pp. 42-47, Dec. 2003.
37. Y.-W. Huang and L. Yao, “Design of fault detection system for broadband network based multi-services system,” *Journal of Taipower’s Engineering,* vol. 665, pp. 31-45, Jan. 2004.
38. L. Yao and Y.-C. Chen, “Design of electricity tariff calculation mechanism in demand exchange system,” *Energy,* vol. 34, no. 1, pp. 41-55, Jan. 2004.
39. T.-R. Lin and L. Yao, “Design of customer information system for broadband network based multi-services system,” *Journal of Taipower’s Engineering,* vol. 666, pp. 96-105, Feb. 2004.
40. L. Yao and W.-C. Chan, “Design of both exchange message broadcasting mechanism and demand bidding mechanism in demand exchange system,” *Energy,* vol. 34, no. 2, pp. 25-40, Apr. 2004.
41. L. Yao and Chin-chin Lin, “Learning of class membership values by ellipsoidal decision regions,” *International Journal of Computational Intelligence,* vol. 1, no. 3, pp. 225-230, 2004.
42. L. Yao**,** W.-C. Chang and R.-L. Yen, “An iterative deepening genetic algorithm for scheduling of direct load control,” *IEEE Trans. Power System,* vol. 20, no. 3, pp. 1414-1421, Aug. 2005.
43. L. Yao and H.-R. Lu, “Application of demand subscription system to energy saving,” *Journal of Taipower’s Engineering,* vol. 687, pp. 29-39, Nov. 2005.
44. L. Yao, “Two-way direct load control system via public broadband networks,” *Engineering Technology,* vol. 83, pp. 141-145, Dec. 2005.
45. L. Yaoand Chih-Heng Fang, “A hardness measuring method based on Hough fuzzy vertices detection algorithm,” *IEEE Trans. Industrial Electronics,* vol. 53, no. 3,pp. 950-962, June 2006.
46. G.-Y. Chen and L. Yao, “Distribution transformer monitoring and assessment system,” *Journal of Taipower’s Engineering,* vol. 702, pp. 1-17, Feb. 2007.
47. G.-Y. Chen and L. Yao, “Design and implementation of sensing recorder for distribution transformer,” *Journal of Taipower’s Engineering,* vol. 703, pp. 44-58, Mar. 2007.
48. S.-J. Lin and L. Yao, “Design and implementation of surveillance recorder for secondary substation,” *Journal of Taipower’s Engineering,* vol. 715, pp. 32-47, Mar. 2008.
49. S.-J. Lin and L. Yao, “Facility inspection and surveillance system for secondary substations,” *Journal of Taipower’s Engineering,* vol. 716, pp. 30-43, Apr. 2008.
50. L. Yao and P.-Z. Huang, “Learning of hybrid fuzzy controller for optical data storage device,” *IEEE/ASME Trans. Mechatronics,* vol. 13, no.1, pp. 3-13, Feb. 2008.
51. L. Yao and Hao-Ren Lu, “A two-way direct control of central air-conditioning load via Internet,” *IEEE Trans. Power Delivery,* vol. 24, no. 1, pp. 240-248, Jan. 2009.
52. L. Yaoand Chin-chin Lin, “Identification of nonlinear systems by the genetic programming based Volterra filter,” *IET Signal Processing,* vol. 3, no. 2, pp. 93-105, 2009.
53. L. Yao, J.-K. Huang and Y.-H. Chen, “Write strategy learning for optical dye recording,” *IEEE/ASME Trans. Mechatronics,* vol. 24, no. 5, pp. 555-563, Oct. 2009.
54. R.-W. Chang andL. Yao**,** “Clustering of incomplete data based on ellipsoids with adaptive volumes,” *ICIC Express Letters,* vol. 3, no. 4(A), pp. 1037-1042, Dec. 2009.
55. K.-S. Weng andL. Yao**,** “Fuzzy modeling based on self learning of adaptive ellipsoids,” *ICIC Express Letters,* vol. 3, no. 4(A), pp. 1043-1048, Dec. 2009.
56. L. Yao and Chin-chin Lin, “On a genetic algorithm based gain scheduled fuzzy PID controller,” *Int. Journal of Innovative Computing, Information and Control,* vol. 5, no. 10(B), pp. 3593-3602, Oct. 2009.
57. L. Yao and Yuan-Shiu Chen, “**A Type-2 fuzzy controller for automatic guided vehicle wall-Following control,”** *ICIC Express Letters Part-B: Applications,* vol. 1, no. 1, pp. 77-83, Sep. 2010.
58. L. Yaoand Y.-S. Chen, “Type-2 fuzzy control of an automatic guided vehicle for wall following,” Book Chapter in *Fuzzy Controllers, Theory and Applications,* edited by Lucian Grigorie, Chap. 13, pp. 243-252, InTech, Feb. 2011.
59. L. Yao, Yin-Chieh Chou, and Chin-chin Lin, “Scheduling of direct load control using genetic programming,” *Int. Journal of Innovative Computing, Information and Control,* vol. 7, no. 5, pp. 2515-2528, May 2011.
60. L. Yao and T.-Y. Pan, “Feature selection and classification of SELDI-TOF mass spectra of hepatoma using gene weighted Genetic Algorithm,” *Int. Journal of Innovative Computing*, *Information and Control,* vol. 8, no. 1, pp. 989-1000, Jan. 2012.
61. L. Yao and H.-K. Wen, “Design of observer based adaptive PID controller for nonlinear system,” *Int. Journal of Innovative Computing*, *Information and Control*, vol. 9, no. 2, pp. 667-677, Feb. 2013.
62. L. Yao and K.-S. Weng, “Learning decision regions based on adaptive ellipsoids,” *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, vol. 22, no. 1, pp. 41-73, Feb. 2014*.*
63. L. Yao, T.-S. Tsai, and R.-C. Chang, “Identification of high risk feature regions for transmission towers,” *Advanced Materials Research,* vol. 955-959, pp. 4104-4109, 2014.
64. L. Yao, T.-S. Tsai, and R.-C. Chang, “Precipitation estimation at the site of transmission tower using geographic information system,” *Advanced Materials Research,* vol. 955-959, pp. 3869-3874, 2014.
65. B. Thirumalraj, S. Palanisamy, S.-M. Chen, P.-S. Wu, L. Yao and B.-S. Lou, “Electrochemical sensing of SF6 decomposition products based on a screen printed carbon electrode,” *Int. J. Electrochem. Sci.*, vol. 10, pp. 3098-3105, Feb. 2015.
66. S. Sakthinathan, S. Palanisamy, S.-M. Chen, P.-S. Wu, L. Yao and B.-S. Lou, “Electrochemical detection of phenol in industrial pollutant absorbed molecular sieves by electrochemically activated screen printed carbon electrode,” *Int. J. Electrochem. Sci.*, vol. 10, pp. 3319-3328, Feb. 2015.
67. C.-H. Liu, S. Palanisamy, S.-M. Chen, P.-S. Wu, L. Yao, and B.-S. Lou, “Mechanism of Formation of SF6 Decomposition Gas Products and its Identification by GC-MS and Electrochemical methods: A mini Review,” *Int. J. Electrochem. Sci.*, vol. 10, pp. 4223-4231, Mar. 2015.
68. L. Yao and K.-S. Weng, “Imputation of incomplete data using adaptive ellipsoids with liner regression,” *J. Intelligent & Fuzzy Systems*, vol. 29, pp. 253-265, 2015.
69. C.-H. Liu, T.-B. Lin, L. Yao, and S.-Y. Wang, “Integrated Power Transformer Diagnosis Using Hybrid Fuzzy Dissolved Gas Analysis,” *IEEJ Trans. Electrical and Electronic Engr.,* no. 10, pp. 689-698, Oct. 2015.
70. A. Garg, V. Vijayaraghavan, C. H. Wong, K. Tai, K. Sumithra, S. S. Mahapatra, P. M. Singru, L. Yao, “Application of artificial intelligence technique for modelling elastic properties of 2D nanoscale material, “ *Molecular Simulation*, vol. 41, no. 14, pp. 1143-1152, Sep. 2015.
71. L. Yao, K.-S. Weng, and M.-S. Wu, “Evolutionary learning of classifiers for disc discrimination,” *IEEE/ASME Trans. Mechatronics,* vol. 20, no. 6, pp. 3194-3203, Dec. 2015.
72. L. Yao, K.-S. Weng, and T.-B. Lin, “Observer based adaptive fuzzy controller with modulated membership functions for nonlinear system,” *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, vol. 24, no. 1, pp. 137-159, 2016*.*
73. L. Yao,W. H. Lim, and T. S. Tsai, “A real-time charging scheme for demand response in electric vehicle parking station,” *IEEE Trans. Smart Grid*, vol. 8, no. 1, pp. 52-62, Jan. 2017.
74. L. Yao, Z. Damiran, and W. H. Lim, “Optimal charging and discharging scheduling for electric vehicles in a parking station with photovoltaic system and energy storage system,” *Energies,* vol. 10, no. 4, 550, pp. 1-20, April 2017. (doi:10.3390/en10040550)
75. L. Yao, Lei Yao and W. H. Lim, “A soft curtailment of wide-area central air conditioning load,” *Energies*, vol. 11, no. 3, 492, pp. 1-15, March 2018. (doi: 10.3390/en11030492)
76. C.-M. Lai, Y.-J. Lin, Y.-H. Cheng and L. Yao, “Development of a modular single-phase grid-tie inverter system for fuel-cell power generation,” *Journal of the Chinese Institute of Engineers*, vol. 41, no. 2, pp. 112-123, 2018. (doi.org/10.1080/02533839.2018.1437365)
77. L. Yao and W. H. Lim, “Optimal purchase strategy for demand bidding,” *IEEE Trans. Power System,* vol. 33, no. 3, pp. 2754-2762, May 2018.
78. L. Yao and J.-K. Huang, “On-line learning of write strategy for ultra-speed CD-RW optical recorder,” *Sensors*, vol. 18, no. 7, 2070, July 2018. (doi:10.3390/s18072070)
79. L. Yao, W. H. Lim, S. S. Tiang, T. H. Tan, C. H. Wong, and J. Y. Pang, “Demand bidding optimization for an aggregator with a Genetic Algorithm,” *Energies*, vol. 11, no. 10, 2498, pp. 1-24, Oct. 2018. (doi: 10.3390/en11102498)
80. L. Yao and J.-H. Huang, “Multi-objective optimization of energy saving control for air conditioning system of data center,” to be published in *Energies*, 2019.

**(B1) International Conference Papers**

1. Kammer, D. C. and L. Yao, "Placement of limited number of sensors for\ modal identification of photovoltaic array," in *Proc. ADPA/AIAA/ASME/SPIE Conf. on Active Material and Adaptive Structures, Alexendria, VI,* pp. 261-266, Dec. 1991.
2. L. Yao, W. A. Sethares and Y. H. Hu, "Identification of a nonlinear system modeled by a sparse Volterra series," in *Proc. IEEE Int. Conf. System Engr., Kobe, Japan,* pp. 624-627, Sep. 17-19, 1992.
3. L. Yao, W. A. Sethares and D. C. Kammmer, "Sensor placement for on-orbit modal identification of large space structures via a genetic algorithm," in *Proc. IEEE Int. Conf. System Engr., Kobe, Japan,* pp. 332-335, Sep. 17-19, 1992.
4. L. Yao, "Application of the Genetic Algorithm to parameter estimation of nonlinear filters," in *Proc. IASTED International Conf. on Modelling and Simulation, Pittsburgh, PA,* pp. 205-208, May 10-12, 1993.
5. L. Yao, "Learning of Decision regions based on the genetic algorithm," in *Proc. IEEE symposium on emerging technologies and factory automation, Tokyo, Japan,* pp. 438-445, Nov. 6-10, 1994.
6. L. Yao, "Fuzzy control of belt conveyor in the manufacturing system," in *Proc. IEEE International Conference on Industrial Automation and Control,* Taipei, Taiwan, R.O.C., pp. 748-754, May 2-7, 1995, Taipei, Taiwan, R. O. C.
7. L. Yao, “Edge detection by encoded edge patterns,” in *Proc. IASTED International Conf. Signal and Image Processing, Orlando, Florida,* pp. 335-339, Nov. 11-14, 1996.
8. L. Yao, “Genetic algorithm based identification of nonlinear systems by sparse Volterra Filters,” in *Proc. IEEE Conf. Emerging Technologies and Factory Automation, Hawaii,* pp. 327-333, Nov. 18-21, 1996.
9. L. Yao and Kai-Chin Hsieh, “Scheduling of direct load control by a recursive Genetic Algorithm, in *Proc. IEEE Conf. System, Man, and Cybernetics, San Diego,* *California,* pp. 2460-2465, Oct. 11-14, 1998.
10. L. Yao, An-Min Wang and Yung-Fu Cheng, “Track seeking hybrid fuzzy Controller for the Compact Disc Player,” in *Proc. 10th IEEE Int. Conf. On Fuzzy Systems, Melbourne, Australia,* pp. 1589-1593, Dec. 2-5, 2001.
11. L. Yao and Chin-Chin Lin, “Learning of Fuzzy Decision Regions by Genetic Algorithm Based Hyperellipsoids,”in *Proc. 10th IEEE Int. Conf. On Fuzzy Systems, Melbourne, Australia,* pp. 837-841, Dec. 2-5, 2001.
12. L. Yao and Chih-Heng Fang, “An automatic hardness measuring method using Hough transform and fuzzy c-means algorithm,”in *Proc. 10th IEEE Int. Conf. On Fuzzy Systems, Melbourne, Australia,* pp.842-847, Dec. 2-5, 2001.
13. L. Yao, Chin-chin Lin and Chi-cheng Feng, “Learning of the gain adjusted fuzzy PID controller by accumulated genetic algorithms,” in *Proc. 2002 IEEE International Conf. On Industrial Technology, Bangkok, Thailand,* pp. 649-654, Dec. 11-14, 2002.
14. L. Yao and K.-S. Wong, “Modeling of Fuzzy Systems by Ellipsoidal Partitions of Input/Output Space,” in *Proc. IEEE IECON 2003, Virginia,* pp. 2399-2404, Nov. 2-6, 2003.
15. L. Yao and K.-S. Weng and C.-D. Huang, “A fuzzy classifier with evolutionary design of ellipsoidal decision regions,” in *Proc. International Conference on Computational Intelligence, 2004,* Istanbul, Turkey, pp. 449-453, Dec. 17-19, 2004.
16. L. Yao and Chin-chin Lin, “Design of gain scheduled fuzzy PID controller,” in *Proc. International Conference on Computational Intelligence,* Istanbul, Turkey, pp. 432-436, Dec. 17-19, 2004.
17. L. Yao and Chin-chin Lin, “Learning of class membership values by ellipsoidal decision regions,” in *Proc. International Conference on Computational Intelligence,* Istanbul, Turkey, pp. 60-64, Dec. 17-19, 2004.
18. Chin-Chin Lin, L. Yao and Chien-Hsing Chou, “A Gain-adjusted Fuzzy PI/PD Adaptive Controller based on the Accumulated Genetic Algorithm,” in *Proc. 13th IEEE Int. Conf. On Fuzzy Systems,* Reno, Nevada, pp. 513-518, May 22-25, 2005.
19. L. Yao, Kuei-Song Weng and Cherng-Dir Huang, “Evolutionary Design of Fuzzy Classifier with Ellipsoidal Decision Regions,” in *Proc. 2005 IEEE Int. Conf. Systems, Man, and Cybernetics,* The Big Island, Hawaii, pp.785-790, Oct. 10-12, 2005.
20. L. Yao and Chin-chin Lin, “Genetic programming based multichannel identification of nonlinear systems by Volterra Filters,” in *Proc. 2006 IEEE Congress on Evolutionary Computation,* Vancouver, Canada, pp. 9769-9776, July 16-21, 2006.
21. L. Yao and Po-Zhao Huang, “Automatic learning of hybrid fuzzy controller for the optical data storage device,” in *Proc. 2006 IEEE Int. Conf. Systems, Man, and Cybernetics,* Taipei, Taiwan, pp. 1810-1815, *Oct. 8-11, 2006*.
22. H.-R. Lu and L. Yao, “On-line load optimization for two way load management system,” in *Proc. 2006 IEEE Int. Conf. Systems, Man, and Cybernetics,* Taipei, Taiwan, pp. 3250-3255, Oct. 8-11, 2006.
23. L. Yao and Kuei-Sung Weng, “Evolutionary learning of adaptive fuzzy classifier,” in *Proc. 2006 IEEE Int. Conf. Systems, Man, and Cybernetics,* Taipei, Taiwan, pp. 5124-5129, Oct. 8-11, 2006.
24. Tze Yang and L. Yao, “A fuzzy classifier with adaptive learning of norm inducing matrix,” in *Proc. 2007 IEEE Int. Conf. Networking, Sensing and Control,* London, U.K., pp. 362-367, Apr. 15-17, 2007.
25. L. Yao, Tsong-Hai Hsu, Chin-Chin Lin and Chen-Han Lin, “A block deepening genetic programming for scheduling of direct load control,” in *Proc. 2007 IEEE Int. Conf. Networking, Sensing and Control,* London, U.K., pp. 821-827, Apr. 15-17, 2007.
26. Hau-Ren Lu and L. Yao, “Design and implementation of distribution transformer outage detection system,” in Proc. IEEE Int. Conf. Industrial Informatics, Vienna, Austria, pp. 323-328, July 23-27, 2007.
27. M.-S. Wu, G.-W. Weng and L. Yao, “Disc discrimination for car used optical disc drive by fuzzy clustering with adaptive ellipsoids,” in *Proc. Int. Conf. Information Technology,* Taichung, pp. 182.1-182.7, May 12-13, 2008.
28. L. Yao and Hau-Ren Lu, “Optimization of two-way direct load control based on fuzzy linear programming,” in *Proc. IEEE Int. Conf. Fuzzy Systems,* Hong Kong, pp. 1894-1901, June 1-6, 2008.
29. L. Yao, J. N. Jiang, and W.-Y. Wang, “An observer based adaptive fuzzy controller with modulated membership function,” in *Proc. 2008 CACS Int. Automatic Control Conf.,* Taiwan, pp. FA04.87.1-6, Nov. 21-23, 2008.
30. L. Yao, H.-K. Wen, and W.-Y. Wang, “A GA tuned adaptive PID controller with observer,” in *Proc. 2008 CACS Int. Automatic Control Conf.,* Taiwan, pp. FB05.118.1-6, Nov. 21-23, 2008.
31. L. Yao and C.-C. Lin, “On a Genetic-Algorithm based gain scheduled fuzzy PID controller,” in *Proc. 2008 Int. Symp. Intelligent Informatics,* Japan, pp. A305.1-6, Dec. 12-13, 2008.
32. L. Yao, C.-K. Huang, and Y.-H. Chen, “Write strategy optimization for optical disc recording,” in *Proc. IEEE Int. Conf. Consumer Electronics,* Las Vegas, NV, pp. 1.3-2.1 – 1.3-2.2, Jan. 10-14, 2009.
33. L. Yao, K.-S. Weng, and R.-W. Chang, “Fuzzy Classification of Incomplete Data with Adaptive Volume,” in *Proc. 2009 Asian Conf. Intelligent Information and Database,* Quang Binh, Vietnam, pp. S4C.3.1- S4C.3.6, Apr. 1-3, 2009.
34. L. Yao, K.-S. Weng, and R.-W. Chang, “A fuzzy classifier with directed initialization adaptive learning of norm inducing matrix,” in *Proc. 2009 Asian Conf. Intelligent Information and Database,* Quang Binh, Vietnam, pp. S4C.4.1- S4C.4.6, Apr. 1-3, 2009.
35. R.-W. Chang and L. Yao, “Clustering of incomplete data based on ellipsoids with adaptive volumes,” in *Proc.* 2009 *Int. Symp. Intelligent Informatics,* QinHuangDao, China, pp. 1037-1042, Sep. 13-15, 2009.
36. K.-S. Weng and L. Yao, “Fuzzy modeling based on self learning of adaptive ellipsoids,” in *Proc.* 2009 *Int. Symp. Intelligent Informatics,* QinHuangDao, China, pp. 1043-1048, Sep. 13-15, 2009.
37. H. S. Yang, J. S. Chen and L. Yao, “A Navigation System Based on Real-Time Visual Localization and Mapping,”in *Proc. Int. Automatic Control Conf. Autonomous/Intelligent Robot*s, Taipei, Taiwan, pp. SuA10. 1-6, Nov. 27-29, 2009.
38. C. C. Lin, S. S. Xue, and L. Yao, “Position Calculating and Path Tracking of Three Dimensional Location System based on Different Wave Velocities,” in *Proc.* *The 8th Int. Conf. Pervasive Intelligence and Computing*, Chengdu, China, pp. 436-441, Dec. 12-14, 2009.
39. W. J. Pan, C. C. Lin, and L. Yao, “Adaptive Fuzzy Control with Modulated Membership Function Applies to Path Tracking Based on Location System,” in *Proc. The 8th International Conference on Pervasive Intelligence and Computing (PICOM 2009)*, Chengdu, China, pp. 215-220, Dec. 12-14, 2009.
40. Y. C. Chou and L. Yao, “Automatic Diagnostic System of Electrical Equipment using Infrared Thermography,“ in *Proc. 2009 Int. Conf. Soft Computing and Pattern Recognition*, Malacca, Malaysia, pp. 155-160, Dec. 4-7, 2009.
41. Y. S. Chen and L. Yao, “Robust Type-2 Fuzzy Control of an Automatic Guided Vehicle for Wall-Following,” in *Proc. 2009 Int. Conf. Soft Computing and Pattern Recognition*, Malacca, Malaysia, pp. 172-177, Dec. 4-7, 2009.
42. L. Yao and W.-J. Pan, “Fuzzy Adaptive Controller with Modulated Membership Function for a MIMO Uncertain Nonlinear System,” in *Proc. Int. Conf. Innovative Computing, Information and Control*, Kaohsiung, Taiwan, B10-09.1-6, Dec. 7-9, 2009.
43. L. Yao and K.-L. Lim, “Design of Adaptive Fuzzy PID Controller for Nonlinear System,” in *Proc. Int. Conf. Innovative Computing, Information and Control*, Kaohsiung, Taiwan, B12-09.1-6, Dec. 7-9, 2009.
44. L. Yao and T.-Y. Pan, “Feature Selection and Classification of SELDI-TOF Mass Spectra of Hepatoma Using Gene-weighted Genetic Algorithm,” in *Proc. 23 Annual Conf. of Biomedical Fuzzy Association,* Kitakyushu, Japan, pp. 267-272, Oct. 9-10, 2010.
45. L. Yao and H.-K. Wen, “An Observer based adaptive PID controller,” in *Proc. Int. Conf. Modeling, Identification, and Control,* Shanghai, China, pp. TueB03.5.1-6, Jun. 26-29, 2011.
46. L. Yao and J.-N. Jiang, “Design of adaptive fuzzy controller with observer using modulated membership function,” in *Proc. Int. Conf. Modeling, Identification, and Control,* Shanghai, China, pp. TueB03.4.1-6, Jun. 26-29, 2011.
47. C. Liu, L. Yao, T. Chen, T. Lin and W. Wang, “Fault diagnosis for power transformers based on hybrid fuzzy dissolved gas analysis,” in *Proc. 2011 Eighth Int. Conf. Fuzzy Systems and Knowledge Discovery,* Shanghai, China, pp. 857-861, Jul. 26-28, 2011.
48. Y.-C. Chou and L. Yao, “Adaptive Fuzzy Sliding-Mode Controller with Gaussian Modulated Membership Function on Tracking Trajectory,” in *Proc. 2012 IEEE/ASME Int. Conf. Advanced Intelligent Mechatronics,* Kaohsiung, Taiwan, pp. 1017-1022, Jul. 11-14, 2012.
49. L. Yao and K.-S. Weng, “A type-2 fuzzy clustering algorithm,” in *Proc. The Fourth International Conf. Pervasive Patterns and Applications, Patterns 2012,* Nice, France, pp. 45-50, Jul. 22-27, 2012.
50. L. Yao and K.-S. Weng, “Combined probabilistic and possibilistic membership functions for a type-2 fuzzy clustering algorithm model ,” in *Proc. Int. Conf. Engineering and Technology Innovation, ICETI 2012,* Kaohsiung, Taiwan, Nov. 2-6, 2012, pp. N1020.1-4.
51. T. S. Tsai and L. Yao, “An approach to calculating rainfall for each transmission tower in geographic information system,” in *Proc. Int. Conf. on Geological and Environmental Sciences (ICGES),* Hong Kong, vol. 52, pp. 45-49, Jul. 2013.
52. T. B. Lin and L. Yao, “A real Time lightning locating approach for the transmission system in geographic information system,” in *Proc. Int. Conf. on Geological and Environmental Sciences (ICGES),* Hong Kong, vol. 52, pp. 50-54, Jul. 2013.
53. L. Yao, T.-S. Tsai, and R.-C. Chang, “Identification of high risk feature regions for transmission towers,” in *Proc. 3rd International Conf. Energy and Environmental Protection,* Xi’An, China, Apr. 26-28, 2014, pp. 4104-4109.
54. L. Yao, T.-S. Tsai, and R.-C. Chang, “Precipitation estimation at the site of transmission tower using geographic information system,” in *Proc. 3rd International Conf. Energy and Environmental Protection,* Xi’An, China, Apr. 26-28, 2014, pp. 3869-3874.
55. L. Yao, C.-J. Huang and W.-H. Lim, “An intelligent electric vehicle charging strategy for the hybrid type parking station,” in *Proc. International Conf. Environmental Science and Energy Engineering,* Phuket, Thailand, July 26-27, 2015, pp. 63-67.
56. L. Yao, C.-C. Lai, and W. H. Lim, “Home energy management system based on photovoltaic system,” in *Proc. 2015 IEEE International Conference on Data Science and Data Intensive Systems*, Sydney, Australia, Dec. 11-13, 2015, pp. 644-650.
57. L. Yao, Y.-Q. Chen, and W. H. Lim, “Internet of Things for Electric Vehicle: An improved decentralized charging scheme,” in *Proc. 2015 IEEE International Conference on Data Science and Data Intensive Systems*, Sydney, Australia, Dec. 11-13, 2015, pp. 651-658.
58. L. Yao, Z. Damiran, and W. H. Lim, “Direct load control of central air conditioning systems using fuzzy optimization,” in *Proc. 16th IEEE Int. Conf. Environment and Electrical and Engineering,* Florence, Italy, Jun. 7-10, 2016, pp. E3-TS5 660.1-660.6.
59. L. Yao, Z. Damiran, and W. H. Lim, “A Fuzzy Logic Based Charging Scheme for Electric Vechicle Parking Station” in *Proc. 16th IEEE Int. Conf. Environment and Electrical and Engineering,* Florence, Italy, Jun. 7-10, 2016, pp. E3-TS5 662.1-662.6.
60. L. Yao, J.-Y. Shen, and W. H. Lim, “Real-time energy management optimization for smart household,” in *Proc. The 9th IEEE Int. Conf. Internet of Things,* Chengdu, China, Dec. 16-19, 2016, pp. 09.4.1-0.4.6.
61. L. Yao, W. H. Lim, and C.-C. Lai, “Self-learning fuzzy controller-based energy management for smart home,” in *Proc.* *The 9th IEEE Int. Conf. Internet of Things,* Chengdu, China, Dec. 16-19, 2016, pp. 12.1.1-12.1.6.
62. L. Yao and T.-S. Tsai, “Novel hybrid scheme of solar energy forecasting for home energy management system,” in *Proc.* *The 9th IEEE Int. Conf. Internet of Things,* Chengdu, China, Dec. 16-19, 2016, pp. 12.4.1-12.4.6.
63. L. Yao, Z. Damiran, and W. H. Lim, “Energy management optimization scheme for smart home considering different types of appliances” in *Proc. 17th IEEE Int. Conf. Environment and Electrical Engineering,* Milan, Italy, Jun. 6-9, 2017, pp. A1-TS6 256.1-256.6.
64. L. Yaoand Kebba Jaiteh, “Multi-objective control of central air conditioning system” in *Proc. 17th IEEE Int. Conf. Environment and Electrical Engineering,* Milan, Italy, Jun. 6-9, 2017, pp. A1-TS6 274.1-274.6.
65. L. Yao, Y.-W. Wu, L. Yao, and Z. Z. Liao, “An integrated IMU and UWB sensor based indoor positioning system,” in *Proc. Int. Conf. Indoor Positioning and Indoor Navigation*, Sapporo, Japan, Sep. 18-21, 2017, pp. 1-8.
66. L. Yao, R. Nirati, K. W. Chien, and Z. Damiran, “Integrated energy management of photovoltaic panels and fuel cells for residential houses,," *Proc. IEEE Int. Conf. Recent Innovations In Electrical, Electronic and Communication Engineering,* Odisha, India, July 27-28, 2018, pp. 1-8.
67. L. Yaoand Jin-Hao Huang, **“**Optimization of Energy Saving Control for Air Conditioning System in Data Center,” in *Proc. Eighth International Conference on Advances in Computing, Communication and Information Technology - CCIT 2019*, Birmingham, United Kingdom, April 23-24, 2019, pp. 1-6.
68. Fazida H. Hashim and L. Yao, “An optimal load scheduling approach considering user preference and convenience level for smart homes,” in *Proc. 19th IEEE Int. Conf. Environment and Electrical Engineering,* Genoa, Italy, Jun. 11-14, 2019, pp. M3-TS4 229.1-229.6.

**(B2) National Conference Papers**

1. L. Yao, “Optimal sensor placement for modal identification of large space structure,” in *Proc. Conf. First National Defense Technology,* Taoyuan, Taiwan, pp. 103-109, Nov. 7-8, 1992.
2. L. Yao, “Application of the Genetic Algorithm to the parameter estimation of nonlinear filters,” in *Proc. 8-th National Conf. Technological and Vocational,* Pintung, Taiwan, pp. 165-174, March 19-20, 1993.
3. L. Yao, R.-L. Yen and G.-W. Huang, “Design of air-conditioning load control system via radio,” in *Proc. 14-th National Conf. Power Engineering,* Chung-Li, Taiwan, pp. 146-151, Dec. 17-18, 1993.
4. L. Yao, “Pattern recognition based on the Genetic Algorithm,” in *Proc. 9th National Conf. Technological and Vocational,* Yun-Lin, Taiwan, pp. 249-258, March 18-19, 1994.
5. L. Yao, R.-L. Yen and C.-W. Huang, “Studies on air-conditioning load control via radio load management system,” in *Proc. National Conf. Energy Saving*, Jia-Yi, Taiwan, pp. 37-54, May, 1994.
6. L. Yao, W.-P. Wang, R.-L. Yen and J.-H. Lin, “Strategy improvement of air-conditioning load control via radio system,” in *Proc. 16-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp. 658-662, Nov. 24-25, 1995.
7. L. Yao and W.-P. Wang, “Improvement of direct control of air-conditioning facilities via radio load management system,” in *Proc. 2-nd National Conf. on Cross-strait Air-conditioning Technology,* Taipei, Taiwan, pp. 7.1-7.8, Dec. 8-9, 1995.
8. L. Yao, W.-P. Wang, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Improving monitoring system for radio load management system via public telephone system,” in *Proc. National Conf. Energy Saving,* Kaosiung, Taiwan, pp. 35-45, May 9, 1996.
9. L. Yao, W.-P. Wang, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Customer solicitation strategy for direct load control,” in *Proc. National Conf. Energy Saving*, Kaosiung, Taiwan, pp. 76-88, May 9, 1996.
10. L. Yao, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Monitoring of radio load management system,” in Proc. 17-th National Conf. Power Engineering, Hsin-Chu, Taiwan, pp. 512-516, Nov. 8-9, 1996.
11. L. Yao, W.-P. Wang, J.-H. Lin, R.-L. Yen and W.-C. Chang, “Direct control of air-conditioning load in Chung-Ho and Yung-Ho districts via radio load management system,” in *Proc. National Conf. Energy Saving,* pp. 40-58, Jun. 12, 1997.
12. L. Yao, K.-C. Hsieh, R.-L. Yen, W.-C. Chang and J.-H. Lin, “Analysis of direct load control strategies,” in *Proc. 18-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 48-52, Nov. 8-9, 1997.
13. L. Yao, S.-T. Cheng, R.-L. Yen, W.-C. Chang and J.-H. Lin, “Direct control of air-conditioning load in metropolitan area,” in *Proc. 18-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 48-52, Nov. 8-9, 1997.
14. L. Yao, J.-C. Feng, W.-P. Wang, W.-H. Chao, L.-C. Wang and G.-J. Lee, “Economic analysis and promotion strategies of absorption chillers,” in *Proc. National Conf. Energy Saving,* Taoyuan, Taiwan, pp. 22-35, May 14, 1998.
15. S.-T. Cheng, L. Yao, R.-L. Yen, W.-C. Chang, T.-G. Lu, J.-H. Lin, “Cost and scheduling analyses of direct control system for air-conditioning load in Taipei Metropolitan area,” in *Proc. National Conf. Energy Saving,* Taoyuan, Taiwan, pp. 121-137, May 14, 1998.
16. L. Yao, J.-S. Lu, C.-C. Lin, G.-C. Tu, M.-H. Huang and C.-H. Yang, “Application of radio wide-area network to feeder automation,” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 238-242, Nov. 21-22, 1998.
17. S.-T. Cheng, L. Yao, R.-L. Yen, W.-C. Chang, T.-G. Lu and J.-H. Lin, “Improving control effect of radio load management system via cable system,” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 586-590, Nov. 21-22, 1998.
18. S.-T. Cheng, L. Yao, R.-L. Yen, W.-C. Chang, T.-G. Lu and J.-H. Lin, “Feasibility analysis of radio paging system using specific coding formats” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 253-257, Nov. 21-22, 1998.
19. Y.-C. Lee and L. Yao, “Software system design of radio load management system,” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 248-252, Nov. 21-22, 1998.
20. J.-H. Lin and L. Yao, “Hardware and firmware system design of radio load management system,” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 253-257, Nov. 21-22, 1998.
21. Y.-C. Lee, J.-H. Lin and L. Yao, “Application of load management via radio paging system,” in *Proc. 19-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 334-339, Nov. 21-22, 1998.
22. S.-T. Cheng, L. Yao, W.-C. Chang, R.-L. Yen and J.-H. Lin, “Load shedding control of centrifugal chillers,” in *Proc. National Conf. Energy Saving,* Tainan, Taiwan, pp. 176-189, May 20, 1999.
23. W.-P. Wang, M.-C. Ko and L. Yao “Studies on application of absorption chillers to demand side management,” in *Proc. National Conf. Energy Saving,* Tainan, Taiwan, pp. 76-95, May 20, 1999.
24. Y.-C. Lee, J.-H. Lin, L. Yao and Y.-F. Cheng, “Broadcasting of real-time electricity tariffs via radio paging system” in *Proc. 20-th National Conf. Power Engineering,* Taipei, Taiwan, pp.1205-1209, Nov. 20-21, 1999.
25. W.-C. Chang, L. Yao, R.-L. Yen, T.-G. Lu and J.-H. Lin, “Load shedding control of reciprocal and screw type chillers” in *Proc. 20-th National Conf. Power Engineering,* Taipei, Taiwan, pp.1210-1214, Nov. 20-21, 1999.
26. J.-H. Lin, Y.-C. Lee, L. Yao and Y.-F. Cheng, “Broadcasting system of load shedding message for interruptible customers” in *Proc. 20-th National Conf. Power Engineering,* Taipei, Taiwan, pp.1190-1194, Nov. 20-21, 1999.
27. L. Yao and W.-C. Chang, “Satisfaction analysis of central chiller customers for direct load control,” in *Proc. National Conf. Energy Saving,* Taichung, Taiwan, pp. 112-128, May 18, 2000.
28. L. Yao and W.-C. Chang, “Coordination of building automation system and direct control of central chillers” in *Proc. National Conf. Energy Saving,* Taichung, Taiwan, pp. 20-31, May 18, 2000.
29. L. Yao, J.-Y. Wang and Y.-F. Cheng, “Behavior fusion of auto-guided vehicle based on back-propagated neural networks,” in *Proc. 5-th National Conf. Artificial Intelligence,* Taipei, Taiwan, pp. 283-290, Nov. 17, 2000.
30. L. Yao and J.-J. Lee, “Application of radio paging system to demand control” in *Proc. 21-th National Conf. Power Engineering,* Taipei, Taiwan, pp.228-232, Nov. 18-19, 2000.
31. L. Yao and J.-W. Chang, “Application of radio networks to switching of capacitor bank” in *Proc. 21-th National Conf. Power Engineering,* Taipei, Taiwan, pp.238-242, Nov. 18-19, 2000.
32. L.-M. Chao, Y.-F. Cheng and L. Yao, “Application of Genetic Algorithm to QFT controller design,” in *Proc. National Conf. Automatic Control*, Taoyuan, Taiwan, pp. 763-768, Mar. 24, 2001.
33. G.-F. Gao and L. Yao, “Application of Genetic Algorithm to focusing controller design of optical disc drive,” in *Proc. National Conf. Automatic Control*, Taoyuan, Taiwan, pp. 757-762, Mar. 24, 2001.
34. L. Yaoand Chih-Heng Fang, “Hough fuzzy vertices detection algorithm for micro indentation hardness of materials,” in *Proc. 2001 14th IPPR Conf. Computer Vision, Graphics and Image Processing,* Pintung, Taiwan, Aug. 19-21, pp. 093.1- 093.8, 2001.
35. W.-C. Chang and L. Yao, “Studies on load shedding control of central chillers” in *Proc. 22-th National Conf. Power Engineering,* Kaosiung Taiwan, pp.1065-1069, Nov. 22-23, 2001.
36. W.-C. Chang and L. Yao, “Energy saving model for direct control of centrifugal chillers” in *Proc. 22-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp.512-516, Nov. 22-23, 2001.
37. T.-B. Huang and L. Yao, “Software design of two-way load control for high-voltage customers’ broadband network based multi-services system” in *Proc. 22-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp.571-575, Nov. 22-23, 2001.
38. S.-L. Ning and L. Yao, “Firmware and hardware design of two-way load control for high-voltage customers’ broadband network based multi-services system” in *Proc. 22-th National Conf. Power Engineering,* Kaosiung Taiwan, pp.566-570, Nov. 22-23, 2001.
39. H.-Y. Pan and L. Yao, “Distributor design of two-way load control for high-voltage customers’ broadband network based multi-services system” in *Proc. 22-th National Conf. Power Engineering,* Kaosiung Taiwan, pp.561-565, Nov. 22-23, 2001
40. C.-C. Lin and L. Yao, “Fuzzy modeling based on ellipsoidal clustering,” in *Proc. National Conf. Fuzzy Theory and Applications,* Taoyuan, Taiwan, pp. 281-285, Nov. 23-24, 2001.
41. G.-S. Weng and L. Yao, “Learning of decision regions based on fuzzy clustering and modulated ellipsoids” in *Proc. National Conf. Fuzzy Theory and Applications,* Taoyuan, Taiwan, pp. 576-581, Nov. 23-24, 2001.
42. J.-D. Chang and L. Yao, “Obstacle detection based on laser scanner,” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. TP186.1-186.6, Mar. 26, 2002.
43. C.-C. Lin and L. Yao, “Synthesis of Volterra filter by genetic programming” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. TP185.1-185.6, Mar. 26, 2002.
44. G.-F. Gao and L. Yao, “Position control of MP3 optical disc drive” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. TP184.1-184.6, Mar. 26, 2002.
45. L. Yao and W.-C. Chang, “Design of linear load shedding control of centrifugal chillers” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. TP187.1-187.6, Mar. 26, 2002.
46. G.-S. Weng and L. Yao, “Fuzzy modeling of Genetic Algorithm based ellipsoidal learning” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. TP188.1-188.6, Mar. 26, 2002.
47. R.-L. Yen, T.-G. Lu, W.-C. Chang and L. Yao, “Direct control of split-type air-conditioners in convenient stores,” in *Proc. National Conf. Energy Saving,* Tainan, Taiwan, pp. 369-389, May 30, 2002.
48. Y.-G. Chen and L. Yao, “Outage detection system based on broadband networks,” in *Proc. 23-th National Conf. Power Engineering,* Taoyuan, Taiwan, pp. D3-6.1 – D3-6.5, Dec. 14-15, 2002.
49. H.-Y. Pan and L. Yao, “Design of data distribution for broadband network based two-way monitoring and control system,” in *Proc. 23-th National Conf. Power Engineering,* Taoyuan, Taiwan, pp. D3-1.1 – D3-1.5, Dec. 14-15, 2002.
50. W.-C. Chang and L. Yao, “Direct control of air-conditioning load in convenient stores via radio paging system,” in *Proc. 23-th National Conf. Power Engineering,* Taoyuan, Taiwan, pp. B1-5.1 – B1-5.5, Dec. 14-15, 2002.
51. G.-S. Weng and L. Yao, “Weighted TSK fuzzy modeling based on Genetic Algorithm based ellipsoidal learning,” in *Proc. National Conf. Fuzzy Theory and Applications,* Hsinchu, Taiwan, pp. A3.07-A3.12, Dec. 5-6, 2002.
52. D.-C. Liu and L. Yao, “Design of PID controller for high order or time-delayed system,” in *Proc. National Conf. Fuzzy Theory and Applications,* Hsinchu, Taiwan, pp. A2.30-A2.35, Dec. 5-6, 2002.
53. C.-H. Wu and L. Yao, “Fuzzy modeling based on modulated membership functions,” in *Proc. National Conf. Fuzzy Theory and Applications,* Hsinchu, Taiwan, pp. C3.31-A3.36, Dec. 5-6, 2002.
54. C.-C. Lin and L. Yao, “Fuzzy modeling based on partitions of input and output space,” in *Proc. National Conf. Fuzzy Theory and Applications,* Hsinchu, Taiwan, pp. C3.25-C3.30, Dec. 5-6, 2002.
55. Y.-H. Chen, Y.-G. Chen and L. Yao, “Adaptive design of Long distance track seeking control for optical disc dirve,” in *Proc. National Conf. Automatic Control*, Chung-Li, Taiwan, pp. 572-577, Mar. 13-14, 2003.
56. Y.-G. Chen and L. Yao, “Long distance track seeking control for DVD-ROM,” in *Proc. National Conf. Automatic Control*, Chung-Li, Taiwan, pp. 1249-1254, Mar. 13-14, 2003.
57. S.-H. Chang, G.-S. Weng and L. Yao, “Design of track following controller for automatic guided vehicle,” in *Proc. National Conf. Automatic Control*, Chung-Li, Taiwan, pp. 864-869, Mar. 13-14, 2003.
58. J.-S. Yang and L. Yao, “Design of home energy management system,” in *Proc. National Conf. Customer Electronics*, Tainan, Taiwan, pp. d0031.1-d0031.6, Nov. 27-28, 2003.
59. C.-H. Lin and L. Yao, “Design of wide-area street lights monitoring and control” in *Proc. National Conf. Customer Electronics*, Tainan, Taiwan, pp. c0061.1-c0061.6, Nov. 27-28, 2003.
60. S. H. Chang and L. Yao, “Track following and obstacle avoidance control for automatic guided vehicle,” in *Proc. National Conf. Artificial Intelligence, Fuzzy System and Gray System*, Taipei, Taiwan, B065.1-B065.6, Dec. 4-6, 2003.
61. C.-C. Lin, T.-H. Hsu and L. Yao, “Application of Genetic Algorithm to optimization of electricity tariff for demand bidding,” in *Proc. National Conf. Artificial Intelligence, Fuzzy System and Gray System*, Taipei, Taiwan, A137.1-A137.6, Dec. 4-6, 2003.
62. D.-C. Liu and L. Yao, “Design of PID controller for time-delayed systems,” in *Proc. National Conf. Artificial Intelligence, Fuzzy System and Gray System*, Taipei, Taiwan, B063.1-B063.6, Dec. 4-6, 2003.
63. Y.-G. Chen and L. Yao, “Design electricity tariff calculation mechanism for demand exchange system,” in *Proc. 24-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 208-212, Dec. 12-13, 2003.
64. W.-C. Chan, T.-H. Hsu and L. Yao, “Design of demand bidding for demand exchange system,” in *Proc. 24-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 213-217, Dec. 12-13, 2003.
65. Y.-F. Lee and L. Yao, “Optimal design of single-loop QFT controller,” in *Proc. National Conf. Automatic Control*, Chang-Hua, Taiwan, pp. 1177-1182, Mar. 26-27, 2004.
66. B.-C. Lian and L. Yao, “Obstacle avoidance based on fuzzy map for automatic guided vehicle,” in *Proc. National Conf. Automatic Control*, Chang-Hua, Taiwan, pp. 864-869, Mar. 26-27, 2004.
67. B.-C. Huang and L. Yao, “Automated design of fuzzy track seeking controller for DVD-ROM,” in *Proc. National Conf. Automatic Control*, Chang-Hua, Taiwan, pp. 858-863, Mar. 26-27, 2004.
68. G.-S. Yang and L. Yao, “Design and implementation of home energy management system,” in *Proc. National Conf. Energy Saving*, Taipei, Taiwan, pp. 228-237, May 19, 2004.
69. C.-D. Huang and L. Yao, “Clustering of incomplete data based on Genetic Algorithm based ellipsoidal learning,” in *Proc. National Conf. Fuzzy Theory and Applications,* Yi-Lan, Taiwan, pp. XIII.c1381.1-6, Nov. 12-13, 2004.
70. T.-H. Hsu and L. Yao, “Design of classifier by block-type Genetic Programming,” in *Proc. National Conf. Fuzzy Theory and Applications,* Yi-Lan, Taiwan, pp. XIII.c1383.1-6, Nov. 12-13, 2004.
71. B.-C. Lian and L. Yao, “Obstacle avoidance based on fuzzy map for automatic guided vehicle,” in *Proc. National Conf. Fuzzy Theory and Applications,* Yi-Lan, Taiwan, pp. III.c1382.1-6, Nov. 12-13, 2004.
72. H.-R. Lu and L. Yao, “Design of gateway for home energy management system,” in *Proc. 25-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 238-243, Nov. 19-20, 2004.
73. W.-C. Chan and L. Yao, “Design and implementation of demand bidding in demand exchange system,” in *Proc. 25-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 250-254, Nov. 19-20, 2004.
74. Y.-S. Ho and L. Yao, “Fuzzy tracking control for automatic guided vehicle,” in *Proc. National Conf. Fuzzy Theory and Applications,* Kaosiung, Taiwan, pp. c299.1-6, Sep. 30-Oct. 1, 2005.
75. P.-R. Kuo and L. Yao, “Fuzzy gain controller for network control,” in *Proc. National Conf. Fuzzy Theory and Applications,* Kaosiung, Taiwan, pp. c106.1-6, Sep. 30-Oct. 1, 2005.
76. C.-C. Lin and L. Yao, “Diagnosis of SELDI-TOF peaks by fuzzy inference,” in *Proc. National Conf. Fuzzy Theory and Applications,* Kaosiung, Taiwan, pp. c307.1-6, Sep. 30-Oct. 1, 2005.
77. M.-D. Lee and L. Yao, “Design of focusing and track following roust controller for DVD-ROM,” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. C00009d.1-C00009d.6, Nov. 18-19, 2005.
78. F.-J. Yo and L. Yao, “Obstacle avoidance and navigation for automatic guided vehicle based on image and behavior fusion,” in *Proc. National Conf. Automatic Control*, Tainan, Taiwan, pp. F00015d.1-F00015d.6, Nov. 18-19, 2005.
79. H.-R. Lu and L. Yao, “Two-way load control based on broadband network,” in *Proc. 26-th National Conf. Power Engineering,* Chung-Li, Taiwan, pp. 1050-1055, Dec. 9-10, 2005.
80. W.-T. Tseng and L. Yao, “Switching of capacitor bank via mobile communication system,” in *Proc. 26-th National Conf. Power Engineering,* Chung-Li, Taiwan, pp. 1045-1049, Dec. 9-10, 2005.
81. L.-H. Lu and L. Yao, “Optimal load dispatch for aggregated air-conditioning load,” in *Proc. National Conf. Energy Economy*, Taipei, Taiwan, Nov. 17, pp. 1-23, 2006.
82. H.-R. Lu, L. Yao and W.-H. Kao, “Design of energy management system for demand response,” in *Proc. 27-th National Conf. Power Engineering,* Hsinchu, Taiwan, pp. PD1.10.1 - PD1.10.5, Dec. 22-23, 2006.
83. H.-R. Lu, L. Yao and J.-T Yang, “Design of emergent load shedding for demand response,” in *Proc. 27-th National Conf. Power Engineering,* Hsinchu, Taiwan, pp. PD1.11.1 – PD1.11.5, Dec. 22-23, 2006.
84. G.-Y. Chen, L. Yao, W.-H. Chen, R.-L. Yen, Y.-S. Chang and G.-T. Lin, “Design of load monitoring and diagnosis system for distribution transformer,” in *Proc. 27-th National Conf. Power Engineering,* Hsinchu, Taiwan, pp. OC2.3.1 - OC2.3.5, Dec. 22-23, 2006.
85. Y.-S. Kuo, L. Yao, J.-N. Tsai and J.-H. Lin, “Design of remote measuring of insulation resistance for street lights,” in *Proc. 27-th National Conf. Power Engineering,* Hsinchu, Taiwan, pp. OD5.5.1 - OD5.5.5, Dec. 22-23, 2006.
86. J.-C. Chen and L. Yao, “Application of Genetic Algorithm with weighted genes to classification of electric loads,” in *Proc. 27-th National Conf. Power Engineering,* Hsinchu, Taiwan, pp. PD1.9.1 - PD1.9.5, Dec. 22-23, 2006.
87. K.-S. Weng and L. Yao, “An Evolutionary Type-2 Fuzzy Classifier with Adaptive Ellipsoids,” in *Proc. National Conf. Fuzzy Theory and Applications*, Taipei, Taiwan, pp. D3-3-1~D3-3-6, Dec. 14-15, 2006.
88. P.-R. Guo and L. Yao, “A Fuzzy Gain Tuner for Networked Automatic Guided Vehicle Control System," in *Proc. National Conf. Fuzzy Theory and Applications*, Taipei, Taiwan, pp. B4-2-1~B4-2-6, Dec. 14-15, 2006.
89. Z.-W. Lin andL. Yao, “Tracking Control for Automatic Guided Vehicle Based on Sonar Sensor Fusion,” in *Proc. National Conf. Fuzzy Theory and Applications*, Taipei, Taiwan, pp. B4-4-1~B4-4-7, Dec. 14-15, 2006.
90. T. Yang and L. Yao**,** “A Fuzzy Classifier with Adaptive Learning of Norm Inducing Matrix,” in *Proc. National Conf. Automatic Control*, Taipei, Taiwan, pp. 1255-1260, Nov. 10-11, 2006.
91. J.-H. Chen and L. Yao, “Design of outage detection system for distribution transformers,” in *Proc. 28-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp. C14.7-1~C14.7-5, Dec. 7-8, 2007.
92. W.-T. Tseng and L. Yao, “Switching of capacitor bank via mobile communication,” in *Proc. 28-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp. B14.4-1~B14.4-5, Dec. 7-8, 2007.
93. S.-J. Lin and L. Yao, “Surveillance and inspection system for substation transformers,” in *Proc. 28-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp. B14.3-1~B14.3-5, Dec. 7-8, 2007.
94. S.-J. Lin and L. Yao, “Design of recorder for substation transformers,” in *Proc. 28-th National Conf. Power Engineering,* Kaosiung, Taiwan, pp. C14.6-1~C14.6-5, Dec. 7-8, 2007.
95. G.-W. Peng and L. Yao, “Gain tuning of network based PID controller,” in *Proc. National Conf. Fuzzy Theory and Applications*, Yun-Lin, Taiwan, pp. A1.1.49-A1.1.54, Dec. 14-15, 2007.
96. T. Yang and L. Yao, “Fuzzy clustering of incomplete data by adaptive learning of decision regions,” in *Proc. National Conf. Fuzzy Theory and Applications*, Yun-Lin, Taiwan, pp. C1.2.427-C1.2.432, Dec. 14-15, 2007.
97. L. Yao and H.-R. Lu, “Optimal load shedding of central chillers for demand response,” in *Proc. National Conf. Energy Saving*, Kaosiung, Taiwan, pp. 205-216, May 16, 2008.
98. S.-S. Hsu, Suhandry Salim and L. Yao, “3D positioning system by sensor network,” in *Proc. National Conf. System Science and Engineering,* Yi-Lan, Taiwan, pp. P0453.1-6, Jun. 6-7, 2008.
99. K.-C. Yang and L. Yao, “Improvement of focusing control for car used optical disc drive by H∞ hybrid sensitivity,” in *Proc. National Conf. System Science and Engineering,* Yi-Lan, Taiwan, pp. P0406.1-6, Jun. 6-7, 2008.
100. J.-N. Giang, L. Yao and W.-Y. Wang, “Observer based direct adaptive controller with modulated membership functions,” in *Proc. National Conf. System Science and Engineering,* Yi-Lan, Taiwan, pp. P0352.1-6, Jun. 6-7, 2008.
101. H.-K. Weng, L. Yao and W.-Y. Wang, “Direct adaptive PID controller for nonlinear systems,” in *Proc. National Conf. System Science and Engineering,* Yi-Lan, Taiwan, pp. P0545.1-6, Jun. 6-7, 2008.
102. Y.-S. Kuo and L. Yao, “Design of security system for electric cable network,” in *Proc. 29-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 949-953, Dec. 5-6, 2008.
103. J.-M. Lin, L. Yao and S.-J. Lin, “Design of man-hole and hand-hole positioning and inspection system,” in *Proc. 29-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 513-517, Dec. 5-6, 2008.
104. J.-C. Yen, L. Yao and J.-H. Chen, “Outage and fault detection system for distribution system,” in *Proc. 29-th National Conf. Power Engineering,* Tainan, Taiwan, pp. 959-963, Dec. 5-6, 2008.
105. H.-S. Yang and L. Yao, “Real-time positioning and map building,” in *Proc. National Conf. System Science and Engineering,* Taipei, Taiwan, pp. A154-159, Jun. 25-26, 2009.
106. Y.-L. Chu and L. Yao, “Multi-AGV formation reconfiguration based on real-time images,” in *Proc. National Conf. System Science and Engineering,* Taipei, Taiwan, pp. C1058-1063, Jun. 25-26, 2009.
107. J.-D. Liu and L. Yao, “Design of intelligent 3D remote control,” in *Proc. National Conf. System Science and Engineering,* Taipei, Taiwan, pp. C1076-1081, Jun. 25-26, 2009.
108. L. Yao and T.-B. Lin, “Design of substation facility management system,” in *Proc. 30-th National Conf. Power Engineering,* Taoyuan, Taiwan, pp. O008.1-5, Nov. 28-29, 2008.
109. T. Chen, G.-R. Huang and J.-S. Liu and L. Yao, “Application of data mining to transformer dissolved gas analysis,” in *Proc. 32-th National Conf. Power Engineering,* New Taipei City, Taiwan, pp. 12-16, Dec. 2-3, 2011.
110. L. Yao, W.-Y. Hsu and C.-S. Chen, “Optimal load shedding control for central chillers,” in *Proc. 32-th National Conf. Power Engineering,* New Taipei City, Taiwan, pp. 7-11, Dec. 2-3, 2011.
111. G.-M. Chiu, G.-Y. Ho and L. Yao, “Three dimensional positioning based on two waves with different transmission velocities,” in *Proc. National Conf. System Science and Engineering,* Nan-Tou, Taiwan, pp. 0315.1-5, Jun. 17-18, 2011.
112. C.-G. Lin, G.-Y. Ho and L. Yao, “Track following control based on indoor positioning system,” in *Proc. National Conf. System Science and Engineering,* Nan-Tou, Taiwan, pp. 0125.1-5, Jun. 17-18, 2011.
113. Y.-C. Chen and L. Yao, “Active ,” in *Proc. National Conf. System Science and Engineering,* Nan-Tou, Taiwan, pp. 0125.1-5, Jun. 17-18, 2011.
114. L. Yao, G.-W. Chou and G.-K. Chang, “Energy saving system for the air-conditioners in base transceiver station,” in *Proc. National Conf. Fuzzy Theory and Applications*, Taichung, Taiwan, pp. 32-37, Nov. 16-18, 2012.
115. T.-S. Tsai, L. Yao, R.-G. Chang and C.-H. Hsieh, “Rainfall estimation scheme for electrical transmission system,” in *Proc. 33-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 2196-2200, Dec. 7-8, 2012.
116. C.-S. Chen and L. Yao, “Optimal charging strategy for electric vehicles,” in *Proc. 33-th National Conf. Power Engineering,* Taipei, Taiwan, pp. 2283-2288, Dec. 7-8, 2012.
117. W.-C. Wang and L. Yao, “Time synchronization scheme for sensor network,” in *Proc. National Conf. System Science and Engineering,* New Taipei City, Taiwan, pp. 562-566, Jun. 8-9, 2013.
118. L. Yao and C.-J. Hong, “Moving control of robot fish,” in *Proc. National Conf. System Science and Engineering,* New Taipei City, Taiwan, pp. 458-463, Jun. 8-9, 2013.
119. J.-R. Huang, C.-S. Chen and L. Yao, “Optimal charging scheduling for electric vehicles,” in *Proc. National Conf. System Science and Engineering,* New Taipei City, Taiwan, pp. 525-529, Jun. 8-9, 2013.
120. L. Yao, Y.-H. Lin, J.-H. Chang, and G.-C. Lai, “Energy management system for real-time price,” in *Proc.* *National Conf. Power Electronics,* Taipei, Taiwan, pp. 104-108, Sep. 4, 2014.
121. L. Yao, C.-K. Chang, and P.-H. Huang, “Integrated control of air conditioning and lighting,” in *Proc.* *National Conf. Power Electronics,* Taipei, Taiwan, pp. 487-491, Sep. 4, 2014.
122. L. Yao and Y.-H. Lee, “Energy management for combined heat, cooling and power system,” in *Proc.* *National Conf. Power Electronics,* Taipei, Taiwan, pp. 515-519, Sep. 4, 2014.
123. L. Yao and R.-W. Chou, “Indoor positioning and navigation based on KINECT,” in *Proc. National Conf. Smart Life Technology,* Kaosiung, Taiwan, pp. 142-149, June 20-21, 2014.
124. L. Yao and H.-W. Cheng, “Optimal control of charging and discharging for electric vehicles in the smart grid,” in *Proc. National Conf. Smart Life Technology,* Kaosiung, Taiwan, pp. 135-141, June 20-21, 2014.
125. L. Yao and Y.-C. Chen, “Optimization of charging scheduling for electric vehicles using dispersed computation approach,” in *Proc. National Conf. System Science and Engineering,* Taipei, Taiwan, pp. C1076-1081, Jul. 29-30, 2015.
126. L. Yao and H.-J. Lin, “Analysis of lighting locations in Taiwan based on DBSCAN and Google Earth,” in *Proc. Conf. Taiwan Geographic Information,* Taichung, Taiwan, Jun. 29-30, 2015.
127. L. Yao and Y.-C. Chen, “Charging management for electric vehicles using distributed optimization approach,” in *Proc. National Conf. System Science and Engineering,* Taipei, Taiwan, Jul. 29-30, 2015.
128. L. Yao and H.-Z. Lin, “Lighting analysis in Taiwan using DBSCAN and Google Earth,” in *Proc. National Conf. Geography Information System,* Taichung, Taiwan, Jun. 29-30, 2015.
129. L. Yao, C.-C. Lai and J.-Y. Shen, “Smart home energy conservation and management system for dynamic pricing,” in *Proc. 37-th National Conf. Power Engineering,* Taichung, Taiwan, Dec. 10-11, 2016.
130. T.-B. Lin and L. Yao, “Risk assessment of lightning flashover for transmission lines based on genetic algorithm,” in *Proc. 37-th National Conf. Power Engineering,* Taichung, Taiwan, Dec. 10-11, 2016.

**(C) Patents**

1. L. Yao, *Structure of receiving device that receives signals from radio paging system for the load management in power system,* Utility Model Patent, Patent number 164194, Nov. 11, 2000 to Nov. 19, 2018.
2. L. Yao, Methods and systems for load management in power system, Invention Patent, Patent number 411649, Nov. 11, 2000 to Nov. 19, 2018.
3. L. Yao, Y.-C. Lee and J.-H. Lin, Methods and devices transmitting load shedding message from power supply side to demand side, Invention Patent, Patent number 136707, Jun. 23, 2001 to Nov. 18, 2019.
4. L. Yao, Y.-C. Lee and J.-H. Lin, Methods and devices transmitting electricity tariffs, Invention Patent, Patent number 137326, Aug. 1, 2001 to Nov. 18, 2019.
5. L. Yao, A.-M. Wang and L.-M. Chao, Method and system for long distance track seeking in optical disc drive, Invention Patent, Patent number 151603, Mar. 11, 2002 to Dec. 18, 2020.
6. L. Yao and J.-H. Fang, Edge detection scheme for hardness calculation, Invention Patent, Patent number 159290, Jun. 11, 2002 to Aug. 18, 2021.
7. L. Yao, T.-B. Huang and S.-L. Nin, Remote data acquisition schemes and device via radio paging system, Invention Patent, Patent number 169827, Jan. 1, 2003 to Sep. 12, 2021.
8. L. Yao and R.-L. Yen, A scheme remotely adjusting temperature setting to air conditioners, Invention Patent, Patent number 173893, Mar. 21, 2003 to Apr. 17, 2022.
9. L. Yao and R.-L. Yen, A load management scheme using demand controllers, Invention Patent, Patent number 190145, Nov. 11, 2003 to Apr. 24, 2022.
10. L. Yao and W.-C. Chang, Scheme and system for demand side two-way load control, Invention Patent, Patent number I237169, Aug. 1, 2005 to Sep. 16, 2024.
11. L. Yao and C.-W. Wang, Control device for switching oil breaker and street light breaker, Utility Model Patent, Patent number M268178, Jun. 21, 2005 to Dec. 23, 2024.
12. L. Yao and C.-H. Lin, Scheme and system for wide area street light monitoring, Invention Patent, Patent number 253028, Apr. 11, 2007 to Mar. 23, 2024.
13. L. Yao and C.-H. Lin, Scheme and system for measuring wide area street light insulation resistance, Invention Patent, Patent number I264546, Oct. 21, 2006 to Mar. 23, 2024.
14. L. Yao and T. Wang, Structure of covering box for placing RFID tag, Utility Model Patent, Patent number M312430, Sep. 18, 2006 to Apr. 18, 2025.
15. L. Yao, C.-W. Wang and C.-S. Shen, Inspection and maintenance scheme for man holes and hand holes, Invention Patent, Patent number I263723, Oct. 11, 2006 to Jan. 17, 2025.
16. L. Yao and W.-C. Chang, Device for sensing and notifying power supplying status, Invention Patent, Patent number I280719, May. 1, 2007 to Sep. 16, 2024.
17. L. Yao and H.-R. Lu, Silent ring device, Invention Patent, Patent number I271093, Jan. 11, 2007 to Feb. 22, 2025.
18. L. Yao and B.-C. Huang, Scheme and system for automatic learning control parameters for optical disc drives, Invention Patent, Patent number I270757, Jan. 11, 2007 to Apr. 18, 2025.
19. L. Yao and H.-Y. Pan, Scheme and system for sensing status of regional power supply, Invention Patent, Patent number I256187, Jun. 1, 2007 to Sep. 16, 2024.
20. L. Yao and H.-R. Lu, Optimization scheme for load shedding, Invention Patent, Patent number I272465, Feb. 1, 2007 to Dec. 14, 2025.
21. L. Yao and G.-F. Chang, Structure of man hole cover for the convenience of inspection and maintenance, Invention Patent, Patent number I350331, Oct. 11, 2011 to Dec. 14, 2029.
22. L. Yao, G.-H. Chen and H.-R. Lu, Scheme and system for automatic outage detection, Invention Patent, Patent number I354238, Dec. 11, 2011 to Nov. 21, 2027.
23. L. Yao and Y.-S. Kuo, Scheme and system for power grid fault detection and monitoring, Invention Patent, Patent number I358544, Feb. 21, 2012 to Jan. 29, 2028.
24. H.-B. Cheng and L. Yao, Scheme and system for temperature control and load shedding in cooling space, Invention Patent, Patent number I358544, Aug. 21, 2013 to Apr. 7, 2031.
25. L. Yao and G.-W. Chou, Scheme for temperature control in mobile communication base station, Patent pending, Apply number 101120266.
26. L. Yao, J.-M. Chiu, and G.-Y. Ho, Distance measurement scheme and system, Invention Patent, Patent number I432761, Apr. 1, 2014 to Mar. 21, 2031.
27. H.-B. Cheng, C.-R. Wu, F.-H. Chen, and L. Yao, Monitoring scheme and system for refrigeration facilities, Invention Patent, Patent number I432686, Apr. 1, 2014 to Aug. 2, 2031.
28. L. Yao, Y.-C. Wang, J.-H. Chen, and Y.-S. Wang, Control of networking rights and Internet system, Invention Patent, Patent number I615002, Feb. 11, 2018 to Nov. 1, 2036.
29. L. Yao, S.-H. Wang, C.-K. Huang, An energy saving control approach and system in a medium or large space, Invention Patent, Patent number I670451, Sep. 1, 2019 to Aug. 30, 2038.

**(D)Projects**

1. Principal Investigator, “Taiwan High Speed Rail Power Facility Maintenance and Management System II,” Grant of Taiwan High Speed Rail Corporation, Grant No. C4-19-001, Aug. 2019 to Jul. 2021.
2. Principal Investigator, “Optimal shedding control of large quantity of small air conditioners in wide area for demand response,” Grant of Ministry of Science and Technology, Grant No. MOST 107-2221-E-027-086-MY3, Aug. 2018 to Jul. 2021.
3. Principal Coinvestigator, “Studies of impacts to unbalanced distribution system with a large quantities of renewable energy and load demands,” Grant of Ministry of Science and Technology, MOST 107-2221-E-110-062, Aug. 2018 to Jul. 2019.
4. Principal Investigator, “Customer flow detection, analysis and forecast using artificial intelligence,” Grant of ADE Technology Inc., Aug. 2018 to Jul. 2019. (Technology Transfer)
5. Principal Investigator, “Control of small flying drone,” Grant of ADE Technology Inc., Mar. 2018 to Jul. 2018. (Technology Transfer)
6. Principal Investigator, “Intelligent cloud for energy saving,” Grant of APEX International, Nov. 2017 to Jun. 2018.
7. Principal Investigator, “Energy saving control,” Grant of ADE Technology Inc., Sep. 2017 to Aug. 2018.
8. Principal Investigator, “Optimal demand solicitation and control strategy for aggregator in demand bidding,” Grant of Ministry of Science and Technology, Grant No. MOST 106-2221-E-027-089, Aug. 2017 to Jul. 2018.
9. Principal Coinvestigator, “Development of commercial demand and adjustment of unbalanced networks in new frame of generation,” Grant of Ministry of Science and Technology, Grant No. MOST 106-2221-E-110-063, Aug. 2017 to Jul. 2018.
10. Principal Investigator, “Intelligent campus and energy saving system in Taipei Tech.,” Ministry of Interior Affairs, Jan. 2017 to Dec. 2017.
11. Principal Investigator, “Taiwan High Speed Rail Power Facility Maintenance and Management System,” Grant of Taiwan High Speed Rail Corporation, Grant No. C4-16-008, Nov. 2016 to Apr. 2018.
12. Principal Investigator, “Planning and installation of energy saving system for data center and computer networks on university campus (3/3),” Grant of Ministry of Science and Technology, Grant No. MOST 106-3113-E-027-003, Jan. 2017 to Dec. 2017.
13. Principal Investigator, “Planning and installation of energy saving system for data center and computer networks on university campus (2/3),” Grant of Ministry of Science and Technology, Grant No. MOST 105-3113-E-027-004, Jan. 2016 to Dec. 2016.
14. Principal Investigator, “Planning and installation of energy saving system for data center and computer networks on university campus (1/3),” Grant of Ministry of Science and Technology, Grant No. MOST 104-3113-E-027-001, Jan. 2015 to Dec. 2015.
15. Principal Investigator, “Smart home energy management system for real-time pricing” Grant of Ministry of Science and Technology, Grant No. MOST 103-2221-E-027-050-MY3, Aug. 2014 to Jul. 2017.
16. Principal Investigator, “Smart distribution and energy management for micro grid,” Grant of Ministry of Science and Technology, Grant No. MOST 103-2221-E-110-046-MY3, Aug. 2014 to Jul. 2017.
17. Principal Investigator, “Development of surveillance system for transmission system using buffering analysis of geometry information system,” Grant of Taiwan Power Company, Sep. 2013 to Feb. 2015.
18. Principal Investigator, “Design and implementation of campus energy saving system for Taipei Tech.,” Grant of Ministry of Science and Technology, Grant No. MOST 102-3113-P-027-005, Jul. 2013-Jun. 2014.
19. Principal Investigator, “Studies and implementation of intelligent charging management system of electric vehicles for parking lot,” Grant of Ministry of Science and Technology, Grant No. MOST 102-2221-E-027-036, Aug. 2013 to Jul. 2014.
20. Principal Investigator, “Intelligent energy monitoring and control system for centrifugal chillers,” Grant of Dong-Jo Energy Technology Company, Jan. 2013 to Dec. 2013.
21. Principal Investigator, “Study of a solid oxide fuel cell based adsorption chiller composite system,” Grant of Ministry of Science and Technology, Grant No. MOST 102-3113-P-027-003, Jan. 2013 to Dec. 2013.
22. Principal Investigator, “Studies on micro wireless transducer,” Grant of Nippon Aleph Company, Jan. 2012 to Dec. 2012.
23. Principal Investigator, “Design and implementation of air-conditioning energy saving system for base transceiver station,” Grant of Ministry of Science and Technology, Grant No. MOST 101-2623-E-027-001-ET, Jan. 2012 to Dec. 2012.
24. Principal Coinvestigator, “Studies on energy saving carbon-dioxide reduction for power system (3/3),” Grant of Ministry of Science and Technology, Jan. 2012 to Dec. 2012.
25. Principal Investigator, “Studies on energy saving and carbon-dioxide reduction for regional air conditioning load (3/3),” Grant of Ministry of Science and Technology, Jan. 2012 to Dec. 2012.
26. Principal Investigator, “Design and implementation of transmission facility maintenance and management system,” Grant of Taiwan Power Company, Sep. 2011 to Feb. 2013.
27. Principal Coinvestigator, “Studies on energy saving carbon-dioxide reduction for power system (2/3),” Grant of Ministry of Science and Technology, Jan. 2011 to Dec. 2011.
28. Principal Investigator, “Studies on energy saving and carbon-dioxide reduction for regional air conditioning load (2/3),” Grant of Ministry of Science and Technology, Jan. 2011 to Dec. 2011.
29. Principal Investigator, “Development of university regional 3C academia-industry cooperation,” Grant of Ministry of Education, Jan. 2011 to Dec. 2011.
30. Principal Coinvestigator, “Design, analysis, and implementation of a micro grid (2/2),” Grant of Ministry of Science and Technology, Jan. 2011 to Dec. 2011.
31. Principal Investigator, “Design and implementation of communication and control networks for a micro grid, (2/2)” Grant of Ministry of Science and Technology, Jan. 2011 to Dec. 2011.
32. Principal Investigator, “Monitoring and control system for a commercial energy saving system,” Grant of Dong-Jo Energy Technology Company, Jul. 2010 to Apr. 2011.
33. Principal Investigator, “Design of substation fault classifier based on classification belief,” Grant of Ministry of Science and Technology, Grant No. NSC 99-2221-E-027-112-MY3, Aug. 2010 to Jul. 2013.
34. Principal Investigator, “Automatic Diagnosis System of Electrical Equipment using Infrared Thermography,” Grant of Ministry of Science and Technology, Grant No. NSC 99-2622-E-027-009-CC3, Jul. 2010 to Jun. 2011.
35. Principal Coinvestigator, “Integration of database and design of expert system for the substation facility maintenance and management system,” Grant of Taiwan Power Company, Jul. 1010 to Dec. 2011.
36. Principal Investigator, “Development of university regional 3C academia-industry cooperation,” Grant of Ministry of Education, Jan. 2010 to Dec. 2010.
37. Principal Investigator, “Design of energy saving for enterprise headquarter based on Web Access,” Grant of Advantech Company, Apr. 2010 to Nov. 2010.
38. Principal Coinvestigator, “Studies on energy saving carbon-dioxide reduction for power system (1/3),” Grant of National Science Council, Grant No. NSC 98-2221-E-110-079, Nov. 2009 to Dec. 2010.
39. Principal Investigator, “Studies on energy saving and carbon-dioxide reduction for regional air conditioning load (1/3),” Grant of National Science Council, Grant No. NSC 98-3114-P-110-002, Nov. 2009 to Dec. 2010.
40. Principal Coinvestigator, “Design, analysis, and implementation of a micro grid (1/2),” Grant of National Science Council, Grant No. NSC 98-3114-E-007-004, Nov. 2009 to Dec. 2010.
41. Principal Investigator, “Design and implementation of communication and control networks for a micro grid, (1/2)” Grant of National Science Council, Grant No. NSC 98-3114-E-007-004, Nov. 2009 to Dec. 2010.
42. Principal Investigator, “Design and implementation of fault locator for underground electric distribution networks,” Grant of National Science Council, Grant No. NSC 98-2262-E-027-015-CC3, Jul. 2009 to Jun. 2010.
43. Principal Investigator, “Design and implementation of highway electric wires anti-theft system,” Grant of Ministry of Education, Jan. 2009 to Dec. 2009.
44. Principal Investigator, “Development of university regional 3C academia-industry cooperation,” Grant of Ministry of Education, Aug. 2008 to Jul. 2009.
45. Principal Investigator, “Design of demand response system for a smart grid,” Grant of National Science Council, Grant No. NSC 97-2221-E-027-109, Aug. 2008 to Jul. 2009.
46. Principal Investigator, “Diagnosis system based on infrared thermography for distribution facilities” Grant of National Science Council, Grant No. NSC 97-2622-E-027-015-CC3, Aug. 2008 to Jul. 2009.
47. Principal Investigator, “Integration of substation facility maintenance and management system with important electric facility inspection system,” Grant of Taiwan Power Company, Aug. 2008 to Jan. 2010.
48. Principal Investigator, “Design and implementation of primary substation facility surveillance system” Grant of Ministry of Education, Jun. 2008 to Jan. 2009.
49. Principal Investigator, “Design of Intelligent Energy Saving System for Central Chillers,” Grant of Ministry of Education, Grant No. E-02-316, Dec. 2007 to Aug. 2008.
50. Principal Investigator, “Man Hole Locating and Inspection System (II),” Grant of National Science Council (NSC), NSC Grant No. NSC 96-2622-E-027-055-CC3, Nov. 2007 to Oct. 2008.
51. Principal Investigator, “Improving Distribution Automation System by GPRS Mobile Communication System (3/3),” Grant of National Science Council (NSC), NSC Grant No. NSC 96-2221-E-027-069, Aug. 2007 to Jul. 2008.
52. Principal Investigator, “Man Hole Locating and Inspection System,” Grant of National Science Council (NSC), NSC Grant No. NSC 95-2622-E-027-050-CC3, Nov. 2006 to Oct. 2007.
53. Principal Investigator, “Improving Distribution Automation System by GPRS Mobile Communication System (2/3),” Grant of National Science Council (NSC), NSC Grant No. NSC 95-2221-E-027-128, Aug. 2006 to Jul. 2007.
54. Principal Co-Investigator, “Design of Substation Facility Management System,“ Grant of Taiwan Power Co., July 2006 to June 2007.
55. Principal Investigator, “Control System of Switched Capacitor Bank Based On Mobile Communication System (II),” Grant of NSC, NSC Grant No. NSC 94-2622-E-027-053-CC3, Nov. 2005 to Oct. 2006.
56. Principal Investigator, “Improving Distribution Automation System by GPRS Mobile Communication System (1/3),” Grant of National Science Council (NSC), NSC Grant No. NSC 94-2213-E-027-055, Aug. 2005 to Jul. 2006.
57. Co-Investigator, “Design of Demand Response System,” Bureau of Energy, Ministry of Economic Affairs, “Dec. 2004 to May 2006.
58. Principal Investigator, “Design of Monitoring and Diagnostic System for Distribution Transformers,” Grant of Taiwan Power Co., Nov. 2004 to Apr. 2006.
59. Principal Investigator, “Study of Distribution Operation Strategy – Subproject II: Two-way load control system based on public service broadband networks (3/3),”

Grant of National Science Council (NSC), NSC Grant No. NSC 93-2213-E027-001, Aug. 2004 to Jul. 2005.

1. Principal Investigator, “Control System of Switched Capacitor Bank Based On Mobile Communication System,” Grant of NSC, NSC Grant No. NSC 93-2622-E-027-024-CC3, May 2004 to Apr. 2005.
2. Principal Investigator, “Remote Air Conditioning Control System,” Grant of Arima Communication, Jan. 2004 to Mar. 2004.
3. Principal Investigator, “Design and Implementation of Mechanical and Electrical Education in the University of Technology (3/3),“ Grant of NSC, NSC Grant No. NSC 92-2516-S-027-003, Oct. 2003 to Sep. 2004.
4. Principal Investigator, “Study of Distribution Operation Strategy – Subproject II: Two-way load control system based public service broadband networks (2/3),“ Grant of NSC, NSC Grant No. NSC 92-2516-S-027-002, Oct. 2003 to Sep. 2004.
5. Principal Investigator, “Automated Design System of Track Seeking Controller for DVD-ROM“ Grant of NSC & Lian-Ya Tech., NSC Grant No. NSC 92-2622-E-027-021-CC3, June 2003 to May 2004.
6. Principal Co-Investigator, “Promotion and Cost Effectiveness Evaluation of Demand Side Management (2/2),“ Grant of Bureau of Energy, Ministry of Economic Affairs, Grant, July 2003 to June 2004.
7. Principal Co-Investigator, “Feasibility Study of Demand Exchange in the Deregulated Electricity Market,“ Grant of Taiwan Power Co., July 2003 to June 2004.
8. Principal Investigator, “Development of Linux Operation System in Secom IPS Bridge,“ Grant of SeCom Co., May 2003 to Oct. 2004.
9. Principal Investigator, “Design of Broadband Network Based Home Energy Management System,“ Grant of Taiwan Power Co., May 2003 to Apr. 2005.
10. Principal Investigator, “Design and Implementation of Mechanical and Electrical Education in the University of Technology (2/3),“ Grant of NSC, NSC Grant No. NSC 91-2516-S-027-004, Oct. 2002 to Sep. 2003.
11. Principal Investigator, “Study of Distribution Operation Strategy – Subproject II: Two-way load control system based public service broadband networks (1/3), “ Grant of NSC, NSC Grant No. NSC 91-2213-E-027-024, Aug. 2002 to July 2003.
12. Principal Investigator, “Enhanced Development of Semiconductor Education in College of Mechanical and Electrical Engineering, National Taipei University of Technology,“ Grant of Ministry of Education, Aug. 2002 to July 2003.
13. Principal Investigator, “Automated Hardness Measurement Based on Hough Transform,“ Grant of NSC and UTECHZONE Co., NSC Grant No. NSC 91-2622-E-027-016-CC3, June 2002 to May 2003.
14. Principal Co-Investigator, “Promotion and Cost Effectiveness Evaluation of Demand Side Management (1/2), “Grant of Bureau of Energy, Ministry of Economic Affairs, June 2002 to June 2003.
15. Principal Investigator, “Design of Outage Detection Management System,“ Grant of Taiwan Power Co., Apr. 2002 to Apr. 2003.
16. Principal Investigator, “Design of Broadband Information Receiver,“ Grant of KoSeng Co., Apr. 2002 to Apr. 2003.
17. Principal Investigator, “Design of Power Information Management System,“ Grant of Taiwan Power Co., Apr. 2002 to Apr. 2003.
18. Principal Investigator, “Design and Implementation of Mechanical and Electrical Education in the University of Technology (1/3),” Grant of NSC, NSC Grant No. NSC 90-2511-S-027-004, Oct. 2001 to Sep. 2002.
19. Principal Investigator, “Study of Direct Control of Split Type Air Conditioners in Convenient Store,“ Grant of NSC, NSC Grant No. NSC 90-2213-E-027-024, Aug. 2001 to July 2002.
20. Principal Investigator, “Load Monitoring Device for Broadband Networks,“ Grant of DAE Instrument, July 2001 to June 2002.
21. Principal Investigator, “Design of Control Center for Air Conditioning Load Management,“ Grant of Taiwan Power Co., June 2001 to June 2002.
22. Principal Investigator, “Design and Improvement of MP3 Decoding Mechanism for Optical Disc Drive“ Grant of Hanpin Electron Co., Jan. 2001 to Aug. 2001.
23. Principal Investigator, “Design of Stepless Load Shedding Controller for Centrifugal Chiller,“ Grant of NSC, NSC Grant No. NSC 89-2213-E-027-052, Aug. 2000 to July 2001.
24. Principal Investigator, “Study of Application of Broadband Networks to Utility Customer Service – System Design and Simulation,“ Grant of Taiwan Power Co., Aug. 2000 to Aug. 2001.
25. Principal Investigator, “Fuzzy Track Seeking Controller for Optical Disc Drive,“ Grant of Everspring Co., Mar. 2000 – June, 2001.
26. Principal Investigator, “Modeling of Central Air Conditioning Load for Direct Load Control“ Grant of NSC, NSC Grant No. NSC 89-TPC-7-027-004, Jan, 2000 to Dec. 2000.
27. Principal Investigator, “Track Seeking Controller for High Speed Optical Disc Drive“ Grant of Sanya Co., Sep. 1999 to July 2000.
28. Principal Investigator, “Study of Load Shedding Mechanism for Direct Control of Screw Chillers and Reciprocal Chillers,“ Grant of NSC, NSC Grant No. NSC 89-2213-E-027-022, Aug. 1999 to July 2000.
29. Principal Investigator, “Design of Load Shedding Controller for Central Air Conditioner“ Grant of MEA Co., MEA Grant No. P188037, Apr. 1999 to Mar. 2000.
30. Principal Investigator, “Direct Load Control by Radio Paging System in Northern Taiwan,“ Grant of Taiwan Power Co., May 1998 to June 2000.
31. Principal Co-Investigator, “Design of Thunder Arrestor and Intelligent Demand Controller,“ Grant of MEA, MEA Grant No. 187006, Apr. 1998 to Mar. 2000.
32. Principal Co-Investigator, “Life Support System After-quake Investigation – 921 Earth Quake Disaster,“ Grant of National Center for Research on Earthquake Engineering (NCREE), Grant No. NCREE-99-056, Sep 1999 to Nov. 1999.
33. Principal Investigator, “Switching Control of Capacitor Banks by Radio,“ Grant of Taiwan Power Co, Jan. 1999 to Dec. 1999.
34. Principal Investigator, “Coordination of Building Automation System and Direct Control of Central Air Conditioners,“ Grant of NSC, NSC Grant No. NSC 88-PAG004, Jan. 1999 to Dec. 1999.
35. Principal Investigator, “Design of Real-time Price Receiver and Message Propagation Management System,“ Grant of NSC, NSC Grant No. NSC 88-2213-E-027-016, Aug. 1998 to July 1999.
36. Principal Investigator, “Improvement of Communication Education,“ Grant of Ministry of Education, May 1998 to Apr. 1999.
37. Principal Investigator, “Design of Real-time Price Broadcasting System by Radio Paging System,“ Grant of QuaTech Co. and Ministry of Economic Affairs, Apr. 1998 to Mar. 1999.
38. Principal Investigator, “Study of Promoting Gas Fueled Air Conditioners to Reduce CO2 Emission in Taiwan,“ Grant of Environmental Protection Administration, EPA-87-FA11-03-G1, Jan. 1998 to June 1998.
39. Principal Investigator, “Design and Implementation of Radio Paging Based Load Management System,“ Grant of NSC, NSC Grant No. NSC 87-2218-E-027-003, Aug. 1997 to July 1998.
40. Principal Co-Investigator, “Promotion and Evaluation of Absorption Chillers for Demand Side Management,“ Grant of NSC, NSC Grant No. NSC 87- TPC-E-027-004, Jan. 1998 to Dec. 1998.
41. Principal Investigator, “Improving Direct Load Control by Cabling System,“ Grant of NSC, NSC Grant No. NSC 87-TPC-E-027-001, Jan, 1998 to Dec. 1998.
42. Principal Investigator, “Application of Radio Techniques to Feeder Automation,“ Grant of Taiwan Power Co., Sep. 1997 to June 1998.
43. Principal Investigator, “Improvement of Communication Education,“ Grant of Ministry of Education, May 1997 to Apr. 1998.
44. Principal Co-Investigator, “Study of Non-electric Air Conditioners,“ Grant of Taiwan Power Co., Jan. 1997 to Dec. 1997.
45. Principal Co-Investigator, “National Standard of Automatic Meter Reading,“ Grant of Bureau of Standards, July 1996 to June 1997.
46. Principal Investigator, “Application of Radio Paging System to Load Management,“ Grant of Taiwan Power, Feb. 1997 to July 1998.
47. Principal Investigator, “Scheduling of Direct Load Control by Recursive Genetic Algorithm,“ Grant of NSC, NSC Grant No. NSC 86-2213-E-027-006, Aug. 1996 to July 1997.
48. Principal Investigator, “Fuzzy Control of Robotic Cutting,“ Grant of NSC, NSC Grant No. NSC 85-2212-E-027-003, Aug. 1995 to July 1996.
49. Principal Investigator, “Pilot Test for Direct Control of Air Conditioning Load via Radio,“ Grant of Taiwan Power Co., May 1995 to Apr. 1997.
50. Principal Investigator, “Improvement of Communication Education,“ Grant of Ministry of Education, May 1994 to Apr. 1995.
51. Principal Co-Investigator, “Improvement of Communication Education,“ Grant of Ministry of Education, May 1993 to Apr. 1994.
52. Principal Investigator, “Adaptive Control of Belt Conveyor by Expert System,“ Grant of NSC, NSC Grant No. NSC 83-0117-C-027-0140E, Aug. 1993 to July 1994.
53. Principal Investigator, “Feasibility Study of Controlling Air Conditioning Load Through Radio,“ Grant of Taiwan Power Co., May 1993 to Apr. 1994.
54. Principal Investigator, “Nonparametric Learning of Decision Region by Genetic Algorithm,“ Grant of NSC, NSC Grant No. NSC82-0113-E-027-033-T, Feb. 1993 to Jan. 1994.