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## **EDUCATION**

- ✚ Ph. D. in Mechanical Engineering, Beijing University of Aeronautics and Astronautics, Beijing, China, 1996
- ✚ MS in Control Engineering, Beijing Graduate School, North China Institute of Electric Power, Beijing, China, 1993
- ✚ BS in Control Engineering, North China Institute of Electric Power, Baoding, China, 1990

## **Working experience**

1997-1998	Lecturer, North China Electric Power University, Beijing
1998-2004	Associate Professor, North China Electric Power University, Beijing
2004-present	Professor, North China Electric Power University, Beijing
2008-present	Supervisor of Ph. D students, North China Electric Power University, Beijing
2000-2001	Visiting Senior Research Fellow, UMIST, Manchester, UK
2008-2008	Visiting Professor, Chung-Yuan Christian University, Chung-Li, Taiwan

## **Research interest**

- ✚ Energy conversion and control
- ✚ Mathematical modelling and advanced control of complex industrial processes
- ✚ Networked control systems
- ✚ Fault diagnosis and fault-tolerant control

## **Research projects**

- 1) Principal investigator, Chinese 973 Program (National Basic Research Program of China) “Integration, control and operation of waste heat utilizing systems” (No. 2011CB710706), 2011.01-2015.12, 3550000 (RMB).

- 2) Principal investigator, Chinese NSFC Project “Probability density function control of nonlinear non-Gaussian stochastic systems based on input output model” (No. 60974029), 2010.01-2012.12, 310000(RMB)
- 3) Principal investigator, Chinese NSFC Project “Research on networked control systems based on stochastic distribution control theory” (No. 60674051), 2007.01-2009-12, 250000(RMB).
- 4) Principal investigator, Beijing NSFC Project “Research on networked automatic generation control systems via stochastic distribution control theory” (No. 4072022), 2007.01-2009.12, 120000(RMB).
- 5) Principal investigator, Doctoral Fund of Ministry of Education of China, “Research on Combustion control systems via stochastic distribution control theory” (No.20110036110005), 2011.01-2013.12, 120000(RMB).
- 6) Principal investigator, Open Fund of State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, “Research on stochastic distribution control theory with application to boiler combustion control systems”, 2012.01-2013.12, 70000(RMB).
- 7) Principal investigator, 211 Project, North China Electric Power University, “Control and synthesis of networked control systems”, 2008-2011, 150000(RMB).
- 8) Principal investigator, Scientific Research Project for Returned Scholars, Ministry of Education, “Research on stochastic distribution control theory and application”, 2005-2007, 30000(RMB).
- 9) Principal investigator, Scientific Research Project for Young Scholars, Ministry of Electric Power, “Research on fault detection and diagnosis of thermal power systems”(SPQKJ015), 1998-2001, 30000(RMB).
- 10) Principal investigator, Scientific Research Project for Youth Scholars, North China Electric Power University, “Research on fault diagnosis and accommodation of thermal power systems”, 1998-2001, 20000(RMB).
- 11) Co-investigator, Scientific Research Project for Young Scholars, Ministry of Electric Power, “Research on fuzzy control theory and application in large scale power stations” (SPQKJ013), 1998-2001, 30000(RMB).
- 12) Co-investigator, National High Technology Research and Development Program of China, “Research on advanced control strategy and developing software in DCSs for large scale power generation units”(863-511-820-036), 1998-2000, 500000(RMB).
- 13) Co-investigator, Important Project of State Power Corporation, “Adaptive control theory and application in DCSs”(z23013), 1997-1999, 1000000(RMB).
- 14) Co-investigator, Project for Hennan Electric Power Survey & Design Institute, “Research on wide-range optimal control strategy for super-critical units”, 2010-2012, 988000(RMB)
- 15) Co-investigator, Project for Hebei 150 Power Plant “Research on process control strategy for power plants”, 1998-1999, 150000(RMB)

# Publications

## Book and Book Chapters:

- 1) **Zhang Jianhua**, Zhanjiang Wu and Hong Chen \*[\[Translator\]](#) , Networking Basics, *Higher Education Press*, Beijing, 2005 {Original author Mark D. Ciampa, Thomson course technology, 2<sup>nd</sup> Edition, 2003}
- 2) **Zhang Jianhua**, Wenfang Zhang, Ying Li and Guolian Hou. Controller Design for a Heat Exchanger in Waste Heat Utilizing Systems, *Advances in Swarm Intelligence: The 2nd International Conference on Swarm Intelligence (ICSI 2011)*, 379-386, Ying Tan, Yuhui Shi, Yi Chai, Guoyin Wang (Eds.), Springer-Verlag Berlin Heidelberg 2011, 379–386
- 3) **Zhang Jianhua**, Lei Cai and Hong Wang. Fault detection for networked control systems via minimum error entropy observer, *Advances in Computational Intelligence*, 103-111; Series: *Advances in Intelligent and Soft Computing* , Vol. 61; Wen Yu and Edgar N. Sanchez (Eds.), Springer-Verlag Berlin Heidelberg 2009
- 4) **Zhang Jianhua** and Hong Wang. An information theoretic approach for design MIMO networked control systems, *Adv. in Neural Network Research & Appl.*, LNEE 67 (Zeng & J. Wang (Eds.) ), 595-601, Springer-Verlag Berlin Heidelberg 2010
- 5) **Zhang Jianhua**, Jingyue Wang, Rui Wang, Electricity price forecasting using neural networks trained with entropic criterion, *Adv. in Neural Network Research & Appl.*, LNEE 67 (Z. Zeng & J. Wang (Eds.) ), 47-53, Springer-Verlag Berlin Heidelberg 2010
- 6) **Zhang Jianhua**, Yingxin Wang, Rui Wang, and Guolian Hou, A New Particle Swarm Optimization Solution to Nonconvex Economic Dispatch Problem, Y. Tan, Y. Shi, and K.C. Tan (Eds.): *The 2<sup>nd</sup> International Conference on Swarm Intelligence (ICSI 2010), Part I*, LNCS 6145, 191–197, Springer-Verlag Berlin Heidelberg 2010
- 7) **Zhang Jianhua** (One of Editors) English Russian and Chinese dictionary of Electric Power, *Chinese Electric Power Press*, 1999

## Journal papers:

- 1) Zhou Gu, Dong Yue, Chen Peng, Jinliang Liu and **Jianhua Zhang** , Fault tolerant control for systems with interval time-varying delay and actuator saturation, *Journal of the Franklin Institute*, (in press)
- 2) **Jianhua Zhang** , Mifeng Ren and Hong Wang, Minimum Entropy Control for Non-Linear TITO Dynamic Stochastic Systems, *IET Control Theory Appl.*, **6**(15), 2012:2434–2441
- 3) **Jianhua Zhang**, Mifeng Ren, Ye Tian, Guolian Hou and Fang Fang. Stochastic Distribution Control for Constrained Nonlinear ARMAX Stochastic Systems, *International Journal of Innovative Computing, Information and Control* (accepted)
- 4) **Jianhua Zhang**, Yeli Zhou, Ying Li, Guolian Hou and Fang Fang, Generalized predictive control applied in waste heat recovery power plants, *Applied Energy*, **102**, 2013:320–326
- 5) Fang Fang, Le Wei, Jizhen Liu, **Jianhua Zhang** and Guolian Hou , Complementary configuration and operation of a CCHP-ORC system *Energy*, **46**, 2012:211-220
- 6) **Jianhua Zhang**, Fenfang Zhang, Mifeng Ren, Guolian Hou and Fang Fang, Cascade Control

of Superheated Steam Temperature with Neural PID Controller, *ISA Transactions* **51**, 2012: 778–785

- 7) **Jianhua Zhang**, Wenfang Zhang, Guolian Hou and Fang Fang, Dynamic modeling and Multivariable Control of Organic Rankine Cycles in Waste Heat Utilizing Processes, *Computers & Mathematics with Applications*, **64**, 2012:908–921
- 8) Mifeng Ren , **Jianhua Zhang**, Man Jiang, Ye Tian and Guolian Hou , Statistical Information Based Single Neuron Adaptive Control for Non-Gaussian Stochastic Systems , *Entropy* **14**, 2012:1154-1164
- 9) **Jianhua Zhang**, Lilong Du , Mifeng Ren and Guolian Hou , Minimum Error Entropy Filter for Fault Detection of Networked Control Systems, *Entropy* , **14**, 2012:505-516
- 10) **Jianhua Zhang**, Jiancun Feng, Yeli Zhou, Fang Fang and Hong Yue, Linear Active Disturbance Rejection Control of Waste Heat Recovery Systems with Organic Rankine Cycles, *Energies*, **5**, 2012:5111-5125
- 11) **Jianhua Zhang**, Chih-Chiang Chu, Jose Munoz and Junghui Chen. Minimum Entropy Based Run-to-Run Control for Semiconductor Processes with Uncertain Metrology Delay, *Journal of Process Control*, **19**(10), 2009:1688-1697
- 12) **Jianhua Zhang** and Hong Wang. An Iterative Learning Based Minimum Tracking Error Entropy Controller for Robotic Manipulators with Random Communication Time Delays, *IET Control Theory & Applications*, **2**(8), 2008:682-692
- 13) **Jianhua Zhang a**. Neural controller for networked control systems based on minimum tracking error entropy, *Proc IMechE, Part I: Journal of Systems and Control Engineering*, **222**(7),2008:671-679
- 14) **Jianhua Zhang**, Hong Wang. Minimum Entropy Control of Nonlinear ARMA Systems over a Communication Network, *Neural Computing & Applications*, **17**(4),2008:385-390
- 15) **Jianhua Zhang** and Hong Yue. Fault diagnosis and fault-tolerant control in power plants and power systems, *Measurement and Control*, **39**(6), 2006:171-177.
- 16) Wang Hong and **Jianhua Zhang**. Bounded stochastic distributions control for pseudo-ARMAX stochastic systems, *IEEE Transactions on Automatic Control*, **46**(3),2001:486-490
- 17) **Jianhua Zhang**, Aiping Wang and Hong Wang. Minimum entropy control of nonlinear TITO systems with random delays, *International Journal of Advanced Mechatronic Systems* **1**(4), 2009:258-265
- 18) **Jianhua Zhang** and Hong Wang. Stochastic Distribution Control Strategy with Application to Networked Control Systems, *International Journal of Intelligent Control and Systems*, **14** (2), 2009: 158-165
- 19) **Jianhua Zhang** and Wang Hong. Neuro-PID controller design for networked control systems with non-linearity and random delays using Fisher information, *Int. J. Systems, Control and Communications*, **2**(4), 2010:446-456
- 20) Lilong Du, Zhou Gu and **Jianhua Zhang**, Reliable control for T-S fuzzy system intermittent actuators failure, *ICIC Express Letters*, **5**(1), 2011:1-6
- 21) **Jianhua Zhang**, Lilong Du, Aiping Wang and Hong Wang, An Entropy Approach to Filtering for Networked Control Systems, *International Journal of Computer Application in Technology*, **44**(4), 2012:243 - 248
- 22) **Jianhua Zhang**, Mifeng Ren, Guolian Hou and Mei Yu, Design MIMO control systems with

- non-Gaussian delays and noises, *ICIC Express Letters*, **7**(2), 2013:417-422
- 23) **Jianhua Zhang**, Yunhua Li and Zhanlin Wang. Investigation on fault detection and diagnosis for the position servosystem of an aircraft actuator, *Chinese Journal of Aeronautics*, **10**(1),1997:68-74
  - 24) **Jianhua Zhang**, Yunhua Li and Zhanlin Wang. An approach to fault detection and diagnosis of nonlinear electro-hydraulic servo system, *Chinese Journal of mechanical Engineering* , **10**(1),1997:54-59
  - 25) Du Lilong, **Jianhua Zhang**, Gu Zhou, Fault Tolerant Control for Discrete-Time Nonlinear Systems with Infinite Distributed Delays, *Systems Engineering and Electronics*34(2), 2012:358-363 (In Chinese)
  - 26) Gu Zhou, **Jianhua Zhang**, DU Lilong, Fault tolerant control for a class of time-delay systems with intermittent actuators failure, *Control and decision*, **26**(12), 2011:1829-1834 (In Chinese)
  - 27) **Jianhua Zhang**, Yuntao Shi, Guolian Hou and Yinfen Zhang. Research On Fault Diagnosis And Fault Tolerant Control Of The Coordinate Control System In Coal-Fired Power Plant, *Proceedings of the CSEE*, **24** ( 8 ) ,2004: 175-179 (In Chinese)
  - 28) Hou Guolian, Yang Liu and **Jianhua Zhang**. Application of Predictive Functional Control in Monoblock Coordinated Control Systems of Fossil Power Plants, *Power Engineering*, **25**(2), 2005: 239-243, (In Chinese)
  - 29) Hou Guolian, Quan Li and **Jianhua Zhang**. Research of MIMO Adaptive Fuzzy Sliding-mode Control With Variable Universe And Its Application To The Coordinated Control System In unit, *Proceedings of the CSEE*, **25** ( 9 ) ,2005: 114-121 (In Chinese)
  - 30) Hou Guolian; Xiaogang Sun, **Jianhua Zhang** and Weigang Jin. Research On Fault Diagnosis of Condenser Via Nonlinear Principal Component Analysis And Probabilistic Neural Networks, *Proceedings of the Csee*, **25** ( 18 ) ,2005:104—108 (In Chinese)
  - 31) **Jianhua Zhang**, Jianping Yang; Guolian Hou and Yingnian Wu. Diagnosis of Instrument Faults for Nonlinear Coordinate Systems, *Proceedings of the CSEE*, **26** ( 14 ) ,2006: 152-157 (In Chinese)
  - 32) Hou Guolian, Yi Zhang and **Jianhua Zhang**. Fault Diagnosis for Sensors Based on Morphology-wavelet, *Proceedings of the Csee*, **29**(14),2009:93-98 (In Chinese)
  - 33) **Jianhua Zhang**, Fei Dong; Guolian Hou and Guili Yuan. Coordinated Control Strategy of Block Units Based on Neural Network Predictive Control, *Power Engineering*, **26**( 3 ) , 2006: 392-395 (In Chinese)
  - 34) **Jianhua Zhang**, Guolian Hou, Xiaogang Sun and Guili Yuan. Research on Turbo-generator Fault Diagnosis Using Probabilistic Neural Networks, *Power Engineering*, **25** ( 5 ) ,2005: 698-701
  - 35) Liu Xiangjie, Chong Yin, **Jianhua Zhang** and Guolian Hou. Supervisory Predictive Control of Boiler in Combined Cycle Power Plant, *Proceedings of the CSEE*, **27**(20),2007: 52-58 (In Chinese)
  - 36) Hou Guolian, Quan Li and **Jianhua Zhang**. Research on Fuzzy Sliding-Model Adaptive Control and Its Application in Thermal Engineering Processes of Power Plants, *Power Engineering*, **25** ( 1 ) ,2005: 68-72 (In Chinese)
  - 37) Hou Guolian, Chong Yin; **Jianhua Zhang**. Survey on Control Strategies of Combined Cycle Power Plant, *Modern Electric Power*, 2007, 24 ( 1 ) : 149-52 (In Chinese)

- 38) Zhang Xinying, Weigang Jin, **Jianhua Zhang** and Jiangbin Bai. Control Performance Assessment Based on Minimum Variance Bench, *Modern Electric Power*, 2006, **6**,:73-75 (In Chinese)
- 39) Yuan Guili, Tianhong Wang, **Jianhua Zhang** and Guolian Hou. Application of the Advanced Coordination Management System in the Power Plants, *Power System Engineering*, **20**(4), 2004:38-40 (In Chinese)
- 40) Yuan Guili, Tianhong Wang, Guolian Hou and **Jianhua Zhang**. Research and Application of the Plant Information System (PI), *Power System Engineering*, **20**(6),2004:50-52 (In Chinese)
- 41) Hou Guolian, Chunfang Zhang, **Jianhua Zhang** and Weigang Jin. Mixed Control Algorithm Design and Its Application to the Coordinated Control System in 300MW Unit Based on Multivariable GPC and DMC, *Modern Electric Power*, **21**(6),2004:15-19 (In Chinese)
- 42) **Jianhua Zhang**, Yuntao Shi, Guoliain Hou and Weigang Jin. Research on Instrument Fault Detection of Boiler Water Level Control Systems via Parity Space Method, *Modern Electric Power*, **19** (4) ,2002:73-77 (In Chinese)
- 43) Xu Yuxin, Hou Guolian, **Jianhua Zhang** and Xingzhong Zuo. Two Tuning Methods of Smith Predictive Control System, *Modern Electric Power*, **19** (4) ,2002: 78-82 (In Chinese)
- 44) **Jianhua Zhang**, Yinfen Zhang, Guolian Hou and Yuntao Shi. Reserch on Self-Organizing Fuzzy Identification Algorithm via the Fuzzy T-S Model, *Modern Electric Power*, **19** (5) ,2002: 64-68 (In Chinese)
- 45) Zuo Yan, Guolian Hou, **Jianhua Zhang** and Tianhong Wang. Application of Composite Fuzzy Serial Control System to Superheated Steam Temperature of Thermal Power Station, *Modern Electric Power*, **19** (1) ,2002: 64-69 (In Chinese)
- 46) Xu Yuxin, Guolian Hou, **Jianhua Zhang** and Yan Zuo. Survey of Improving Robust Performance with Smith Predictive Control System, *Modern Electric Power*, **20** (2) ,2003: 64-67 (In Chinese)
- 47) Wu Yingnian, **Jianhua Zhang**, Guolian Hou and Jianping Yang. Survey on Research of Networked Control Systems(I), *Modern Electric Power*, **20** (5) , 2003 (In Chinese)
- 48) Wu Yingnian, **Jianhua Zhang**, Guolian Hou and Jianping Yang. Survey on Research of Networked Control Systems(I), *Modern Electric Power*,**20** (6) , 2003 (In Chinese)
- 49) Liu Wenmao, Guolian Hou, **Jianhua Zhang**, Fei Guo and Xiaomei Chen. A Dynamic Predictive Algorithm Based on Double Errors, *Modern Electric Power*, **18** (2) ,2001: 62—67 (In Chinese)
- 50) Xu Yuxin, Guolian Hou and **Jianhua Zhang**. A Design Method High Burden Constant Current Source Installations, *Modern Electric Power*, **16**(3),1999:71-74 (In Chinese)
- 51) Li Nongzhuang, Guolian Hou and **Jianhua Zhang**. Teaching Software Development of Automatic Control Course Using MATLAB, *Modern Electric Power*, **16**(3),1999:80-85 (In Chinese)
- 52) Duan Quansheng, He Liu, **Jianhua Zhang** and Yi Zhang. Boiler Heat Dissipation Flux Measurement, *Modern Electric Power*, **16**(4),1999:60-64 (In Chinese)
- 53) **Jianhua Zhang**, Guolian Hou, Nongzhuang Li and Hongbing Xu. Multi-model Control System of the Boiler Superheated Steam Temperature, *Jouranl of North China Electric Power University*, **27** (3) ,2000: 38-41 (In Chinese)
- 54) **Jianhua Zhang**, Guolian Hou, Nongzhuang Li and Hongbing Xu. A Simulating Study on

- Superheated Steam Temperature Control System of a Power Plant Based on NN & IMC, *Modern Electric Power*, **17** (2), 2000: 19-24 (In Chinese)
- 55) **Jianhua Zhang**, Guolian Hou and Nongzhuang Li. An approach to fault diagnosis of nonlinear system based on neural networks, *Modern Electric Power*, **17** (1), 2000: 16-20 (In Chinese)
  - 56) **Jianhua Zhang** and Zhanlin Wang, Method of knowledge processing in fault diagnosis for hydraulic system, *Machine Tool & Hydraulics*, vol.6, 1998: 69-70 (In Chinese)
  - 57) **Jianhua Zhang**, Guolian Hou, Nongzhuang Li and Xutao Bai. Control System of Reheating Temperature Process Based on Internal Model Control, *Modern Electric Power*, **16**(1), 1999:5-10 (In Chinese)
  - 58) **Jianhua Zhang** and Zhanlin Wang. A Method Based On Fuzzy Quantization And Neural Networks In Monitoring And Diagnosing Faults Of The Process Control System, *Pattern Recognition and Artificial Intelligence*, vol.1, 1997:38-43 (In Chinese)
  - 59) **Jianhua Zhang** and Zhanlin Wang. A Method Based On Fuzzy Quantization And Neural Networks In Monitoring And Diagnosing Faults Of The Process Control System , *Journal of Data Acquisition & Processing*, vol.2,1997:145-148 (In Chinese)
  - 60) **Jianhua Zhang** and Zhanlin Wang. Fault Diagnosis Based On Fuzzy Neural Networks, *Journal of Beijing University of Aeronautics and Astronautics*, vol.4, 1997:502-506 (In Chinese)
  - 61) **Jianhua Zhang** and Zhanlin Wang. The method of case-based reasoning in fault diagnosis of hydraulic system, *Machine Tool & Hydraulics*, vol.4, 1997:44-45 (In Chinese)
  - 62) **Jianhua Zhang**, Yingqin Yuan and Baojun Han. Fault Diagnosis of Condensing Equipment, *Journal of North China Electric Power University*,**25**(2),1998: 48-52 (In Chinese)
  - 63) **Jianhua Zhang**, Guolian Hou and Yang Li. Research on Decoupling of the Coordinated Control System in a 300MW Thermal Power Unit, *Modern Electric Power*, **15**(2), 1998:14-18 (In Chinese)
  - 64) **Jianhua Zhang**, Guolian Hou, Nongzhuang Li and Xutao Bai. Control System Design of Reheating Temperature Based on Inferential Control, *Journal of Electric Power*, **13**(2),1998:81-85 (In Chinese)
  - 65) **Jianhua Zhang** and Guolian Hou. Fault Diagnosis via Fuzzy and Artificial Neural Networks, *Modern Electric Power*, **15**(3),1998:13-17 (In Chinese)
  - 66) **Jianhua Zhang**, Junhua Zhang and Guolian Hou. Neural Networks and Application in Fault Diagnosis, *Journal of Electric Power*, **13**(3),1998:6-10 (In Chinese)
  - 67) Zhang Junhua and **Jianhua Zhang**. Fault Diagnosis of Condenser, *Journal of Electric Power*, **13**(3),1998:36-40 (In Chinese)
  - 68) Zhang Xiaoping, Guolian Hou and **Jianhua Zhang**. Design Method Research of Boiler Cascade Temperature Control System, *Shanxi Electric Power*, vol.3,1998: 5-9 (In Chinese)
  - 69) **Jianhua Zhang**, Yingqin Yuan and Baojun Han. An Approach to Fault Diagnosis of Nonlinear System with Varying Operating Point, *Journal of North China Electric Power University*, **25**(4),1998: 53-58 (In Chinese)

#### Conference papers:

- 1) Mifeng Ren , **Jianhua Zhang**, Jinfang Zhang and Guolian Hou , Minimum Entropy Incremental Control for Nonlinear Stochastic Systems with Non-Gaussian Disturbances and

- Uncertain Parameters, *Proceeding of 2012 American Control Conference*, Fairmont Queen Elizabeth, Montréal, Canada, June 27-June 29, 2012, 197-201
- 2) **Jianhua Zhang**, Wenfang Zhang, Mingming Lin, Yeli Zhou and Guolian Hou, Multivariable Control of an ORC Power Plant for Utilizing Waste Heat, *Proceeding of International Symposium on Computer, Consumer and Control (IS3C)*, June 4-6, 2012, 721 - 724
  - 3) **Jianhua Zhang**, Yeli Zhou, Song Gao and Guolian Hou, Constrained predictive control based on state space model of Organic Rankine Cycle system for waste heat recovery, *Proceeding of 24th Chinese Control and Decision Conference (CCDC)*, 2012, 230 - 234
  - 4) **Jianhua Zhang**, Ying Li, Zhuofei Wang and Guolian Hou, Dynamic Characteristics and Predictive Control for Organic Rankine Cycle, *Proceeding of 7th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, 2012 281 - 284
  - 5) Guolian Hou, Rui Sun, Shanshan Bi, Guoqiang Hu and **Jianhua Zhang**, Simulation study on scroll expander digital electro-hydraulic governing system, *Proceeding of 24th Chinese Control and Decision Conference (CCDC)*, 2012, 1002 – 1006
  - 6) Hou Guolian, Qin Lina, Zheng Xinyan and **Jianhua Zhang**, Application of PSO-based fuzzy PI controller in multi-area AGC system after deregulation, *Proceeding of 7th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, 2012, 1417 - 1422
  - 7) Guolian Hou, Xinyan Zheng, Lina Qin and **Jianhua Zhang**, Application of GA for three-area power system after deregulation with valve position limit, *Proceeding of 24th Chinese Control and Decision Conference (CCDC)*, 2012, 1018 – 1022
  - 8) Hou Guolian, Li Yanbin, **Jianhua Zhang**, Zhou Yeli, Dynamic characteristics for evaporator in Organic Rankine Cycle, *Proceeding of 10th World Congress on Intelligent Control and Automation (WCICA)*, 2012, 2994 - 2998
  - 9) J. Chen, N. Cheng and **Jianhua Zhang**, Neural Based PID Control for Networked Processes, *Proceedings of the 4th International Symposium on Advanced Control of Industrial Processes*, Thousand Islands Lake, Hangzhou, P.R. China, May 23-26, 2011, WePoPo.3, 466-471
  - 10) **Jianhua Zhang**, Jian Han, Rui Wang and Guolian Hou. Day-ahead Electricity Price Forecasting Based on Rolling Time Series and Least Square-Support Vector Machine Model, *Proceedings of 2011 Chinese Control and Decision Conference (CCDC)*, Mianyang, China, May 23-25, 2011, 1065 - 1070
  - 11) **Zhang Jianhua**, Wenfang Zhang, Ying Li and Guolian Hou. Design of Evaporator Control System Using Fuzzy Sliding Mode Controller, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)*, Zhengzhou, China, August 11-13, 2011, 508 - 512
  - 12) **Zhang Jianhua**, Ying Li, Wenfang Zhang and Guolian Hou. Dynamic Characteristics and Predictive Control for Evaporator, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)*, Zhengzhou, China, August 11-13, 2011, 513 - 518
  - 13) **Zhang Jianhua**, Ying Li, Wenfang Zhang and Guolian Hou. Fuzzy identification based on improved T-S fuzzy model and its application in evaporator, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)*, Zhengzhou, China, August 11-13, 2011, 519 - 523



- 14) **Zhang Jianhua**, Changhai Yu and Guolian Hou. Application of Chaotic Particle Swarm Optimization in the Short-term Electricity Price Forecasting, *Proceedings of 2011 Chinese Control and Decision Conference (CCDC)*, Mianyang, China, May 23-25, 2011, 1071 - 1075
- 15) **Zhang Jianhua**, Fang Wang, Rui Wang and Guolian Hou. A study on the application of BPNN based on Minimum Error Entropy in electricity price forecasting, *Proceedings of 6th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Beijing, China, June, 21-23, 2011, Page(s): 925 - 929
- 16) **Zhang Jianhua**, Fenfang Zhang, Guolian Hou and Jinfang Zhang. Stochastic Distribution Control Theory Applied in Superheated Steam Temperature Systems, *Proceedings of 30th Chinese Control Conference (CCC2011)*, Yantai, China, July, 22-24, 2011, 5231 – 5234
- 17) **Zhang Jianhua**, Fenfang Zhang, Hong Wang, Neural PID Control Strategy for Superheated Steam Temperature Based on Minimum Entropy, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)*, Zhengzhou, China, August 11-13, 2011, 524-528
- 18) Hou Guolian, Rui Sun, Guoqiang Hu and **Jianhua Zhang**. Supervisory Predictive Control of Evaporator in Organic Rankine Cycle (ORC) System for Waste Heat Recovery, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)* Zhengzhou, China, August 11-13, 2011, 306 - 311
- 19) Hou Guolian, Guoqiang Hu, Rui Sun and **Jianhua Zhang**. Application of Self-tuning Control Based on Generalized Minimum Variance Method in Evaporator For ORCS. *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)* Zhengzhou, China, August 11-13, 2011, 202 - 206
- 20) Hou Guolian, Qian Hou and **Jianhua Zhang**. T-S Fuzzy Modelling Based on Compatible Relation and Its Application in Power Plant, *Proceedings of 6th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Beijing, China, June, 21-23, 2011, 1308 – 1313
- 21) Hou Guolian, JunJun Liu and **Jianhua Zhang**. Application of Fuzzy Predictive Control To AGC System after Deregulation over Communication Network, *Proceedings of 2011 Chinese Control and Decision Conference (CCDC)*, Mianyang, China, May, 23-25, 2011, 651 - 656
- 22) Guolian Hou; Yuan Xi; Jingbin Liu; **Jianhua Zhang**; Simulation research of the multi-variable generalized predictive control in 500MW unit plant coordinated control system, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)* Zhengzhou, China, August 11-13, 2011, 196 - 201
- 23) Hou Guolian; Liu Junjun; **Zhang Jianhua**; Application of fuzzy predictive control to AGC system after deregulation over communication network, *Proceedings of 6th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Beijing, China, June, 21-23, 2011, 2512 - 2517

- 24) Guolian Hou; Yuanyuan Zhang; **Jianhua Zhang**; Real-coding genetic algorithm-based model identification for bed temperature of 300MW CFB boiler, *Proceedings of 2011 Chinese Control and Decision Conference (CCDC)*, Mianyang, China , May, 23-25, 2011, 2019 - 2025
- 25) Guolian Hou; Yi Sun; Jingbin Liu; **Jianhua Zhang**; Fast algorithm of supervisory predictive control, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)* Zhengzhou, China, August 11-13, 2011, 92 - 96
- 26) Guolian Hou; Lina Qin; Xinyan Zheng; **Jianhua Zhang**; Design of PSO-based fuzzy gain scheduling PI controller for four-area interconnected AGC system after deregulation, *Proceedings of 2011 International Conference on Advanced Mechatronic Systems (ICAMechS2011)* Zhengzhou, China, August 11-13, 2011, 72 - 76
- 27) Zhang Jinfang, Wei Wang and **Jianhua Zhang**. A rational square-root b-spline model approximation and control of output probability density functions for dynamic stochastic systems, *Proceedings of 2010 Chinese Control and Decision Conference* ,2010:2609-2613
- 28) Zhou Gu, Lilong Du, Wei Wu and **Jianhua Zhang**. New results of delay-dependent stability for uncertain time-delay Systems, *Proceedings of 2010 Chinese Control and Decision Conference* , 2010:2609-2613
- 29) Du Lilong, Gu Zhou, Yuanyuan Zhang and **Jianhua Zhang**. A new analysis method for interval time-varying delay systems with probabilistic actuator-fault-occurrence. *Proceedings of 2010 Chinese Control and Decision Conference* , 2010:2609-2613
- 30) **Zhang Jianhua**, Jingyue Wang, Rui Wang and Guolian Hou. Forecasting Next-day Electricity Prices with Hidden Markov Models, *2010 5th IEEE Conference on Industrial Electronics and Applications(ICIEA)*, 2010:1736-1740
- 31) **Zhang Jianhua**, Lei Cai and Hong Wang. Minimum entropy filtering for networked control systems via information theoretic learning approach, *Proceedings of the 2010 International Conference on Modelling, Identification and Control*, Okayama, Japan, 2010:774-778
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## Academic awards


- 1) “Redundant control and Integrated Management of Airborne Mechatronic systems”, Second Prize of Beijing Award of Science and Technology Advances, China, 2002 (No. 4)
- 2) “Research on modern hydraulic control and fault diagnosis”, Second Prize of Natural Science Award, Ministry of Education of China, 1999 (No. 5)

## Professional activities

IPC or TPC member:

-  2011 IEEE International Conference on Advanced Mechatronic Systems (IMeChs2011), Zhengzhou, China, August 11-13, 2011.
-  The 7th IEEE Conference on Industrial Electronics and Applications (ICIEA), Singapore, 2012.
-  The 8th IEEE Conference on Industrial Electronics and Applications (ICIEA), Australia, 2013.
-  2013 Chinese Control and Decision Conference (CCDC), Guiyang, China, 2013.

Reviewer for

-  Journal papers: IEEE Transaction on Automatic Control, Electric Power Systems Research, Energy Conversion and Management, Trans. Institute of Measurement and Control, ISA Transactions, Neural Computing and Applications, Proc. Institution of Mechanical Engineers, Part I, J. Systems and Control Engineering, Measurement and Control, Korean J. Chem. Eng., Ind. Eng. Chem. Res., Computers & Mathematics with Applications, Proceeding of CSEE, Modern Electric Power, Journal of Beijing University of Technology etc.

- ✚ Conference papers: American Control Conference(ACC)、IEEE Conference on Decision and Control(CDC)、IFAC World Congress, IEEE Conference on Industrial Electronics and Applications (ICIEA)、International Symposium on Neural Networks (ISNN) and so on.

## **International and regional collaborations**

- ✚ Control Systems Centre, School of Electrical Engineering and Electronics, The University of Manchester
- ✚ Department of Chemical Engineering, Chung-Yuan Christian University, Chung-Li, Taiwan