

Resume of Prof. Fushuan Wen

Dr. Fushuan Wen

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Editor of *IEEE Transactions on Power Systems*

Editor of *IEEE Power Engineering Letters*

Associate editor of *IET Generation, Transmission and Distribution*

Associate editor of *ASCE's Journal of Energy Engineering*

Associate editor of *Springer's Journal of Modern Power Systems and Clean Energy*

<http://scholar.google.com.au/citations?user=pWSfLqwAAAAJ&hl=en>

<http://www.scopus.com/authid/detail.url?authorId=7102815249>

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Resume

Personal data:

- Born on July 22, 1965
- Citizen of Hong Kong
- Permanent resident of Australia and Singapore

Education:

- PhD, Department of Electrical Engineering, Zhejiang University, Hangzhou, China (Aug. 1988-June 1991)
- Master of Engineering, Department of Electrical Engineering and Automation, Tianjin University, Tianjin, China (Aug. 1985-June 1988)
- Bachelor of Engineering, Department of Electrical Engineering and Automation, Tianjin University, Tianjin, China (Aug. 1981-July 1985)

Working experience:

Continuous/permanent appointments

- Director, Zhejiang University-Insigma Joint Research Center for Smart Grids, *Zhejiang University*, Hangzhou, China (since September, 2010; taking no-paid leaves).
- Director, Institute of Power Economics and Information, *Zhejiang University*, Hangzhou, China (since January, 1999; taking no-paid leaves).
- Full professor, Dept. of Electrical Engineering, *Zhejiang University*, Hangzhou, China (since May, 1997; taking no-paid leaves).
- Associate Professor, Department of Electrical Engineering, *Zhejiang University*, Hangzhou, China (Sept. 1993-Apr. 1997)
- Postdoctoral Fellow, Department of Electrical Engineering, *Zhejiang University*, Hangzhou, China (Sept. 1991-Aug. 1993)

Note: *Zhejiang University has been maintaining a flexible policy with me by allowing me to take up long-term no-pay leaves upon my applications.*

Fixed-term or visiting appointments

- Otto Monsted Guest Professor, Department of Electrical Engineering, Technical University of Denmark, Denmark (April, 2015 to June, 2015)
- Visiting Fellow, School of Electrical Engineering and Computer Science, Queensland University of Technology, Australia (July, 2009 to March, 2014)
- Senior Research Fellow, Center for Energy and Environment Markets (CEEM), School of Electrical Engineering and Telecommunications as well as Australian Business School, University of New South Wales, Australia (July, 2008-June, 2009)
- Deputy Dean (Research and Academic Development), School of Electrical Engineering, South China University of Technology, Guangzhou, China (Jan., 2008-Dec., 2009).
- Director, Institute of Power Economics and Electricity Markets, South China University of Technology, Guangzhou, China (Sept., 2006-Dec., 2009).
- University Distinguished Professor, South China University of Technology, Guangzhou, China (Sept., 2005-Dec., 2009).
- Research Assistant Professor, Department of Electrical & Electronic Engineering, The University of Hong Kong (March, 2001-August, 2005).
- Research Fellow, Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong (July, 1998-March, 2000)
- Postdoctoral Fellow, Department of Electrical Engineering, National University of Singapore, Singapore (Feb. 1995-Feb. 1997)

Courses taught

1. Universiti Teknologi Brunei (Brunei University of Technology)

- 1) Electrical Principle (for BEng students)
- 2) Engineering Professional Ethics (for BEng students)
- 3) Electrical Power Engineering (for HND students)
- 4) Power Systems (for HND students)
- 5) Artificial Intelligence (for BEng students)
- 6) Electrical Power Engineering-Part 1 (for BEng students)

2. The University of Hong Kong

- 1) Advanced Topics in Power System Engineering (Master of Science course)
- 2) Power System Operation (Master of Science course)
- 3) Power System Distribution (Master of Science course)
- 4) Power System Planning (Master of Science course)
- 5) Electrical Energy System Engineering Integrated Project (BEng course)

3. Zhejiang University, China

- 1) Artificial Intelligence Applications in Power Systems (for PhD students and Master students)
- 2) Power Economics and Electricity Markets (for PhD students and Master students)
- 3) Power System Dynamics and Stability (for PhD students and Master students)
- 4) Computational Methods in Power System Steady State Security Analysis (for PhD students and Master students)

4. South China University Technology, China

- 1) Electricity Markets (for PhD students and Master students)
- 2) Modern power system analysis (for PhD students and Master students)
- 3) Power system fault diagnosis and alarm processing (for PhD students and Master students)

Major research areas:

1. Power economics and electricity markets.
2. Power system investment, planning and operation optimization.
3. Smart grids and electric vehicles.
4. Power system alarm processing, fault diagnosis and system restoration.

Research Projects:

1. Completed excellent talents foundation projects in China

No.	Funding source	Project title	Project duration	Funding	Role
1	Guangdong Provincial Distinguished Professor matching foundation, China (Phase 1)	Establishment of electricity market simulation laboratory	Sept., 2005 to June, 2007	1000K (RMB Yuan)	Principal investigator
2	Guangdong Provincial Distinguished Professor matching foundation, China (Phase 2)	Establishment of electricity market simulation laboratory	July, 2007 to Dec., 2009	500K (RMB Yuan)	Principal investigator
3	Program for New Century	Investigations on key	Jan.,2005-Dec.,2007	500K (RMB	Principal

	Excellent Talents in University (NCET), Ministry of Education, China (No. NCET-04-0818)	technical and economic issues in establishing regional electricity markets in China		Yuan)	investigator
4	Zhejiang Provincial Outstanding Young Scientist Foundation, China (No. RC97015)	Fault diagnosis and state identification of unobserved protective relays in power systems	Jan.,1998-Dec.,2000	300K (RMB Yuan)	Principal investigator

2. Completed research projects from governmental organizations in China

No.	Source	Project Name	Duration	Fund	Role
1	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China (No. 200805610020)	Coordinated mechanism for investment and planning of generation and transmission in electricity market environment	Jan.,2009-Dec.,2011	60K (RMB Yuan)	Principal investigator
2	State Electricity Regulatory Commission, China	Development of an evaluation system for transmission system operation	Jan.,2010-Aug.,2011	100K (RMB Yuan)	Principal investigator
3	National Key Technology Research and Development Program, China	Technical measures for maintaining system security in the electricity market environment	Jul.,2008-Jun.,2010	100K (RMB Yuan)	Principal investigator
4	National Natural Science Foundation of China (No. 70673023)	Studies on generation investment incentives and capacity adequacy in electricity market environment	Jan., 2007-Dec., 2009	180K (RMB Yuan)	Principal investigator
5	National Natural Science Foundation of China (No. 50477029)	Power system fault diagnosis under incomplete information from protective relays	Jan.,2005-Dec.,2006	200K (RMB Yuan)	Principal investigator
6	National Natural Science Foundation of China (No. 59407003)	Applications of adaptive optimization theory in large-scale power systems	Jan.,1995-Dec.,1997	70K (RMB Yuan)	Principal investigator
7	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China (No. 2000033530)	Studies on fault diagnosis and state identification of protective relays in power systems	Jan.,2001-Dec.,2003	50K (RMB Yuan)	Principal investigator
8	China Post-doctoral Fellow Foundation	Applications of artificial neural networks in large-scale power systems	Jan.,1992-Dec.,1992	5K RMB Yuan+1K US Dollar	Principal investigator
9	National Basic	Research on improvement of	Sep.,2004-Aug.,2009	250K (RMB	Principal

	Research Program (973 Program), China (No. 2004CB217905) (The 5th sub-project)	the reliability of large-scale interconnected power systems in electricity market environment		Yuan)	investigator
10	National Basic Research Program (973 Program), China (No. G1998020307) (The 7th sub-project)	Important scientific problems in disaster prevention and economic operation of large-scale power systems in China	Oct.,1998-Sep.,2003	3450K (RMB Yuan)	Co-investigator
11	National Natural Science Foundation of China (No. 50407013)	Studies on the operation of pumped storage power stations in the electricity market environment	Jan.,2005-Dec.,2005	80K (RMB Yuan)	Co-investigator
12	National Natural Science Foundation of China (No. 58977302)	Secure and economic control of multi-regional interconnected power systems	Jan.,1990-Dec.,1992	30K (RMB Yuan)	Co-investigator
13	National Natural Science Foundation of China (No. 59077300)	Security analysis and control in large-scale power systems employing artificial neural networks	Jan.,1991-Dec.,1993	40K (RMB Yuan)	Co-investigator
14	National Natural Science Foundation of China (No. 59277299)	Short-term load forecasting with artificial neural network models	Jan.,1993-Dec.,1995	50K (RMB Yuan)	Co-investigator
15	National Natural Science Foundation of China (No. 59777011)	Applications of the rough set theory in large-scale complicated power systems	Jan.,1998-Dec.,2000	70K (RMB Yuan)	Co-investigator
16	National Climbing-B Plan, China	New theory and technology in modern power system operation	Jan.,1995-Dec.,1997	50K (RMB Yuan)	Co-investigator
17	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China	Applications of expert systems and artificial neural networks in power systems	Sep.,1991-Feb.,1994	20K (RMB Yuan)	Co-investigator
18	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China (No. 9333526)	Application of simulated evolution theory in power systems	Sep.,1993-Feb.,1996	32K (RMB Yuan)	Co-investigator
19	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China	Application of new intelligent computational models in power systems	Sep.,1994-Feb.,1997	36K (RMB Yuan)	Co-investigator
20	Zhejiang University	Power system alarm	Jun.,1997-Dec.,1998	20K (RMB	Principal

	Cao Guangbiao fund for hi-tech development, China	processing		Yuan)	investigator
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3. Completed projects from industry in China

Number	Source	Project Name	Duration	Fund	Role
1	Changzhi Power Supply Company of Shanxi Power Company, China	Harmonic control in power systems with large industrial customers producing polysilicon and calcium carbide	Mar.,2012-Dec.,2012	560K (RMB Yuan)	Principal investigator
2	Guangdong Power Dispatching and Communication Center, China	Load forecasting for holidays and special days in Guangdong power system	Jun.,2011-Dec.,2012	858K (RMB Yuan)	Principal investigator
3	Guangdong power dispatching and Communication Center, China	An adequacy evaluation system for Guangdong power system	Jan.,2010-Dec.,2011	1140K (RMB Yuan)	Principal investigator
4	China Southern Power Grid Dispatching and Communication Center	Study and application of economic operation, optimization techniques and management strategy in AC-DC power systems	Aug.,2011-Dec.,2011	826K (RMB Yuan)	Principal investigator
5	Shenzhen Power Supply Company, China	Science and technology development planning for Shenzhen power company	Jun.,2011-Dec.,2011	400K (RMB Yuan)	Principal investigator
6	China Southern Power Grid Corporation Ltd.	Electricity contract trading mechanism between different provinces	Jun.,2011-Dec.,2011	190K (RMB Yuan)	Principal investigator
7	Electric Power Research Institute of China Southern Power Grid (CSG)	Research on new energy technology development directions for China Southern Power Grid	Sep.,2011-Dec.,2011	175K (RMB Yuan)	Principal investigator
8	Gansu Electric Power Research Institute, China	Bilateral transaction mechanism for electricity trading in Gansu province	Apr.,2011-Dec.,2011	250K (RMB Yuan)	Principal investigator
9	International Copper Association (ICA)	Underground electricity transmission, copper grounding, motor driver and control technology development	Oct.,2010-Jun.,2011	150K (RMB Yuan)	Principal investigator
10	Jiangxi Power Company, China	Impact analysis of the extensive use of electric vehicles on Jiangxi power system security operation and social development	Jan.,2011-Dec.,2011	410K (RMB Yuan)	Principal investigator

11	North China Power Grid Company, China	Demand and technical analysis on bilateral transactions in North China power system	Jan.,2011-Sep.,2011	450K (RMB Yuan)	Principal investigator
12	Guangdong Yuedian Group Company, Ltd., China	Electricity trading mechanism for “West-to-East power transmission project” in southern China power system in the “12 th five-year plan” period	Jan.,2010-Dec.,2010	465K (RMB Yuan)	Principal investigator
13	China Southern Power Grid Corporation Ltd.	Study on “West-East power transmission project” power trading mechanism in southern china power grid	Jan.,2010-Dec.,2010	200K(RMB Yuan)	Principal investigator
14	Foshan Power Supply Company, China	Research and development of a pre-alarming and defense decision-making support system for Foshan power system	Mar.,2009-Dec.,2010	1950K (RMB Yuan)	Principal investigator
15	Guangdong Power Dispatching and Communication Center, China	Load characteristic analysis and load forecasting system development in energy conservation and emission reduction environment for Guangdong power system	Apr.,2009-Dec.,2010	582K (RMB Yuan)	Principal investigator
16	State Grid Power Economics Research Institute, China	Security issues in typical foreign electricity markets and software development	Jul.,2007-Dec.,2010	400K (RMB Yuan)	Principal investigator
17	East China Power Grid Company, China	Comparisons between Australian electricity market and East China electricity market	Dec.,2008-Dec.,2010	400K (RMB Yuan)	Principal investigator
18	Guangdong Yuedian Group Company, Ltd., China	Development of the strategy for Yuedian Group Company in the energy-saving dispatching environment	Jul.,2009-Dec.,2010	480K (RMB Yuan)	Principal investigator
19	Guangdong Electric Power Research Institute, China	Implementing strategies of energy performance contracting in Guangdong power company	Aug.,2010-Dec.,2010	380K (RMB Yuan)	Principal investigator
20	Guangdong Yuedian Group Company, Ltd., China	Ancillary service assessment, compensation and market mechanism	Sep.,2010-Jun.,2011	480K (RMB Yuan)	Principal investigator
21	Guangdong	Studies on multilateral	Mar.,2009-Jun.,2010	790K (RMB Yuan)	Principal

	Yuedian Group Company, Ltd., China	electricity trading in the southern China region		Yuan)	investigator
22	Guangdong Yuedian Group Company, Ltd., China	Generation right trading scheme in Guangdong province	Jun.,2009-Jun.,2010	400K (RMB Yuan)	Principal investigator
23	Fujian Power Company, China	Research and development of electricity trading risk assessment and control system in electricity market environment	Jan.,2008-May,2010	490K (RMB Yuan)	Principal investigator
24	China Southern Power Grid Dispatching and Communication Center	Frequency regulation pattern in China southern power grid	Feb.,2009-May,2010	260K (RMB Yuan)	Principal investigator
25	Jiangxi Power Company, China	Intelligent alarm processing and fault diagnosis in digital substations	Aug.,2008-Dec.,2009	720K (RMB Yuan)	Principal investigator
26	Fujian Power Company, China	Software development for power system stabilizer (PSS) parameters' optimization and coordinated control	Aug.,2008-Jun.,2009	190K (RMB Yuan)	Principal investigator
27	Guangdong Power Dispatching and Communication Center, China	Evolution of 220 kV power equipment dispatching relationship transfer and its group-supply network based pattern	Oct.,2008-Oct.,2009	160K (RMB Yuan)	Principal investigator
28	State Electricity Regulatory Commission (key project in 2006), China	Development of an electricity market evaluation system	Sep.,2006-Sep.,2009	660K (RMB Yuan)	Principal investigator
29	Guangdong Nuclear Power Corporation, China	Policy research on participation of nuclear power plants in ancillary service provisions	Feb.,2009-Oct.,2009	150 K(RMB Yuan)	Principal investigator
30	International Copper Association (ICA), China	Economic current density update and related methods	Dec.,2006-Dec.,2008	200K (RMB Yuan)	Principal investigator
31	Guangdong Yuedian Group Company, Ltd., China	Development of ancillary service compensation rules for southern China regional electricity market	Nov.,2006-Dec.,2008	480K (RMB Yuan)	Principal investigator

32	Guangdong Power Dispatching and Communication Center, China	AGC operating index assessment system and AGC compensation mechanism considering CPS qualification rate in Guangdong power system	May.,2008-Dec.,2008	250K(RMB Yuan)	Principal investigator
33	Northwest Power Grid Company, China	Comprehensive impact analysis of the energy-saving dispatching and development of the implementation scheme	Mar.,2008-Nov.,2008	170K (RMB Yuan)	Principal investigator
34	Fujian Power Company, China	Studies on voltage dip/sag standards in power systems	Aug.,2008-Dec.,2008	190K (RMB Yuan)	Principal investigator
35	Guangdong Power Dispatching and Communication Center, China	Development of an electricity market assessment and management system (the theoretical aspect)	Sep.,2008-Dec.,2008	100K (RMB Yuan)	Principal investigator
36	Guangdong Power Dispatching and Communication Center, China	An assessment system for generation plant dispatching and operation security management (the theoretical aspect)	Oct.,2008-Dec.,2008	46.7K (RMB Yuan)	Principal investigator
37	Guangdong Power Dispatching and Communication Center, China	Development of a decision-support expert system for fault analysis in Guangdong power system	Jun.,2007-Dec.,2007	250K (RMB Yuan)	Principal investigator
38	Guangdong Power Dispatching and Communication Center, China	Frequency regulation strategy in Guangdong power system in the “12 th five-year plan” period	Aug.,2007-Dec.,2007	270K (RMB Yuan)	Principal investigator
39	Nanhai Power Supply Company, China	Marketing strategy in electricity retail markets	Jul.,2007-Dec.,2007	195K (RMB Yuan)	Principal investigator
40	Guangdong Power Dispatching and Communication Center, China	On-line estimation of generation costs in Guangdong power system	Sep.,2006-Dec.,2006	200K (RMB Yuan)	Principal investigator
41	Guangzhou Pumped Storage Power Plant, China	Development of operating strategies for Guangzhou pumped storage power plant in electricity market environment	May.,2005-Dec.,2006	390K (RMB Yuan)	Principal investigator
42	Shenzhen Power Company, China	Maintenance scheduling of generation units in electricity market environment	Jan.,2005-Dec.,2006	288K (RMB Yuan)	Principal investigator
43	Zhaoqing Power Company, China	Evaluating the impacts of Guangdong industrial	Oct.,2006-Dec.,2006	47.5K (RMB Yuan)	Principal investigator

		reorganization on power load demand			
44	Zhongshan Power Company, China	Optimal maintenance and replacement strategies for power transformers and circuit breakers	Aug.,2004-Dec.,2006	200K (RMB Yuan)	Principal investigator
45	Jiangsu Power Company Technical Center, China	Fault diagnosis software development for power substations	Jul.,2005-Dec.,2006	250K (RMB Yuan)	Principal investigator
46	Northwest Power Grid Company, China	Risk assessment for Northwest power company in electricity market environment	Jan.,2003-Jun.,2004	680K (RMB Yuan)	Co-investigator
47	State Grid Corporation of China, China	Investigation of the impacts of different electricity market models in China on the security of power system operation	Sep.,2003-Dec.,2004	700K (RMB Yuan)	Co-investigator
48	State Grid Corporation of China, China	Three-Gorge electricity market design (Study on trading pattern, operating rules, tie-line transmission costs and network congestions in the Three-Gorge electricity market)	Jan.,2001-Nov.,2001	350K (RMB Yuan)	Co-investigator
49	Zhejiang Power Company, China	Software development for transmission line loss analysis and calculation	Jan.,1992-Dec.,1994	69K (RMB Yuan)	Principal investigator
50	Zhejiang Power Company, China	Implementation of on-line power system fault diagnosis software package for Zhejiang power system	Jan.,1995-Dec.,1997	90K (RMB Yuan)	Principal investigator

4. On-going research projects from governmental organizations in China

Number	Source	Project Name	Duration	Fund	Role
1	National High Technology Research and Development Program of China (863 Program) (No. 2011AA05A105)	Research and demonstration of key technologies for regional power systems with high penetration of intermittent generation	Jan.,2011-Dec.,2014	3800K (RMB Yuan)	Principal investigator
2	National Basic Research Program of China (973 Program) (The 2th sub-project) (No. 2013CB228202)	The aggregated characteristics and bi-directional energy adjustment mechanism in power systems with large	Jan.,2013-Dec.,2017	2800K (RMB Yuan)	Principal investigator

		amount of plug-in electric vehicles			
3	National Key Technology Research and Development Program of China (No. 2011BAA07B02)	Study on integrated monitoring and control support platform for combined generation system	Sep.,2011-Jul.,2013	850K (RMB Yuan)	Principal investigator
4	National Natural Science Foundation of China (No. 51177145)	Modeling, analysis and control of cyber physical power systems	Jan.,2012-Dec.,2015	550K (RMB Yuan)	Principal investigator
5	Specialized Research Fund for the Doctoral Program of Higher Education, Ministry of Education, China (20120101110112)	Networked control of electric vehicles by cyber physical power systems	Jan.,2013-Dec.,2015	120K (RMB Yuan)	Principal investigator
6	National Natural Science Foundation of China (No. 51007080)	Complex large group Decision-making Methods Considering Information Uncertainty and its Application on Black-start Decision-making	Jan.,2011-Dec.,2013	170K (RMB Yuan)	Co-investigator
7	National Natural Science Foundation of China (No. 51107114)	Electric vehicle dispatch and networked control	Jan.,2012-Dec.,2014	240K (RMB Yuan)	Co-investigator
	National High Technology Research and Development Program of China (863 Program) (No. 2011AA05A105)		Jan.,2015-Dec.,2017		Co-investigator
	National Natural Science Foundation of China (No. **)	Coordinated planning of the charging service network and distribution system for accommodating extensive use of electric vehicles	Jan.,2015-Dec.,2018		Principal investigator

5. Ongoing projects from industry in China

Number	Source	Project Name	Duration	Fund	Role
1	Zhejiang Power Company, China	Theoretical studies on real-time risk pre-control and	Jun.,2011-Jun.,2013	1980K (RMB Yuan)	Principal investigator

		decision-making support system for a provincial power system			
2	Henan Power Company, China	Study on electricity transaction decision-making, benefit analysis, risk assessment and transaction platform development for Henan power system	Oct.,2011-Jun. 2013	750K (RMB Yuan)	Principal investigator
3	TE Connectivity (Shanghai, China)	Power grid for EV era	Sep.,2011-Jun.,2013	20K (US Dollar)	Principal investigator
4	Alstom Grid Technology Center Co., Ltd., China	Fault diagnosis for China Southern Power Grid	Jan.,2012-Jun.,2013	350K (RMB Yuan)	Principal investigator
5	Gansu Electric Power Research Institute, China	The electricity pricing mechanism for electricity loads in Gansu agriculture areas	Feb.,2012-Jun.,2013	162K (RMB Yuan)	Principal investigator
6	Gansu Electric Power Research Institute, China	Impacts of smart grids on the development strategy of Gansu local economics and society	Feb.,2012-Jun.,2013	160K (RMB Yuan)	Principal investigator
7	Electric Power Research Institute of China Southern Power Grid, China	Transmission pricing for the key lines from west to east power supply in China Southern Power Grid	Nov.,2012-Dec.,2013	1300K (RMB Yuan)	Principal investigator
8	Electric Power Research Institute of Fujian Electric Power Company, China	Key technology and coordinated strategies of integrating charging stations of electric vehicles into distribution systems	Nov.,2012-Dec.,2013	315K (RMB Yuan)	Principal investigator
9	Electric Power Research Institute of China Southern Power Grid, China	The principle of developing a simulation platform for electricity price demand analysis	Jan.,2013-Aug.,2013	395K (RMB Yuan)	Principal investigator
10	Electric Power Research Institute of Zhejiang Electric Power Company, China	Power quality in an island-based microgrid	Jun.,2012-Jun.,2013	250K (RMB Yuan)	Principal investigator

6. Completed projects in Australia, Hong Kong and Singapore

Number	Source	Project Name	Duration	Fund	Role
1	Australia Research Council (ARC)	Understanding the interactions between	Jan.,2008-Dec.,2009	430 K (Australia)	Co-investigator

	Discovery Project (undertaken by the University of New South Wales, Australia)	emissions trading and wholesale electricity markets		Dollars)	
2	The Commonwealth Scientific and Industrial Research Organisation (CSIRO) Cluster Project (Intelligent Grid)	A complex system approach to the network, and economic modelling of distributed generation and interruptible load (P3: Optimal sitting and dispatch of distributed generators)	Jan.,2009-Dec.,2011	1318 K (Australia Dollars)	Co-investigator
3	Research Grants Council (RGC), Hong Kong (The Earmarked Research Grant of RGC for 2004-2005)	Generation capacity adequacy in deregulated electricity markets	Sept.,2004-Aug.,2006	337.631 K (HK dollars)	Principal investigator
4	Research Grants Council (RGC), Hong Kong (The Earmarked Research Grant of RGC for 2003-2004)	Studies on strategic bidding, identification of tacit collusion and assessment of market power in deregulated electricity markets	Sept.,2003-Aug.,2005	377.149 K (HK dollars)	Principal investigator
5	The University of Hong Kong (Seed Funding for Basic Research)	Studies on appropriate coordination mechanism and investigation on optimal strategies for maintenance scheduling of generating units in the deregulated electricity market environment	Feb.,2004-Jan.,2005	116 K (HK dollars)	Principal investigator
6	The University of Hong Kong (Seed Funding for Basic Research)	Optimal transmission system planning in the deregulated electricity market environment	Jan.,2003-Dec.,2003	112 K (HK dollars)	Principal investigator
7	The University of Hong Kong (Seed Funding for Basic Research)	Studies on strategic issues in competitive electricity markets	Nov.,2001-Oct.,2002	106 K (HK dollars)	Principal investigator
8	The University of Hong Kong	Merit award for successfully RGC grant application	Sept.,2004-Aug.,2005	50 K (HK dollars)	Principal investigator

9	The University of Hong Kong	Merit award for successfully RGC grant application	Sept.,2003-Aug.,2004	50 K (HK dollars)	Principal investigator
10	Mirant Asia-Pacific Limited (Hong Kong)	Studies on the prospecting generation market in Guangdong	Sept.1, 2001-May 31, 2002	70 K (US dollars)	Co-investigator
11	The Hong Kong Polytechnic University	Bidding strategies for generation companies in competitive electricity markets	July, 1998-March, 2001	1200 K (HK dollars)	Co-investigator
12	The National University of Singapore	Alarm processing and fault diagnosis in power systems	Feb., 1995-Jan., 1997	180 K (Singapore dollars)	Co-investigator

7. Ongoing collaborative projects in Australia

Number	Source	Project Name	Duration	Fund	Role
1	Australia Research Council (ARC) Discovery Project (undertaken by Queensland University of Technology, Australia)	Robust electricity networks accommodating high levels of renewable energy	Jan., 2012-Dec., 2014	320 K (Australia Dollars)	Co-investigator
2	Research Collaboration Awards, Univeristy of Western Australia (UWA)	A cyber-physical-system-based networked control for electric vehicles	Jan., 2013-Dec., 2013	15 K (Australia Dollars)	Co-investigator

Granted Invention Patents in China

Inventors	Title of the invention	Number of granted invention patent	Granted date
Chenxi WU, Fushuan WEN , Qiaoping LIU	Method for evaluating operation status of power system by utilizing probability power flow	ZL 2013 1 0148662.9	Dec. 10, 2014
Chao GAO, Li LI, Jianhui LI, Xunping YANG, Fushuan WEN , Yan YANG, Jie WANG, Wei TAN, Rui CHEN, Jianxi LIN, Kuo XIN, Fei LONG, Wentao GUO, Hongyuan GU	Method and equipment for determining transmission sections considering critical branches	ZL 2012 1 0064374.0	Dec. 17, 2014
Jianhui LI, Li LI, Xunping YANG, Chao GAO, Fushuan	An evaluation system for power system adequacy	ZL 2012 1 0064373.6	March 13, 2015

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Awards and honors

- National Natural Science Award of China (1997). *This is the most prestigious academic award in China.*
- **Research Excellence Award, Universiti Teknologi Brunei (UTB), Brunei; July 14, 2016.**
- Special allowance for outstanding academic contributions, awarded by *State Council, China* (2008).
- Special allowance for university distinguished professorship, awarded by *Guangdong provincial government, China* (2005-2009)
- Science and Technology Advancement Award, *Zhejiang Provincial Government, China* (2010).
- Science and Technology Advancement Award, *Zhejiang Provincial Government, China* (2005).
- Science and Technology Advancement Award, *Ministry of Education, China* (2003).
- Science and Technology Advancement Award, *Zhejiang Provincial Government, China* (2003).
- Science and Technology Advancement Award, *Ministry of Education, China* (1998).
- Science and Technology Advancement Award, *Zhejiang Province, China* (1997).
- Zhejiang Provincial Top Young Scientist Award, *Zhejiang Provincial Government, China* (1997).
- Best Young Teacher Award, *Zhejiang University, China* (1994).
- First Class Postdoctoral Fellow Performance Bonus, awarded by *National University of Singapore* (1996).
- Several best paper prizes from *Chinese Society for Electrical Engineers (CSEE)* and *Zhejiang Provincial Science and Technology Committee.*
- **Listed in "Most Cited Chinese Researchers" in 2015 by Elsevier (released on January 26, 2016 by Elsevier).**
- **Listed in "Most Cited Chinese Researchers" in 2016 by Elsevier (released on February 27, 2017 by Elsevier).**

Guest professorship, editorship and membership:

- Editor of *IEEE Transactions on Power Systems*, since 2017.
- Editor of *IEEE Power Engineering Letters*, since 2017.
- Associate editor of *IET Generation, Transmission and Distribution*, since 2015.
- Associate editor of *ASCE's Journal of Energy Engineering*, since 2013.
- Associate editor of *Springer's Journal of Modern Power Systems and Clean Energy*, since 2016.
- Editor of a special section on *"Integration of ultra-high levels of variable renewable*

energy into power grids", *Journal of Modern Power Systems and Clean Energy*, to be published in Vol.5, No.6, November 2017.

- Co-Guest Editor of a special issue of *IET Generation, Transmission and Distribution* on "Optimal Utilization of Storage Systems in Transmission and Distribution Systems", Vol.10, No.3, 2016.
- Guest editor of a special issue on "Restructuring and sustainable development for China's Electric Power Industry", *ASCE's Journal of Energy Engineering*, Vol.137, No.3, 2011.
- Guest editor of a special issue on "Impacts of Emission Trading on Power Industry and Electricity Markets", *International Journal of Energy Sector Management*, Vol.5, No.3, 2011.
- Regional Editor for Asia of *International Journal of Renewable Energy Technology*, 2008-2010.
- Member of the Editorial Board of *Journal of Modern Power Systems and Clean Energy*, since 2013.
- Member of the Editorial Board of *International Journal of Emerging Electric Power Systems*, since 2005.
- Member of the Editorial Board of *Journal of Automation of Electric Power Systems* (in Chinese), since 1997.
- Member of the Editorial Board of *Journal of Electric Power Automation Equipment* (in Chinese), since 2006.
- Member of the Editorial Board of *Journal of Power System Technology* (in Chinese), since 2011.
- Member of the Editorial Board of *Journal of Electric Power* (in Chinese), since 2016.
- Member of the Editorial Board of *Journal of Electric Power Science and Engineering* (in Chinese), since 2002.
- Member of the Editorial Board of *Journal of Modern Electric Power* (in Chinese), since 2004.
- Member of the Editorial Board of *Journal of Electric Power Science and Technology* (in Chinese), since 2007.
- Member of the Editorial Board of *Journal of Guangdong Electric Power* (in Chinese), since 2007.
- Member of the Editorial Board of *Journal of Demand Side Management* (in Chinese), since 2007.
- Member of the Editorial Board of *Scientific Journal of Management Science and Engineering (SJ MSE)* (in English) since 2011.
- Member of the Editorial Board of *Journal of Transmission and Distribution Engineering and Technology (TDET)* (in English) since 2012.
- Guest editor of a special issue on "Interactions between Electric Vehicles and Power Systems", *Journal of Automation of Electric Power Systems* (in Chinese), Vol.35, No.14, 2011.
- Guest editor of a special issue on "Artificial Intelligence Applications in Power Systems", *Journal of Automation of Electric Power Systems* (in Chinese), Vol.24, No.2, 2000.
- Guest editor of a special issue on "Recent Development in Electricity Markets", *Journal of Electric Power Science and Technology* (in Chinese), Vol.23, No.3, 2008.
- Chief editor of a 5-book series on electricity markets, China Electric Power Press, 2006-2012.
- Guest professor of *Guizhou University*, Guizhou Province, China, since 1999.

- Guest professor of *Zhengzhou University*, Henan Province, China, since 2004.
- Guest professor of *Jinan University*, Guangdong Province, China, since 2006.
- Guest professor of *Changshan University of Science and Technology*, since 2006.
- Guest professor of *China Jiliang University*, since 2011.
- Senior member of Chinese Society for Electrical Engineers (CSEE) since 1997.

Industry collaborations

Having extensive collaborations with the following organizations through consulting services or other activities:

- State Electricity Regulatory Committee, Beijing, China
- State Grid Corporation of China, Beijing, China
- China Southern Power Grid Corporation, Guangzhou, China
- State Grid Power Dispatching and Communication Center, Beijing, China
- Southern Grid Power Dispatching and Communication Center, Beijing, China
- East China Power Grid Company, Shanghai, China
- North China Power Grid Company, Shanghai, China
- Northwest China Power Grid Company, Xi'an, China
- Zhejiang Power Company, Hangzhou, China
- Guangdong Power Company, Guangzhou, China
- Fujian Power Company, Fuzhou, China
- Jiangsu Power Company, Nanjing, China
- Jiangxi Power Company, Nanjing, China
- Henan Power Company, Zhengzhou, China
- Guangdong Yudian Generation Group Company, Guangzhou, China
- Southern Grid Electric Power Research Institute
- Guangdong Electric Power Research Institute
- Fujian Electric Power Research Institute
- Guangdong Power Dispatching and Communication Center
- Zhejiang Power Dispatching and Communication Center
- Holley Technology Company, Hangzhou, China
- Nanjing Automation Research Institute (NARI), Nanjing, China
- Henan Power Company, China
- Shenzhen Power Company, China
- Zhuhai Power Company, China

Academic services

1. Member of the International Advisory Committee, *International Conference on Advances in Big Data, Computing and Data Communication Systems (ICABCD 2018)*, August 6-7, 2018, Durban, South Africa.
2. Member of the Advisory Committee, *the 4th International Conference on Electrical, Computer and Electronics (UPCON 2017)*, Oct. 26-28, 2017, Mathura, India.

3. Associate editor, member of the technical program committee, and session chair, *2016 IEEE PES Innovative Smart Grid Technologies*, Melbourne, Australia, Nov. 28-Dec.1, 2016.
4. Member of International Advisory Committee, *2016 IEEE Region 10 Humanitarian Technology Conference*, December 21-23, 2016, Agra, India.
5. Member, International Advisory Board, *the 2016 International Conference on Computational Intelligence in Information Systems (CIIS'2016)*, Brunei Darussalam, Nov 18-20, 2016.
6. Member, Technical Programme Committee, *the 6th IET Brunei International Conference on Engineering and Technology (BICET' 2016)*, Brunei Darussalam, Nov 14-16, 2016.
7. Member, International Advisory Committee and Session Chair on "*Power, Energy and Power Electronics*", *IEEE TENCON 2015 Conference*, Nov. 1-4, 2015, Macau.
8. Member, International Advisory Committee, *IEEE International Conference on Computing, Communication and security (ICCCS-2015)*, Le Meridien, Pointe Aux Piments Pamplemousses, Mauritius, Dec 4-5, 2015.
9. Member, International Advisory Committee, *the 7th IEEE PES Asia-Pacific Power and Energy Engineering Conference 2015 (IEEE PES APPEEC 2015)*, Nov. 15-18, 2015, Brisbane, Australia.
10. Chairman, *Plenary Session (II): Advancement in power system security and economics, The 10th IET International Conference on Advances in Power System Control, Operation and Management (APSCOM 2015)*, Nov. 8-12, 2015, Hong Kong.
11. Chairman, Special Session on "Recent progress in smart grids", *the 6th IEEE PES Asia-Pacific Power and Energy Engineering Conference 2014 (IEEE PES APPEEC 2014)*, Dec.7-10, 2014, Hong Kong.
12. Chairman of sessions, *the IET 5th Brunei International Conference on Engineering and Technology (BICET 2014)*, Nov. 1-3, 2014, Bandar Seri Begawan, Brunei.
13. Member, *Chinese National Committee of CIRED*, since 2008.
14. Technical Program Committee Chairman, *IEEE International Conference on Electric Utility Deregulation and Restructuring and Power Technologies 2004 (DRPT 2004)*, April 5-8, 2004, Hong Kong.
15. Member of the Organization Committee, *IEEE Industry Applications Society Annual Meeting 2005*, Oct. 1-7, 2005, Hong Kong.
16. Member of the International Advisory Committee, *International Conference on Power Systems: Challenges to Electric Utilities in the New Millennium*, Sept. 22-25, 2004, Kathmandu, India.
17. Member of the Technical Program Committee and Session Chairman, *IEEE/PES Transmission and Distribution Conference and Exhibition Asia Pacific*, August 14-18, 2005, Dalian, China.
18. Member of the International Advisory Committee, *The 8th International Power Engineering Conference (IPEC 2007)*, Dec 3-6, 2007, Singapore
19. Panelist: in Panel Session 3: Electricity Market Development and Experiences, *International Conference on Power System Technology (PowerCon 2002)*, Oct.13-17, 2002, Kunming, China.
20. Member of the Technical Program Committee, *IEEE Transmission & Distribution Conference and Exposition-Latin America*, August 15-18, 2006, Caracas, Venezuela.
21. Member of the Technical Program Committee, *8th IET (formerly IEE) International Conference on Advances in Power System Control, Operation and Management (APSCOM)*, Nov. 8-11, 2009, Hong Kong.

22. Panelist: in Panel Session 4: Expansion Planning Procedures and Investment Problems in Market Environment, *International Conference on Power System Technology (PowerCon 2002)*, Oct.13-17, 2002, Kunming, China.
23. Referees: *IEEE Transactions*; *IEE Proceedings*; *International Journal of Electrical Power & Energy Systems*; *Journal of Electric Power Systems Research*; *Journal of Computers & Electrical Engineering*; *Journal of Engineering Intelligent Systems*; *Proceedings of Chinese Society for Electrical Engineers (CSEE)*; *Transactions of China Electrotechnical Society*; *Journal of Automation of Electric Power Systems (AEPS)*; *Journal of Power System Technology*; *Journal of Zhejiang University*; *Journal of Tianjin University*; *Journal of Shanghai Jiaotong University*; *Journal of Xi'an Jiaotong University*; *Power Systems Computation Conference (PSCC)* etc.

Symposiums, workshops and forums organized

1. Advanced workshop on *smart grids*, sponsored by Zhejiang University etc, July 28-31, 2013, Suzhou, China.
2. Advanced workshop on *smart grids*, sponsored by Zhejiang University etc, September 12-17, 2010, Hangzhou, China.
3. Workshop on *risk management and security in regional electricity markets*, sponsored by *Journal of Automation of Electric Power Systems* and *The University of Hong Kong*, May 11-13, 2004, Nanjing, China.
4. Workshop on *regional electricity markets*, sponsored by *South China University of Technology* and *The University of Hong Kong*, Nov. 17-21, 2003, Foshan, Guangzhou, China.
5. *The first international forum on key technology in electricity markets*, co-sponsored by *The University of Hong Kong* and *Holley Technology Company*, July 27-28, 2002, Shenzhen, China.
6. Workshop on *new development of electricity markets*, sponsored by *The University of Hong Kong*, May 13-18, 2002, Shenzhen, China.
7. Advanced symposium on *electricity markets*, sponsored by *The University of Hong Kong*, May 21-23, 2001, Shenzhen, China.
8. Advanced symposium on *electricity markets*, co-sponsored by *Zhejiang University*, *The Hong Kong Polytechnic University* and *Zhejiang Provincial Power Company*, Nov.15-22, 2000, Hangzhou, China.

Supervised PhD and ME students:

Totally, 28 PhD students have been supervised and awarded PhD degrees, and around 70 master students awarded master degrees.

Details of supervised (completed) PhD theses:

1. Yan Dai. *Reactive power pricing in electricity market*. Zhejiang University, China, September 2000.
2. Li Ma. *Bidding strategies for generation companies in the electricity market environment*. Zhejiang University, China, May 2003.
3. Xueshun Zhao. *Procurement and pricing of AGC and operating reserve in electricity market environment*. Zhejiang University, China, September 2003.

4. Ning Yang. *Research on transmission system planning based on chance constrained programming*. Zhejiang University, China, June 2005.
5. Yong Wang. *Research on generation investment decision-making and generation capacity adequacy in electricity market environment*. Zhejiang University, China, June 2005.
6. Nan Xu. *Research on reactive power related issues in electricity market environment*. Zhejiang University, China, August 2006.
7. Le Wang. *Operating reserve procurement in deregulated power systems*. Zhejiang University, China, August 2006.
8. Nuo Xu. *Studies on generation investment decision-making and regulation in electricity market environment*. Zhejiang University, China, June 2007.
9. Gang Lu. *Studies on the mid-term and long-term generation capacity adequacy in electricity market environment*. Zhejiang University, China, July 2008.
10. Zhenzhi Lin. *The theories and methods for optimizing power system restoration based on multi-attribute decision-making and complex network theory*. South China University of Technology, Dec. 2008.
11. Jian Xiao. *Studies on congestion dispatch in electricity market and energy-saving environment*. South China University of Technology, Dec. 2008.
12. Fuqiang Zhang. *Research on reactive power and electricity price risk management in electricity market environment*. Zhejiang University, China, Sept. 2009.
13. Guozhong Liu. *Impacts of emissions trading on investment strategies and market operation of generation companies*. South China University of Technology, May 2010.
14. Hui Yang. *Research on coordination of protective relays in distribution systems with distributed generations*. South China University of Technology, May 2010.
15. Shimin Yi. *Research on power system dispatch and security in the electricity market and energy saving dispatch environment*. South China University of Technology, June 2011.
16. Binbin Xun. *Investigations on interactions between electricity markets and emissions trading markets*. South China University of Technology, June 2011.
17. Liang Chen. *Development of optimization models and key technologies for the whole process of energy-saving generation dispatch*. South China University of Technology, July 2012.
18. Jing Zheng. *Transmission system expansion planning considering wind farms*. Zhejiang University, China, May 2013.
19. Zhipeng Liu. *Investigations on impacts of distributed generators and electric vehicles on distribution system planning and operation*. South China University of Technology, China, May 2013.
20. Dan Zheng. *Investigations on the impacts of electric vehicles on power systems and their interactions*. South China University of Technology, China, June 2013.
21. Ping He. *Investigations on impacts and control methods of power system stability with wind power integration*. South China University of Technology, China, May 2014.
22. Weifeng Yao. *Power system planning and operation strategies considering extensive integration of electric vehicles*. Zhejiang University, China, June 2014.
23. Guibin Wang. *Optimal dispatch and charging station planning of electric vehicles in distribution systems with renewable generation*. Zhejiang University, China, June 2014.
24. Lingrong Lu. *Integration of plug-in electric vehicles in power systems: intelligent network control, unit commitment and economic analysis*. Zhejiang University, China, June 2014.

25. Chenxi Wu. *Investigations on impacts of the randomness of wind/photovoltaic generation and electric vehicles charging/discharging on distribution systems*. Zhejiang University, China, March 2015.
26. Xiaming Ye. *Performance analysis of communication networks and cyber security assessment of cyber physical power systems*. Zhejiang University, China, September 2015.
27. Weijia Liu. *Decision-making and optimization strategies for power system restoration*. Zhejiang University, China, June 2016.
28. Yan Zhang. *Enhanced models and methods for power system fault diagnosis utilizing temporal information of alarm messages*. Zhejiang University, China, June 2016.