



Prof. Dr. Fei Wang
IEEE Senior Member
Director of E.E. Dept.



Affiliation:

Shanghai University, Mail Box 172,
No.99 Shangda Road, 200444,
Shanghai, China.

Email: f.wang@shu.edu.cn

Education:

Jan. 2007 – Oct. 2010	Ph. D in Power Electronics, Eindhoven University of Technology, the Netherlands
Sep. 2002 – Mar. 2005	Master in Power Electronics, Zhejiang University, China
Sep. 1998 – Jul. 2002	Bachelor in Applied Electronics Technology, Zhejiang University, China

Employment History:

Jan. 2020- Present	Director, Department of Electrical Engineering
Oct. 2018- Oct. 2019	Deputy Director, Office of Degree and Discipline Construction, Graduate School of Shanghai University
Jun. 2016 – Oct. 2018	Vice Director, Department of Automation, Shanghai University, China
Mar.2018 – Present	Professor, Shanghai University, China
July 2012 – Feb. 2018	Associate Professor, Shanghai University, China
Dec. 2010 – Jun. 2012	Assistant Professor, Shanghai University, China
Apr. 2005 – Dec. 2006	R&D Engineer, Global Development Centre (GDC) of Philips Lighting Electronics, Shanghai, China

Research Expertise:

- Power electronics converters for renewable energy applications and electric drives
- Energy management of micro-grid and distributed energy systems
- Power quality enhancement and grid-interfacing system
- Modeling and analysis of micro-grid with large penetration of distributed generations
- E-capacitor elimination of LED drivers
- Design and optimization of PV power stations
- Systematic pre-diagnosis, fault prevention of energy conversion systems

Academic Accomplishments:

- Second class prize of science and technology progress award of China Power Supply Society, 2019
- Delta Young Scholar Award, by Delta Environmental & Educational Foundation, 2019
- Outstanding Young Talent of School of Mechatronics Engineering and Automation, SHU, 2019
- Third Class Prize of the Shanghai Scientific and Technological Progress Award, 2018
- Excellent Author Award, Proceedings of the Chinese Society for Electrical Engineering (CSEE), 2018
- Best Paper Award, IEEE International Conference on Information and Automation, Macao, 2017
- Annual Excellent Paper Award from the Journal of Power Supply, by China Power Supply Society, 2016
- One of the Ten Best Outstanding Teachers of the College, Shanghai University, 2015
- Outstanding Young Teacher of Shanghai University, 2014
- Outstanding Teacher of the Department of Automation, Shanghai University, 2012
- Shanghai Pu-Jiang Talent Scheme, Science and Technology Commission of Shanghai Municipality, 2011
- National Outstanding Abroad Student Award, by China Scholarship Council, in 2010
- Best paper award, IEEE Young Researchers Symposium, IAS/PELS/PES Benelux Chapter in 2008

Professional Activities:

- Visiting Professor, INSA de Lyon, France (2019)
- Key Technology Partner, University of Technology, Sydney (2017)
- Technical Committee member, Shanghai New Energy Industry Association (2014 -)
- Standing Committee Member, Youth Working Committee of China Power Supply Society (2014-)
- Invited Technical Consultant (part-time), CG Drives & Automation (Previous Emotron) (2012-2013)

- The Secretary of IEEE PELS-CPSS Shanghai Joint Chapter, (2018 -)
- IEEE Senior Member, (2016-)
-
- Associate Editor, IEEE Transactions on Industry Applications (2021-)
- Associate Editor, Chinese Journal of Electrical Engineering (2020-)
- Editorial Board, CPSS-Springer Power Electronics English series, (2019-)
- Editorial Board, International Journal of Emerging Electric Power Systems (2017-)
- Guest Editor, Special issue on “Power Converters for High Voltage DC Systems” in IET High Voltage, 2018

- Organizer, Special session on “Advanced Technologies for DC microgrid Plug-and-Play Operations”, IEEE ISIE, Delft, Netherlands, 2020
- Organizer, Special session on “Power conversion, energy management, and multi-energy complementarity in micro-grids”, IEEE IPEMC-ECCE Asia, Nanjing, 2020
- Session Chair, IEEE PEAC, Shenzhen, 2018
- Technical Program Committee Member, The 2nd IEEE International Power Electronics and Application Conference and Exposition, 2018
- Session Chair, International Power Electronics and Motion Control Conference - ECCE Asia, Hefei, 2016
- Topic Chair, International Workshop on Big Data and Smart City, Shanghai, 2014

Research Projects:

1. Research on the key technologies of converter operation control for multi-mode dc microgrid with time-varying structure (2020–2023), Natural Science Foundation of China (NSFC).
2. Onboard proton exchange membrane fuel cell system, (2020-2022), Shanghai Pudong New Area Science and Technology Development Fund, Cooperated with Shanghai EVERPOWER Technology Co., Ltd.
3. Intelligent perception system for the safety and reliability of power supplies used in distribution system, (2020-2021), Cooperated with Magtron Tech. Co., Ltd.
4. The National Key Research and Development Program of China – subproject of Integration Applications and Plug-and-Play Operation Theory of Structured DC Microgrid (2018.4-2021.3), Ministry of Science and Technology of China.
5. Energy Storage-interfacing System and Energy Management – subproject of Smart Regional Energy Internet (2017-2019), Science and Technology Commission of Shanghai Municipality (STCSM)
6. Key Technologies on Intelligent & Safe Operation of Power Electronic Systems (2017-2020), Science and Technology Commission of Shanghai Municipality (STCSM)
7. Modeling analysis and Mitigation Scheme of Multiple Resonances in Microgrid Consisting of Distributed Grid-connected Inverters (2016–2019), Natural Science Foundation of China (NSFC)
8. Microgrid modelling and simulation (2015–2018), Delta Environmental & Education Foundation, Major Program
9. Optimized control of regional energy supply based on CCHP system (2015-2017), Cooperated with HongQiao Energy Supply Service Company.
10. Experimental research and methodology optimization of PV station (2015-2016, Cooperated with Shanghai Baosteel Energy Tech. Co., Ltd.
11. Modeling Analysis and Mitigation Schemes of Harmonic Interactions Between Multiple Grid-connected Inverters and the Grid (2012 –2014), Natural Science Foundation of China.
12. Research on the harmonic interactions between distributed generation systems and distorted grids (2012 –2013), Delta Environmental & Education Foundation
13. Prediction and mitigation research on potential harmonic resonance in microgrids (2011 – 2013), Shanghai Pujiang Talent Program.

List of Selected Publications:

Books:

1. Tingzhang Liu, J. Zhao, and F. Wang, Modular Design Technology of LED Driver Power Supply, China Machine Press, 2018

International Journals:

2. L. Ren, S. Zhang, L. Li, X. Xu, Y. Zhang, F. Wang, Efficiency diagnosis and optimization in distributed solar plants, *Energy for Sustainable Development*, Volume 63, 2021, Pages 24-32.
3. Jingjie Ma, Shaohua Zhang, Lei Wu, Yikui Liu, Xian Wang, Xue Li, Fei Wang, Probabilistic evaluations on marginal price and capacity adequacy of power systems with price-elastic demand, *Electric Power Systems Research*, Volume 194, 2021, p.107045.
4. Y. Zhou, G. Chen, F. Wang, J. Zeng and L. Huang, A ZVZCS Hybrid Dual Full-Bridge Converter Suitable for Wide Input Voltage Range. *IEEE Transactions on Industrial Electronics*, vol. 68, no. 12, 2021, pp. 12058–12068.
5. Xiang Lin, Zhihui Jin, Fei Wang, Jian Luo, A Novel Bridgeless Cuk PFC Converter with Further Reduced Conduction Losses and Simple Circuit Structure, *IEEE Transactions on Industrial Electronics*, vol. 68, no. 11, 2021, pp. 10699–10708.
6. Hui Guo, Tianling Shi, Fei Wang*, Lijun Zhang, Zhengyu Lin, Adaptive Clustering-Based Hierarchical Layout Optimization for Large-Scale Integrated Energy Systems, *IET Renewable Power Generation*, vol. 14, no. 17, pp. 3336-3345, 2020

7. M. Eskandari, Li Li, M. H. Moradi, F. Wang, and F. Blaabjerg, A Control System for Stable Operation of Autonomous Networked Microgrids, *IEEE Transactions on Power Delivery*, 2020, 35(4): 1633-1647
8. G. Chen, Y. Liu, X. Qing, and F. Wang, Synthesis of Integrated Multiport DC–DC Converters With Reduced Switches, *IEEE Transactions on Industrial Electronics*, 2020, 67(6): 4536 - 4546.
9. Yan Du, Qingqing Sun, Xiangzhen Yang, Linbo Cui, Jian Zhang, Fei Wang, Adaptive Virtual Impedance of Grid-Tied Inverters to Enhance the Stability in a Weak Grid, *Journal of Electrical Engineering & Technology*, May 2019, 14(3), pp 1235–1246.
10. Hui Guo, Fei Wang*, Li Li, Lijun Zhang, and Jian Luo, A Minimum Loss Routing Algorithm Based on Real-Time Transaction in Energy Internet, *IEEE Transactions on Industrial Informatics*, 2019, 15(12): 6446-6456
11. Hui Guo, Fei Wang*, Lijun Zhang, and Jian Luo, A Hierarchical Optimization Strategy of the Energy Router-Based Energy Internet, *IEEE Transactions on Power Systems*, 2019, 34(6), 4177-4185.
12. Xiayun Feng, Fei Wang*, Chunhua Wu, Jian Luo, and Lijun Zhang, Modelling and Comparisons of Aggregated Flyback Micro-Inverters In Aspect of Harmonic Resonances With The Grid, *IEEE Transactions on Industrial Electronics*, 2019.66(1).276-285
13. Hui Guo, Fei Wang*, Geoff James, Lijun Zhang, and Jian Luo, Graph Theory Based Topology Design and Energy Routing Control of the Energy Internet, *IET Generation, Transmission & Distribution*, 2018, 12(20),4507 – 4514.
14. Fei Wang, Lijun Zhang, Xiayun Feng, Hui Guo, An Adaptive Control Strategy for Virtual Synchronous Generator, *IEEE Transactions on Industry Applications*, Vol. 54, No. 5, pp: 5124-5133, Sept./Oct. 2018.
15. Fei Wang, Xiayun Feng, Lijun Zhang, Yan Du, and Jianhui Su, Impedance-based Analysis of Grid Harmonic Interactions between Aggregated Flyback Micro-Inverters and The Grid, *IET Power Electronics*, 2018, 11(3): 453-459
16. Fei wang, Lin Li, Yuanxu Zhong, and Xinyi Shu, Flyback-based Three-Port Topologies for Electrolytic Capacitor-Less LED Drivers, *IEEE Transactions on Industrial Electronics*, vol. 64, no.7, pp. 5818-5827, July 2017
17. F. Wang, Z. Lei, X. Xu and X. Shu, Topology deduction and analysis of voltage balancers for DC micro-grid, *IEEE Journal of Emerging and Selected Topics in Power Electronics*, vol. 5, no. 2, pp-672-680, June 2017.
18. Li W., He Y., He X., Sun Y., Wang F. and Ma L., Series asymmetrical half-bridge converters with voltage autobalance for high input-voltage applications, *IEEE Trans. on Power Electronics*, vol. 28, no.8, pp. 3665-3674, Aug. 2013.
19. Wang F., Duarte J.L., Hendrix M.A.M., Ribeiro, P. F., Modeling and analysis of grid harmonic distortion impact of aggregated DG Inverters. *IEEE Transactions on Power Electronics*, vol. 26, no.3, pp. 786-797, March 2011.
20. Wang F., Duarte J.L., Hendrix M.A.M., Pliant active and reactive power control for grid-interactive converters under unbalanced voltage dips. *IEEE Transactions on Power Electronics*, vol. 26, no.5, pp. 1511-1521, May 2011.
21. Wang F., Duarte J.L., Hendrix M.A.M., Grid-interfacing converter systems with enhanced voltage quality for microgrid application — concept and implementation. *IEEE Transactions on Power Electronics*, vol. 26, no.12, pp.3501-3513, Dec. 2011.
22. Wang F., Duarte J.L., Hendrix M.A.M., Design and analysis of active power control strategies for distributed generation inverters under unbalanced grid faults. *IET Generation, Transmission & Distribution*, vol. 4, iss. 8, pp. 905-916, Aug. 2010.