HAOYU WANG

393 Huaxia M. Rd., SIST Bldg. #3-530, Pudong, Shanghai, China, 201210
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RESEARCH INTERESTS

- High-frequency power electronics.
- Efficient power conversion for next-generation electric vehicles.
- High-performance AI power supply in data centers.
- AI-enabled battery modeling and management.
- Energy harvesting and battery-free IoT.
- Low power electronics and power management IC.

EDUCATION

Ph.D.*(Dist. Diss.)* *Elect. Comput. Eng.* Univ. Maryland, College Park, USA 08/2014
Dissertation: Highly efficient SiC-based onboard chargers for plug-in electric vehicles.
Advisor: Alireza Khaligh

BEng *(Dist. Hons.)* *Electron. Info. Eng.* Zhejiang Univ., Hangzhou, China 06/2009

BEng *(Hons.)* *Mixed Class, CKC Hons. Col.* Zhejiang Univ., Hangzhou, China 06/2009

WORKING EXPERIENCES

Full Prof. *(IET Fellow)* *Sch. Info. Sci. Technol.*, ShanghaiTech Univ., China 11/2024 - present
Associate Prof. *Sch. Info. Sci. Technol.*, ShanghaiTech Univ., China 03/2020 - 11/2024
Assistant Prof. *Sch. Info. Sci. Technol.*, ShanghaiTech Univ., China 09/2014 - 03/2020

Director, *Sch. Info. Sci. Technol.*, ShanghaiTech Univ., China
Power Electronics And Renewable energies Laboratory(PEARL) 09/2014 - present

Visiting Academic Fellow, *Dept. Eng.*, Univ. Cambridge, UK
Electrical Power & Energy Conversion Group(EPEC) 05/2023 - 09/2023

Director, *Sch. Info. Sci. Technol.*, ShanghaiTech Univ., China
Center for intelligent Power & Energy Systems(CiPES) 09/2019 - 08/2023

System Engineer Intern, *GeneSiC Semiconductor(acquired by Navitas)*, Dulles, VA 05/2012 - 08/2012

Research Assistant, *Elect. Comput. Eng. Dpt.*, Univ. Maryland, College Park, USA
Maryland Power Electronics Lab(MPEL), supervised by Alireza Khaligh 12/2011 - 08/2014
Microsystems Lab, supervised by Robert W. Newcomb 09/2009 - 11/2011

Research Assistant, *Col. Elect. Eng.*, Zhejiang Univ., Hangzhou, China
Analog and Mixed-Signal IC Design Lab, supervised by Xiaobo Wu 01/2008 - 06/2009

HONORS AND SCHOLARSHIPS

- 2024 **Excellent Faculty Advisor**, Industrial Engagement, ShanghaiTech Univ.
- 2024 **Excellent College Advisor**, Dadao College, ShanghaiTech Univ.
- 2024 **Online Offline Hybrid Excellent Course**, "*Power Electron.*", ShanghaiTech Univ.
- 2024 **3rd Prize-Faculty Advisor**, Student Design Comp. Power Electron., China Power Supply Soc.
- 2024 **Excellent Advisor**, National Undergraduate Electron. Design Contest, Shanghai
- 2021-2024 **World's Top 2% Most-Cited Scientists-Career List**, Elsevier& Stanford Univ.
- 2020-2024 **World's Top 2% Most-Cited Scientists-Single Year List**, Elsevier& Stanford Univ.
- 2023 **Pearl Young Talent**, Shanghai Municipal Government
- 2023 **Excellent Course**, "*Power Electron.*", Shanghai Municipal Government
- 2023 **EHS Award**, ShanghaiTech Univ.
- 2023 **Annual Popular Science Star**, ShanghaiTech Univ.
- 2023 **Excellent Track Chair**, IEEE Intl. Power Electron. Symp. (PEAS)
- 2023 **Excellent Paper Award**, IEEE Intl. Power Electron. Symp. (PEAS)
- 2023 **Excellent College Advisor**, Dadao College, ShanghaiTech Univ.
- 2023 **High Impact Scholar in Elect. Eng.**, CUAA Chinese Univ. ranking.
- 2023 **Outstanding Presentation**,IEEE Appl. Power Electron. Conf. Expo. (APEC)
- 2023 **2nd Prize-Faculty Advisor**, Univ. Innovation Contest, Sungrow Power Inc.
- 2022 **Outstanding Faculty Award**, ShanghaiTech Univ.
- 2022 **Excellence in Service Award**, Sch. Info. Sci. Technol., ShanghaiTech Univ.
- 2021 **Outstanding CCP Affairs Employee**, Shanghai Education & Health Commission
- 2020 **Key Teaching Reform Project**, Shanghai Municipal Government
- 2020 **1st-class Award for Teaching & Education**, Chinese Academy of Sciences
- 2020 **Rising Star Talent**, Shanghai Municipal Government
- 2019 **Excellent Faculty Advisor**, Social Engagement, ShanghaiTech Univ.
- 2019 **Finalist**, IEEE IAS TSC prize award, IEEE Energy Convers. Conf. Expo. (ECCE)
- 2019 **Outstanding Presentation**, IEEE Appl. Power Electron. Conf. Expo. (APEC)
- 2018 **Excellent Course**, "*Intro. Info. Sci. Technol.*", Shanghai Municipal Government
- 2017 **Key Course**, "*Intro. Info. Sci. Technol.*", Shanghai Education Commission
- 2017 **Outstanding Faculty Award**, ShanghaiTech Univ.
- 2017 **Excellence in Teaching Award**, Sch. Info. Sci. Technol., ShanghaiTech Univ.
- 2016 **Sailing Talent**, Shanghai Municipal Government
- 2014 **PSMA Travel Grant**, IEEE Appl. Power Electron. Conf. (APEC)
- 2014 **Distinguished Dissertation Fellowship**, ECE department, Univ. Maryland
- 2013 **Jacob K. Goldhaber Travel Grant**, Graduate School, Univ. Maryland
- 2013 **Finalist**, Proposal Contest, NineSigma Inc.
- 2012 **Finalist**, Qualcomm Innovation Fellowship, Qualcomm Inc. USA
- 2009-2013 **Ph.D. Fellowship**, China Scholarship Counsel
- 2009 **Chu Kochen Certificate of Distinguished Honors**, Zhejiang Univ.
- 2009 **Outstanding Bachelor Thesis Award**, Zhejiang Univ.
- 2009 **Outstanding Graduate Award**, Zhejiang Univ.
- 2006-2008 **Top Academic Records Scholarships**, Zhejiang Univ.

TEACHING EXPERIENCES

Instructor, Sch. Info. Sci. Technol., ShanghaiTech Univ., China 09/2014 - present

- 2025 Spring EE270 *Model. Ctrl. Power Electron. Conv.*, 5 under, 27 graduates.
- 2024 Fall EE115A *Analog Circuits*, 62 undergraduates, 4.74/5.
- 2024 Spring EE171 *Power Electron.*, 21 undergraduates, 4.78/5.
- 2023 Fall EE270 *Model. Ctrl. Power Electron. Conv.*, 3 under, 20 graduates, 4.69/5.
- 2023 Spring SI100B *Intro. Info. Sic. Technol.*, 107 undergraduates.
- 2022 Fall MSE2125 *Intro. Energy Sci. Technol.*, 21 under, 113 graduates, 4.78/5.
- 2022 Fall EE270 *Model. Ctrl. Power Electron. Conv.*, (MOOC).
- 2022 Spring SI100B *Intro. Info. Sic. Technol.*, 109 undergraduates.
- 2021 Fall EE270 *Model. Ctrl. Power Electron. Conv.*, 8 under, 9 graduate students, 4.73/5.
- 2021 Fall MSE2125 *Intro. Energy Sci. Technol.*, 19 under, 103 graduates, 4.58/5.
- 2021 Spring SI100B *Intro. Info. Sci. Technol.*, 165 undergraduates, 4.50/5.
- 2020 Fall EE270 *Model. Ctrl. Power Electron. Conv.*, 6 under, 6 graduate students, 5/5.
- 2020 Fall MSE2125 *Intro. Energy Sci. Technol.*, 60 under, 97 graduate students, 4.83/5.
- 2020 Spring EE111 *Electric Circuits*, 69 undergraduates, 4.22/5.
- 2019 Fall EE270 *Model. Ctrl. Power Electron. Conv.*, 4 under, 14 graduate students, 4.82/5.
- 2019 Spring EE112 *Analog Integrated Circuits I*, 13 undergraduates, 4.72/5.
- 2018 Spring EE112 *Analog Integrated Circuits I*, 60 undergraduates, 4.53/5.
- 2017 Fall EE270 *Power Electron.*, 7 graduate students, 4.63/5.
- 2017 Spring EE270 *Power Electron.*, 10 undergraduates, 7 graduate students, 4.67/5.
- 2016 Fall EE112 *Analog Integrated Circuits I*, 39 undergraduates, 4.79/5.
- 2016 Spring EE270 *Power Electron.*, 8 graduate students, 4.67/5.
- 2016 Spring SI100B *Intro. Info. Sci. Technol.*, 296 undergraduates, 4.31/5.
- 2015 Fall EE212 *Analog Integrated Circuits*, 25 graduate students, 4.39/5.
- 2015 Summer SI101 *Course Design*, 5 undergraduates.
- 2015 Spring EE270 *Power Electron.*, 19 graduate students, 4.67/5.
- 2015 Spring SI100 *Intro. Info. Sci. Technol.*, 204 undergraduates, 4.33/5.
- 2014 Fall EE220 *Semiconductor Devices*, 22 graduate students, 4.40/5.

Teaching Assistant, Elect. Comput. Eng. Dpt., Univ. Maryland, College Park 09/2010 - 06/2013

- 2013 Spring ENEE498R *Special Topics in Renewable Energy*
- 2012 Fall ENEE417 *Microelectronics Design Lab*
- 2011 Fall ENEE303 *Analog and Digital Electronics*
- 2011 Spring ENEE307 *Electronics Circuits Design Lab*

RESEARCH/TEACHING GRANTS

[G1] 2024/8-2025/7, **PI**, "Ecapless onboard charger for 800V electric vehicles," **Industrial Grant**, Vitesco Automotive Electronics, Tianjin, 1.2M CNY.

[G2] 2024/1-2026/12, **PI**, **PEARL Project**, Shanghai Municipal Government, 500k CNY.

[G3] 2023/1-2024/12, **PI**, "Ultra compact highly integrated power supplies for next-generation data centers,"**Tenured Faculty Career Development Grant**, ShanghaiTech Univ., 1.2M CNY.

[G4] 2023/1-2024/12, **PI**, "High step-up ratio three port PV dc/dc converter," **Industrial Grant**, Vitesco Technologies, Shanghai, 560k CNY.

[G5] 2022/1-2022/10, **PI**, "High step-down ratio micro dc/dc converter for 800V electric vehicles," **Industrial Grant**, Vitesco Technologies, Shanghai, 220k CNY.

[G6] 2021-2025, **PI**, "Electronic and information engineering," **Excellent Master Program Cultivation Project**, Shanghai Municipal Government, $5M$ CNY.

[G7] 2021/4-2024/3, **PI**, "Hybrid hierarchical balancing techniques for traction battery packs," **General Grant**, Shanghai Municipal Government, $200k$ CNY.

[G8] 2020/4-2023/12, **PI**, "GaN-based ultra compact highly integrated onboard power conversion technologies for electric vehicles,"**Tenured Faculty Career Development Grant**, ShanghaiTech Univ., $2.25M$ CNY.

[G9] 2020/1-2020/12, **PI**, "SiC based 6.6kW onboard charger for special vehicles," **Industrial Grant**, ZINSIGHT Technology, Shanghai, $600k$ CNY.

[G10] 2021/1-2024/12, **PI**, "Topology and control of reconfigurable bridge based bidirectional on-board charger adapted to an ultra-wide gain range," **NSFC General Grant**, National Science Foundation of China, $600k$ CNY.

[G11] 2020/5-2023/4, **PI**, "Bidirectional resonant dc/dc converter adapted to an ultra-wide gain range," **Rising Star Program**, Shanghai Municipal Government, $400k$ CNY.

[G12] 2017/1-2019/12, **PI**, "Topology integration and control of PEV hybrid energy management systems," **NSFC Young Professional Grant**, National Science Foundation of China, $210k$ CNY.

[G13] 2016/6-2019/5, **PI**, "PEV battery/ultracap hybrid energy storage systems based on topological reuse," **Shanghai Sailing Program**, Shanghai Municipal Government, $200k$ CNY,

[G14] 2014/9-2020/3, **PI**, "Design and optimization of PEV energy management systems," **Faculty Start-up Grant**, ShanghaiTech Univ., $2M$ CNY.

[G15] 2007/12-2008/12, **PI**, "Design of an ultra-low power switch-mode power management IC," **National Undergraduate Innovative Research Grant**, Ministry of Education of China, $15k$ CNY

TEXT BOOK

[J1] M. Fu and **H. Wang**, "High-Frequency Power Electron.," *China Machine Press*, under review. (Chinese)

JOURNAL PAPERS

† corresponding author.

[J1] Y. Lu, Y. Shi, Y. Liu, and **H. Wang**†, "Remaining useful lifetime prediction of lithium-ion batteries based on fragment data and trend identification," *IEEE Trans. Ind. Inform.*, in press.

[J2] S. Yao, X. Wang, J. Liang, and **H. Wang**, and M. Fu†, "A PV-battery three-port wireless charger for unmanned aerial vehicles," *IEEE Trans. Ind. Electron.*, in press.

[J3] M. Zhou, Q. Pan, M. Fu, J. Liang, and **H. Wang**†, "Cycle estimation-based deadbeat interleaving method for critical mode totem-pole rectifiers," *IEEE Trans. Ind. Electron.*, in press.

[J4] X. Zhang, K. Yue, **H. Wang**, J. Liang, and Y. Liu†, "Injection based online capacitance monitoring with optimal selection of injection frequency in Buck converters," *IEEE J. Emerg. Sel. Topics Power Electron.*, in press.

[J5] J. Liang, Y. Qin, Y. Liu, M. Fu, and **H. Wang**†, "Phase shift regulated resonant switched-capacitor-based intermediate bus converter for 48V data center power system," *IEEE Trans. Ind. Electron.*, vol. 72, no. 2, pp., Feb. 2025.

[J6] C. Li, L. Wang, G. Zheng, M. Fu, and **H. Wang**†, "Small-signal modeling and loop analysis of ultrafast series capacitor trans-inductor voltage regulator with constant on-time control," *IEEE Trans. Power Electron.*, vol. 40, no. 2, pp. 3262-3274, Feb. 2025.

[J7] J. Qiu, **H. Wang**, Y. Liu, M. Fu, J. Liang†, " A synchronous current inversion and energy extraction circuit for electromagnetic energy harvesting enhancement," *IEEE Trans. Circuits Syst. I Reg. Papers*, vol. 71, no. 12, pp. 5471 - 5481, Dec. 2024.

[J8] C. Qi, G. Zheng, **H. Wang**, and M. Fu†, "A linear large-signal model for inductive power transfer system," *IEEE Trans. Ind. Electron.*, vol. 71, no. 12, pp. 15568 - 15577, Dec. 2024.

[J9] H. Li, **H. Wang**, J. Liang, M. Fu†, "EMI suppression in inductive power transfer systems using class E inverters," *IEEE Trans. Power Electron.*, vol. 39, no. 12, pp. 15474-15478, Dec. 2024.

[J10] Y. Nie, Y. Liu†, D. Lu, Y. Xie, X. Zou, and **H. Wang**, "A fast and sensitive current differential protection for MMC-HVDC lines," *IEEE Trans. Ind. Electron.*, vol. 71, no. 11, pp. 14988 - 15000, Nov. 2024.

[J11] J. Liang, L. Wang, J. Liang, T. Long, and **H. Wang**†, "A switched-capacitor and series-resonant hybrid MHz DCX in data center applications," *IEEE Trans. Power Electron.*, vol. 39, no. 10, pp. 13389 - 13400, Oct. 2024.

[J12] L. Gao, L. Teng, **H. Wang**, Y. Liu, M. Fu, and J. Liang†, "A self-sensing synchronous switch circuit for bidirectional piezoelectric energy conversion," *IEEE Trans. Ind. Electron.*, vol. 71, no. 9, pp. 11592-11601, Sept. 2024.

[J13] Q. Li, Y. Shi†, Y. Jiang, Y. Shi, **H. Wang**, and V. Poor, "A distributionally robust model predictive control for static and dynamic uncertainties in smart grids," *IEEE Trans. Smart Grid*, vol. 15, no. 5, pp. 4890 - 4902, May 2024.

[J14] Z. Li, G. Ning, K. Zhao, **H. Wang**, and M. Fu†, "A dual-mode wireless charger based on cascaded rectifier and hybrid compensation," *IEEE Trans. Circuits Syst. II Exp. Briefs.*, vol. 71, no. 3, pp. 1466 - 1470, Mar. 2024.

[J15] X. Wang, R. He, **H. Wang**, J. Liang, and M.Fu†, "Modified LCC compensation and magnetic integration for inductive power transfer," *IEEE J. Emerg. Sel. Topics Power Electron.*, vol. 12, no. 1, pp. 186-194, Feb. 2024.

[J16] **H. Wang**#, C. C. Mi, and S.-Y. R. Hui, "Guest editorial: special issue on advanced charging technologies for next-generation electric vehicles," *IEEE J. Emerg. Sel. Topics Power Electron.*, vol. 12, no. 1, pp. 6-7, Feb. 2024.

[J17] Y. Jiang, J. Liang, **H. Wang**, Y. Liu, and M. Fu†, "Load-impedance-insensitive design of high-efficiency class EF inverters," *IEEE Trans. Power Electron.*, vol. 39, no. 2, pp. 1958-11962, Feb. 2024.

[J18] Y. Zhuge, J. Liang, M. Fu, T. Long, and **H. Wang**†, "Comprehensive overview of Power Electron. intensive solutions for high-voltage pulse generators," *IEEE Open J. Power Electron.*, vol. 5, pp. 21-40, 2024.

[J19] L. Teng, **H. Wang**, Y. Liu, M. Fu, and J. Liang†, "A three-transistor energy management circuit for energy-harvesting-powered IoT devices," *IEEE Internet Things J.*, vol. 11, no. 1, pp. 1301-1310, Jan. 2024.

[J20] B. Xue, L. Wang, P. Zhao, M. Fu, J. Liang, and **H. Wang**†, "Decoupled state-plane analysis of series-series compensated bidirectional IPT systems," *IEEE Trans. Power Electron.*, vol. 39, no. 1, pp. 42-46, Jan. 2024.

[J21] B. Xue, L. Wang, M. Fu, and **H. Wang**†, "State-space based universal time-domain model for voltage-fed bidirectional IPT systems," *IEEE Trans. Ind. Electron.*, vol. 71, no. 1, pp. 615-624, Jan. 2024. (ESI highly cited paper as of 2024).

[J22] P. Zhao, J. Liang, **H. Wang**, and M. Fu†, "Detuned LCC/SS compensation for stable-output inductive power transfer system under ultra-wide coupling variation," *IEEE Trans. Power Electron.*, vol. 38, no. 10, pp. 12342-12347, Oct. 2023.

[J23] R. He, X. Wang, **H. Wang**, and M. Fu†, "Optimal terminals of a multi-transmitter multi-receiver inductive coupler with equality power constraints," *IEEE Trans. Power Electron.*, vol. 38, no. 10, pp. 11953-11963, Oct. 2023.

[J24] R. He, X. Wang, **H. Wang**, and M. Fu†, "Reconfigurable and modular wireless charger based on dual-band design," *IEEE Trans. Circuits Syst. II Exp. Briefs.*, vol. 70, no. 9, pp. 3524-3528, Sept. 2023.

[J25] P. Zhao, X. Ji, **H. Wang**, and M. Fu†, "H5-bridge-based bowl-shape wireless charger for multiple loads," *IEEE Trans. Ind. Electron.*, vol. 70, no. 9, pp. 8853-8861, Sept. 2023.

[J26] Z. Xie, L. Teng, **H. Wang**, Y. Liu, M. Fu, and J. Liang†, "A self-powered synchronous switch energy extraction circuit for electromagnetic energy harvesting enhancement," *IEEE Trans. Power Electron.*, vol. 38, no. 8, pp. 9972-9982, Aug. 2023.

[J27] R. He, B. Xue, M. Zhou, M. Fu, J. Liang, and Y. Liu, **H. Wang**†, "Resonant frequency tracking scheme for *LLC* converter based on large and small signal combined model," *IEEE Access*, vol. 11, pp. 83390-83399, Jul 2023.

[J28] K. Yue, Y. Liu†, M. Fu, J. Liang, and **H. Wang**, "Mode switching based parameter identification for 2TX-1RX wireless power transfer systems," *IEEE Access*, vol. 11, pp. 46847-46859, 2023.

[J29] M. Zhou, C. Peng, M. Fu, and **H. Wang**†, "Current zero-crossing prediction based critical conduction mode control of totem-pole PFC rectifiers," *IEEE Trans. Power Electron.*, vol. 38, no. 7, pp. 8513 - 8527, Jul. 2023.

[J30] L. Gao, L. Teng, M. Fu, **H. Wang**, and J. Liang†, "A switched-mode self-sensing solution for piezoelectric synchronous electric charge extraction (SECE)," *IEEE Trans. Ind. Electron.*, vol. 79, no. 7, pp. 7457- 7466, Jul. 2023.

[J31] X. Ji, P. Zhao, **H. Wang**, H. Yang, and M. Fu†, "Multiple-receiver inductive power transfer system based on multiple-coil power relay module," *IEEE Trans. Circuits Syst. I Reg. Papers*, vol. 70, no. 6, pp. 2625-2634, Jun. 2023

[J32] C. Qi, G. Zheng, Y. Liu, J. Liang, **H. Wang**, and M. Fu†, "A simplified three-order small-signal model for capacitive power transfer system using series compensation," *IEEE Trans. Power Electron.*, ol. 38, no. 5, pp. 5688-5692, May 2023.

[J33] K. Zhao, G. Ning, R. He, H. Yang, **H. Wang**, and M. Fu†, "An unsymmetrical driving scheme for inductive power transfer systems using decoupled transmitter coils," *IEEE J. Emerg. Sel. Topics Ind. Electron.*, vol. 4, no. 2, pp. 614 - 624, Apr. 2023.

[J34] Y. Jiang, H. Li, Y. Liu, J. Liang, **H. Wang**, and M. Fu†, "Multi-constraint design of single-switch resonant converters based on extended impedance method," *IEEE J. Emerg. Sel. Topics Power Electron.*, vol. 11, no. 2, pp. 1901-1912, Apr. 2023.

[J35] C. Qi, G. Zheng, Y. Liu, J. Liang, **H. Wang**, and M. Fu†, "A simplified three-order small-signal model for capacitive power transfer system using series compensation," *IEEE Trans. Power Electron.*, vol. 38, no. 5, pp. 5688-5692, May 2023.

[J36] Y. Gao, Z. Chen, **H. Wang**, Y. Liu, M. Fu, and J. Liang†, "A load-independent fission-type inductive power transfer system for 3D reconfigurable IoT array," *IEEE Access*, vol. 11, pp. 8878-8888, 2023.

[J37] G. Zheng, C. Qi, Y. Liu, J. Liang, **H. Wang**, and M. Fu†, "Uniform and simplified small-signal model for inductive power transfer systems," *IEEE Trans. Power Electron.*, vol. 38, no. 2, pp. 2709-2719, Feb. 2023.

[J38] L. Wang, **H. Wang**†, M. Fu, J. Liang, and Y. Liu, "A three-port energy router for grid-tied PV generation systems with optimized control methods," *IEEE Trans. Power Electron.*, vol. 38, no. 1, pp. 1218-1231, Jan. 2023.

[J39] Z. Wei, **H. Wang**†, Y. Lu, D. Shu, G. Ning, and M. Fu, "Bidirectional constant current string-to-cell battery equalizer based on L2C3 resonant topology," *IEEE Trans. Power Electron.*, vol. 38, no. 1, pp. 666-677, Jan. 2023.

[J40] Y. Gao, J. Liang†, M. Fu, and **H. Wang**, "A 2-D inductive power transfer network for powering reconfigurable closely neighboring IoT devices," *IEEE Access*, vol. 10, pp. 113560 - 113569, 2022.

[J41] J. Liang, M. Fu, J. Liang, and **H. Wang**†, and M. Fu, "Overview of voltage regulator modules in 48V bus-based data center power systems," *CPSS Trans. Power Electron. Appl.*, vol. 7, no. 3, pp. 283-299, Sept. 2022.

[J42] X. Yang, and **H. Wang**, "Editorial for the special issue on next generation datacenter power conversion technologies," *CPSS Trans. Power Electron. Appl.*, vol. 7, no. 3, pp. 227-228, Sept. 2022.

[J43] L. Wang, **H. Wang**†, M. Fu, Z. Xie, and J. Liang, "Three-port power electronic interface with decoupled voltage regulation and MPPT in electromagnetic energy harvesting systems," *IEEE Trans. Ind. Appl.*, vol. 58, no. 2, pp. 2144-2154, Mar./Apr. 2022.

[J44] L. Wang, **H. Wang**†, B. Xue, and M. Zhou, "H5-bridge based single-input-dual-output *LLC* converter with wide output voltage range," *IEEE Trans. Ind. Electron.*, vol. 69, no. 7, pp. 7008-7018, Jul. 2022.

[J45] D. Shu, **H. Wang**†, and M. Zhou, "Universal control scheme to achieve seamless dynamic transition of dual-active-bridge converters using zero-current prediction," *IEEE Trans. Ind. Electron.*, vol. 69, no. 6, pp. 5826-5834, Jun. 2022.

[J46] M. Zhou, D. Shu, and **H. Wang**†, "An H5-bridge based laddered *CLLC* DCX with variable dc-link for PEV charging applications," *IEEE Trans. Power Electron.*, vol. 37, no. 4, pp. 4249-4260, Apr. 2022.

[J47] Z. Wei, F. Peng, and **H. Wang**†, "An *LCC* based string-to-cell battery equalizer with simplified constant current control," *IEEE Trans. Power Electron.*, vol. 37, no. 2, pp. 1816-1827, Feb. 2022.

[J48] F. Peng, Y. Lu, M. Zhou, and **H. Wang**†, "Hierarchical modular battery equalizer with open-loop control and mitigated recovery effect," *CPSS Trans. Power Electron. Appl.*, vol. 6, no. 4, pp. 310-319, Dec. 2021.

[J49] D. Shu, and **H. Wang**†, "Light load performance enhancement technique for *LLC*-based PEV charger through circuit reconfiguration," *IEEE Trans. Transp. Electrif.*, vol. 7, no. 4, pp. 2104-2113, Dec. 2021.

[J50] D. Shu, and **H. Wang**†, "An ultra-wide output range *LLC* resonant converter based on adjustable turns ratio transformer and reconfigurable bridge," *IEEE Trans. Ind. Electron.*, vol. 68, no. 8, pp. 7115-7124, Aug. 2021.

[J51] K. Yue, Y. Liu†, P. Zhao, M. Fu, and **H. Wang**, "Dynamic state estimation enabled health indicator for parametric fault detection in power electronic circuits," *IEEE Access*, vol. 9, pp. 33224-33234, 2021.

[J52] J. Deng, and **H. Wang**†, "A hybrid-bridge and hybrid modulation based dual-active-bridge converter adapted to wide voltage range," *IEEE J. Emerg. Sel. Topics Power Electron.*, vol. 9, no. 1, pp. 910-920, Feb. 2021.

[J53] X. Li, L. Teng, H. Tang, J. Chen, **H. Wang**, Y. Liu, M. Fu, and J. Liang†, "ViPSN: a vibration-powered IoT platform," *IEEE Internet Things J.*, vol. 8, no. 3, pp. 1728-1739, Feb. 2021.

[J54] B. Xue, **H. Wang**†, J. Liang, Q, Cao, and Z. Li, "Phase-shift modulated interleaved *LLC* resonant converter with ultra wide output voltage range," *IEEE Trans. Power Electron.*, vol. 36, no. 1, pp. 493-503, Jan. 2021.

[J55] O. Abdel-Rahim, and **H. Wang**†, "A new high gain dc-dc converter with model-predictive-control based MPPT technique for photovoltaic systems," *CPSS Trans. Power Electron. Appl.*, vol. 5, no. 2, pp. 189-198, Jun. 2020.

[J56] O. Abdel-Rahim, and **H. Wang**†, "Five-level one-capacitor boost multilevel inverter," *IET Power Electron.*, vol. 13, no. 11, pp. 2245–2251, Aug. 2020.

[J57] C. Li, M Zhou, and **H. Wang**†, "An H5-bridge based asymmetric *LLC* resonant converter with an ultra-wide voltage gain range," *IEEE Trans. Ind. Electron.*, vol. 67, no. 11, pp. 9503-9514, Nov. 2020.

[J58] T. Chen, O. Abdel-Rahim, F. Peng, and **H. Wang**†, "An improved finite control set-MPC based power sharing control strategy for islanded ac microgrids," *IEEE Access*, vol. 8, pp. 52676-52686, 2020.

[J59] F. Peng, **H. Wang**†, and Z. Wei, "An *LLC* based highly efficient S2M and C2C hybrid hierarchical battery equalizer," *IEEE Trans. Power Electron.*, vol. 35, no 6, pp. 5928-5937, Jun. 2020.

[J60] X. Lu, and **H. Wang**†, "Optimal sizing and energy management for cost-effective hybrid energy storage systems," *IEEE Trans. Ind. Inform.*, vol. 16, no. 5, pp. 3407-3416, May 2020.

[J61] Z. Li, B. Xue, and **H. Wang**†, "An interleaved secondary-side modulated *LLC* resonant converter for wide output range applications," *IEEE Trans Ind. Electron.*, vol. 67, no. 2, pp. 1124-1135, Feb. 2020.

[J62] R. He, M. Fu†, P. Zhao, Y. Liu, **H. Wang**, and J. Liang, "Decomposition and synthesis of high-order compensated inductive power transfer systems for improved output controllability," *IEEE Trans. Microw. Theory Techn.*, vol. 67, no. 11, pp. 4514-4523, Nov. 2019.

[J63] J. Deng, **H. Wang**†, and M. Shang,"A ZVS three-port dc/dc converter for high-voltage bus based photovoltaic systems," *IEEE Trans. Power Electron.*, vol. 34, no. 11, pp. 10688-10699, Nov. 2019.

[J64] **H. Wang**†, M. Shang, and D. Shu, "Design considerations of efficiency enhanced *LLC* PEV charger using reconfigurable transformer," *IEEE Trans. Veh. Technol.*, vol. 68, no. 9, pp. 8642-8651, Sept. 2019.

[J65] F. Peng, **H. Wang**†, and L. Yu, "Analysis and design considerations of efficiency enhanced hierarchical battery equalizer based on bipolar CCM buck-boost units," *IEEE Trans. Ind. Appl.*, vol. 55, no. 4, pp. 4053-4063, Jul./Aug. 2019.

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[P24] **H. Wang**, and M. Shang, "Novel voltage multiplier rectifier based resonant power converters," China Patent(ZL 2017 1 0435858.4), Jun. 2017.

INVITED TALKS

[T1] "Ultra-fast power supply for next-generation data center in AI era" invited talk, *CPSS 7th Youth Forum*, Wuhan, China, Nov. 2024.

[T2] "Ultra-fast power supply for next-generation data center in AI era" invited talk, *CPSS Annual Academic Meeting*, Xi'an, China, Nov. 2024.

[T3] "Battery management systems overview: how to use battery safely?" invited talk, *1st Conf. Energy Storage Electrical Engineering*, Wen'an, China, Sept. 2024.

[T4] "Ultra-fast power supply for next-generation data center in AI era" invited talk, *CES 2nd Forum on Electric Machines and Power Electron. Technology*, Guilin, China, Aug. 2024.

[T5] "Ultra-fast power supply for next-generation data center," invited talk, *CPSS 7th Online Symposium*, Online, China, Aug. 2024.

[T6] "Ultra-fast power supply for next-generation data center," invited talk, *Infineon Annual Professor Forum 2024*, Ningbo, China, Aug. 2024.

[T7] "Ultra-fast power supply for next-generation data center," invited talk, *IET 20th ACDC Annual Conf.*, Shanghai, China, Jul. 2024.

[T8] "Recent advances of high performance power supplies," invited talk, *Univ. of Science and Technology of China*, Hefei, China, Jun. 2024.

[T9] "Ultra-fast power supply for next-generation data center," invited talk, *Sichuan Univ.*, Chengdu, China, May 2024.

[T10] "Ultra-fast power supply for next-generation data center," invited talk, *Univ. of Electronic Science and Technology*, Chengdu, China, May 2024.

[T11] "Ultra-fast power supply for next-generation data center," invited talk, *Zhejiang Univ.*, Hangzhou, China, Apr. 2024.

[T12] "Ultra-fast power supply for next-generation data center," invited talk, *Wuhan Univ.*, Wuhan, China, Apr. 2024.

[T13] "Power or information? How to select major under the umbrella of electrical engineering," invited talk, *Dadao College*, ShanghaiTech Univ., China, Apr. 2024.

[T14] "Ultra-fast power supply for next-generation data center," invited talk, *Shanghai Institute of Microsystem and Information Technology, CAS*, Shanghai, China, Dec. 2023.

[T15] "From the current war to the future carbon neutral energy internet," invited talk, *School Affiliated to ShanghaiTech Univ.*, Shanghai, China, Dec. 2023.

[T16] "Ultra-fast power supply for next-generation data center," invited talk, *9th Young Scholar Forum of China Electrotechnical Society*, Xuzhou, Jiangsu, China, Dec. 2023.

[T17] "Hybrid hierarchical equalization technology for series battery strings in energy storage systems," invited talk, *Changsha Energy Storage Symposium*, Changsha, Hunan, China, Nov. 2023.

[T18] "Topology and control of ultra-wide gain range onboard chargers," invited talk, *NSFC Symposium*, Nanchang, Jiangxi, China, Sept. 2023.

[T19] "Overview of emerging 48V bus-based datacentre VRM technologies," invited talk, *China Electrotechnical Society Webinar*, online, China, Jun. 2023.

[T20] "Career Development Experience as an Independent PI in a New Research Univ.," invited talk, *Symp. Power Electron. & Electrical Dri., SPEED*, Xi'an, China, May 2023.

[T21] "From the current war to the future carbon neutral energy internet," invited talk, *Shanghai Library, Pudong Branch*, Shanghai, China, Apr. 2023.

[T22] "The green energy future of humanity," invited talk, *Zhengzhou No.1 High School*, Zhengzhou, China, Mar. 2023.

[T23] "The green energy future of humanity," invited talk, *Zhengzhou Foreign Language School*, Zhengzhou, China, Mar. 2023.

[T24] "Sensorless current zero-crossing detection technique for GaN-based CRM totem-pole PFC rectifiers," invited talk, *China Advanced Semiconductor Technology and Application Show*, Suzhou, China, Feb. 2023.

[T25] "Next-generation datacenter power conversion technologies," invited talk, *the 8th Symposium for Young Scholars in Electrical Engineering Discipline*, Wenzhou, Zhejiang, Nov. 2022.

[T26] "48V bus-based datacenter voltage regulator modules: topology, control, and magnetic integration," Educational Seminar, *IEEE Int. Power Electron. Appl. Conf & Expo.*, Guangzhou, China, Nov. 2022.

[T27] "Voltage regulator module in 48V bus-based data center power systems: architecture, topology, and magnetic integration," *IEEE Ind. Electron. Soc. Webinar*, Nov. 2022.

[T28] "Overview of voltage regulator module in 48V bus-based data center power systems," invited talk, *Huawei Technologies*, Mar. 2022.

[T29] "Opportunities and challenges for new energy vehicles in carbon neutrality era," invited webinar, *State Grid Training Program*, Hebei, China, Feb. 2022.

[T30] "Opportunities and challenges for new energy vehicles in carbon neutrality era," invited talk, *Symposium of Carbon Neutrality Institute*, ShanghaiTech Univ., Shanghai China, Dec. 2021.

[T31] "Wide gain range dc/dc conversion technologies for PEV charging applications," invited talk, *the 5th frontier technological forum on transportation electrification*, Shanghai, China, May. 2021.

[T32] "Conductive charging of electrified vehicles: state-of-the-art and trends," invited talk, *the Energy Storage Innovative Technology Forum*, Shanghai, China, Apr. 2021.

[T33] "Topologies and control strategies of dc/ dc converters in EV charging systems," invited talk, Online Symposium on "Power electronic challenges and solutions for the integration of Electric vehicle charging network", *IIT Varanasi, India*, Mar. 2021.

[T34] "Conductive charging of electrified vehicles: challenges and opportunities," invited keynote talk, *the 2020 7th International Forum on Electrical Engineering and Automation*, Sept. 2020.

[T35] "Conductive charging of electrified vehicles: challenges and opportunities," *IEEE Power Electron. Soc. Webinar*, Jul. 2020.

[T36] "Topology integration and control of PEV hybrid energy management systems," *Zhejiang Univ.*, Aug. 2018.

[T37] "Wide voltage gain range *LLC* converters," *Jilin Univ.*, Jun. 2018.

[T38] "Transportation electrification: conductive charging of plug-in electric vehicles," *Tianjin Univ.*, Sept. 2017.

[T39] "Key technologies in transportation 2.0," *School of Information Science and Technology*, ShanghaiTech Univ., Jun. 2017.

[T40] "Towards ultra-compact, highly efficient PEV onboard chargers," *Department of Electronics Engineering*, Tsinghua Univ., Jan. 2014.

[T41] "A SiC based ultra-compact, highly efficient *LLC* multi-Resonant battery charger for PEVs," *Annual Science & Engineering Technology Conf./Defense Tech Expo.*, Inner Harbor, MD, Apr. 2013.

EXTERNAL SERVICES

Journal Editorial Board

- ***Guest Associate Editor***, *IEEE Trans. Power Electron.* 10/2024 - 9/2025
  Special Issue: Very High Frequency Resonant Converters for Efficient & Miniaturized Power Conversion
- ***Associate Editor***, *IEEE Trans. Ind. Electron.* 07/2020 - present

- ***Associate Editor***, *IEEE Trans. Transp. Electrif.* 03/2018 - present
- ***Associate Editor***, *CPSS Trans. Power Electron. Appl.* 03/2018 - present
- ***Guest Editor***, *IEEE J. Emerg. Sel. Topics Power Electron.* 01/2023 - 12/2023
  Special Issue: Advanced charging technologies for next-generation electric vehicles
- ***Guest Associate Editor***, *IEEE Open J. Power Electron.* 01/2022 - 12/2022
  Special Issue: Bidirectional dc/dc converter and emerging applications
- ***Guest Editor-in-Chief*** , *CPSS Trans. Power Electron. Appl.* 01/2022 - 12/2022
  Special Issue: Next generation datacenter power conversion technologies
- ***Guest Associate Editor***, *CPSS Trans. Power Electron. Appl.* 01/2018 - 12/2018
  Special Issue: Vehicle Electrification

Societies and Associations

- ***DEI-Publication Liaison***, IEEE Power Electron. Society (PELS) 04/2024 - present
- ***Fellow***, Institution of Engineering and Technology (IET) 04/2024 - present
- ***Member***, CPSS Academic Affairs Committee 09/2022 - present
- ***Senior Member***, China Automation Society (CAS) 02/2022 - present
- ***Member***, CAS Energy Storage Committee 02/2022 - present
- ***Member***, CPSS Standardization Affairs Committee 01/2022 - present
- ***Member***, IEEE Industry Application Society (IAS) 10/2020 - present
- ***Member***, CPSS DC Power Supply Committee 11/2019 - present
- ***Member***, CPSS Transportation Electrification Committee 11/2019 - present
- ***Member***, CPSS Young Professional Committee 12/2018 - 10/2021
- ***Member***, Shanghai Power Supply Society 11/2018 - present
- ***Member***, IEEE Industrial Electronics Society (IES) 10/2017 - present
- ***Member***, IEEE IES Energy Storage TC 10/2017 - present
- ***Member***, IEEE PELS Emerging Power Electronic Technologies TC 03/2017 - present
- ***Senior Member***, China Power Supply Society (CPSS) 10/2016 - present
- ***Member***, IEEE PELS Electrified Transportation Systems TC 03/2016 - present
- ***Member***, IEEE Power Electron. Society (PELS) 09/2014 - present
- ***Senior Member***, Institute of Electrical and Electronics Engineers (IEEE) 09/2012 - present
- ***Vice President***, Zhejiang Univ. Alumni Association, DC Metropolitan Area 09/2012 - 08/2014
- ***President***, Chinese Students and Scholars Association, Univ. Maryland 06/2010 - 06/2011

Conference Organizing Committees

- 2025 *IEEE Appl. Power Electron. Conf. Expo.* (APEC 2025), Atlanta, GA
  Track Chair: Renewable Energy Systems.
- 2025 *IEEE 16th Int. Symp. Power Electron. Distr. Generation Syst.* (PEDG 2025), Nanjing, China
  Technical Program Member
- 2024 *IET 20th ACDC Annual Conference* (ACDC 2024), Shanghai, China
  Session Chair: New Technology.
- 2024 *Annu. ShanghaiTech Symp. Info. Sci. Technol.* (ASSIST 2024), Shanghai, China
  Program Chair
- 2024 "GaN Systems Cup" *the 10th College Power Electron. Appl. Design Compet.*, Harbin, China
  Technical Program Committee Member
- 2024 *IEEE Appl. Power Electron. Conf. Expo.* (APEC 2024), Long Beach, CA
  Track Chair: Renewable Energy Systems.
  Session Chair: Renewable Energy Systems.

- 2023 *IEEE Int. Power Electron. Appl. Symp.* (PEAS 2023), Guangzhou, China
  Track Chair: Conversion and Control Technologies for Renewable Energy and Storage Systems.
- 2023 *IEEE Appl. Power Electron. Conf. Expo.* (APEC 2023), Orlando, FL
  Track Chair: Renewable Energy Systems.
- 2023 "GaN Systems Cup" *the 9th College Power Electron. Appl. Design Compet.*, Xuzhou, China
  Technical Program Committee Member
- 2022 *PCIM Asia 2022*, Shanghai, China
  Session Chair: WBG Devices.
- 2022 *IEEE Int. Power Electron. Appl. Conf. Expo.* (PEAC 2022), Guangzhou, China
  Track Chair: Power Electron. for Datacenter and Telecom (Storage).
- 2022 *Annu. ShanghaiTech Symp. Info. Sci. Technol.* (ASSIST 2022), Shanghai, China
  Program Chair
  Session Chair: Advanced Power Conversion Techniques
- 2022 "GaN Systems Cup" *the 8th College Power Electron. Appl. Design Comp.*, Hefei, China
  Technical Program Committee Member
- 2022 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Houston, TX
  Track Chair: Renewable Energy Systems.
  Session Chair: Energy Storage Systems & Grids.
- *2021 IEEE Int. Power Electron. Appl. Symp.* (PEAS), Shanghai, China
  Session Chair: Magnetics, Passive Integration, Magnetics for Wireless and EMI
  Session Chair: Power Electron. for Electric Vehicles, Railway, Marine, Airplane, etc.
- 2021 *the 5th Frontier Technol. Forum Transp. Electrif.*, Shanghai, China
  Session Chair: motor drive and charging of PEVs.
- 2021 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Phoenix, AZ
  Track Chair: Renewable Energy Systems.
  Session Chair: Renewable Energy System Control.
- 2021 "GaN Systems Cup" *the 7th College Power Electron. Appl. Design Compet.*, Wuhan, China
  Technical Program Committee Member
- 2020 *IEEE 9th Int. Power Electron. Motion Ctrl. Conf.* (IPEMC2020-ECCE Asia), Nanjing, China
  Session Chair: Power Electron. topologies, devices, and reliability.
- 2020 NSFC project progress meeting, Chongqing, China
  Session Chair: Power Electron. topologies, devices, and reliability.
- 2020 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), New Orleans, LA
  Track Chair: Renewable Energy Systems
  Session Chair: Microgrid systems
- 2019 *the 23rd China Power Supply Soc. Conf.* (CPSSC), Shenzhen, China
  Program Committee Member: Charging and motor drive of plug-in electric vehicles
  Session Chair: EV charging I; Multi-level converters
- 2019 *the 13th Symp. Power Electron. & Elect. Drives* (SPEED), Xi'an, China
  Session Chair: DC/DC converter and control I
- 2019 *Int. Conf. Vibration Energy Harvesting Appl.* (VEH), Shanghai, China
  Local Organizing Chair
- 2019 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Anaheim, CA
  Track Chair: Renewable Energy Systems
  Session Chair: Microgrid applications
- 2018 *Int. Power Electron. Conf.* (IPEC2018-ECCE Asia), Niigata, Japan
  Session Chair: *LLC* converters
- 2018 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), San Antonio, TX
  Track Chair: Renewable Energy Systems
  Session Chair: Three-Phase AC-DC Converters; Renewable Energy Topics

- 2018 *ShanghaiTech Workshop Emerg. Dev., Circuits & Systems* (SWEDCS), Shanghai, China
  Publicity Chair
- 2017 *the 22nd China Power Supply Soc. Conf.* (CPSSC), Shanghai, China
  Session Chair: Soft-Switching Power Converters; LED Driver Technologies II
- 2017 *IEEE Ann. Conf. IEEE Ind. Electron. Soc.* (IECON), Beijing, China
  Session Chair: DC/DC Converters; High Voltage and Multilevel Converters
- 2017 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Tampa, FL
  Track Chair: Renewable Energy Systems
  Session Chair: AC Renewable Energy; Batteries for Renewable Energy
- 2017 *ShanghaiTech Workshop Emerg. Dev., Circuits & Systems* (SWEDCS), Shanghai, China
  Publicity Chair
  Session Chair: Smart Power Conversion.
- 2016 *Vehicular Technology Conference*, Montréal, Canada
  Technical Program Committee member
- 2016 *IEEE Transp. Electrif. Conf. Expo.* (ITEC), Dearborn, MI
  Special Session Organizer: Power Electronic Converters and Drives
- 2016 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Long Beach, CA
  Track Chair: Renewable Energy Systems
  Session Chair: Renewable Energy System II
- 2015 *IEEE Appl. Power Electron. Conf. Expo.* (APEC), Charlotte, NC
  Session Chair: Renewable Wind I; Photovoltaics
- 2015 *IEEE Transp. Electrif. Conf. Expo.* (ITEC), Dearborn, MI
  Track Chair: Converter/Inverter Design and Control I

Research Grants Review

- 2024 Reviewer: Youth Program, National Natural Science Foundation of China
- 2022 Reviewer: National Scholarship for Excellent Self-funded Oversea Student
- 2020 External reviewer: postdoctoral program, Estonian Research Council
- 2018 Reviewer: Youth Program, National Natural Science Foundation of China

Conference Review

- 2022 IEEE International Power Electron. Conference (ECCE-Asia)
- 2020 - 2021 IEEE International Symposium on Circuits and Systems (ISCAS)
- 2018, 2022 IEEE International Power Electron. and Application Conference and Expo.(PEAC)
- 2014 - 2023 IEEE Applied Power Electron. Conf. Expo.(APEC)
- 2016 - 2022 IEEE Energy Conversion Congress Expo.(ECCE)
- 2018 Review Panel Member, IEEE International Future Energy Challenge
- 2018, 2019 Annual Conf. of the IEEE Industrial Electronics Society (IECON)

Journal Review

- IEEE J. Emerging and Selected Topics in Industrial Electronics 11/2024 - present
- IEEE J. Solid-State Circuits 04/2024 - present
- IEEE Trans. Electromagnetic Compatibility 09/2022 - present
- Joule 6/2022 - present
- IEEE Trans. Circuits and Systems II: Express 12/2021 - present
- IET Power Electron. 12/2021 - present
- IET Elect. Systems in Transportation 06/2018 - present
- CPSS Trans. Power Electron. and Applications 07/2018 - present
- IEEE Open J. Power Electron. 10/2019 - present

- IEEE Trans. Very Large Scale Integration Systems 07/2018 - present
- IEEE Trans. Industrial Informatics 03/2018 - present
- IEEE J. Emerging and Selected Topics in Power Electron. 10/2017 - present
- IEEE Internet of Things J. 08/2017 - present
- IEEE Trans. Transportation Electrification 08/2016 - present
- IEEE Trans. Industry Applications 05/2016 - present
- IEEE Trans. Energy Conversion 06/2014 - present
- IEEE Trans. Vehicular Technology 09/2013 - present
- IEEE Trans. Industrial Electronics 06/2013 - present
- IEEE Trans. Power Electron. 11/2012 - present

Volunteer

- IEEE Transp. Electrif. Conf. Expo. (ITEC), Dearborn, MI 06/2013

INTERNAL SERVICES

Univ. Committees

- ***Leader*** ShanghaiTech Undergraduate Recruitment Henan Group 03/2021 - present
- ***Member*** ShanghaiTech CCP Committee 10/2021 - present
- ***Member*** ShanghaiTech EHS Committee 10/2021 - present
- ***Member*** ShanghaiTech Labor Union 11/2016 - 10/2020
- ***Member*** ShanghaiTech Curriculum & Teaching Committee 01/2017 - 04/2017
- ***Member*** ShanghaiTech United CCP Branch 10/2015 - 07/2017

School Committees

- ***Chair*** SIST Public Relations Committee 11/2021 - present
- ***Chair*** SIST EHS Committee 11/2021 - present
- ***Secretary*** SIST CCP Committee 07/2020 - present
- ***Member*** SIST Faculty Search Committee 09/2019 - present
- ***Member*** SIST Executive Committee 09/2019 - present
- ***Member*** SIST Degree Committee 09/2020 - present
- ***Member*** SIST Tenure Promotion Committee 09/2020 - present
- ***Co-Chair*** SIST Recruitment and Admission Committee 09/2018 - 11/2020
- ***Chair*** SIST Public Relations Committee 08/2016 - 08/2018
- ***Member*** SIST Research Management Committee 09/2016 - 08/2017
- ***Member*** SIST Curriculum and Teaching Committee 09/2014 - 04/2017
- ***Co-Chair*** SIST Curriculum and Teaching Committee 02/2016 - 04/2017

SUPERVISION

Ph.D. Students

- **Jiawei Liang** Ph.D. Student, 09/2020 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Data center point-of-load converters.
  Honor: 2023, Second Prize, Univ. Innovation Contest, Sungrow Power Inc.
  Honor: 2024, National Scholarship from Chinese Central Government.

- **Yiqing Lu** Ph.D. Student, 09/2020 - present
  Education Background: B.S. Zhejiang Univ.
  Research Interest: Battery management systems.
  Honor: 2024, First Prize, the 2^{nd} Power Electronics Creation Comp., China Power Supply Soc.
  Honor: 2022, First Prize, Popular Science Contest, 5th Innov. & Entr. Conf., ShanghaiTech Univ.
  Honor: 2021, Excellent Popular Science Video Award, 4th Innov. & Entr. Conf., ShanghaiTech Univ.
- **Zehui Li** Ph.D. Student, 09/2021 - present
  Education Background: B.S. Shanghai Univ.
  Research Interest: Thermal management for parallel power electronic modules.
- **Yingjian Zhuge** Ph.D. Student, 09/2021 - present
  Education Background: B.S. Zhejiang Univ.
  Research Interest: Ultra-high voltage nanosecond pulse generator.
  Honor: 2022, First Prize, Popular Science Contest, 5th Innov. & Entr. Conf., ShanghaiTech Univ.
- **Qishan Pan** Ph.D. Student, 09/2022 - present
  Education Background: B.S. Zhejiang Univ.
  Research Interest: Power Electron. for electric vehicles.
  Honor: 2023, Second Prize, Univ. Innovation Contest, Sungrow Power Inc.
- **Haoyu Zhang** Ph.D. Student, 09/2022 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Bidirectional power conversion for DC microgrids.
- **Yilin Wang** Ph.D. Student, 09/2022 - present
  Education Background: B.S. Shanghai Ocean Univ.
  Research Interest: Battery management systems.
  Honor: 2024, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
- **Yifan Wu** D.Eng. Student, 09/2024 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: TBD.

Master Students

- **Yuchong Peng** MPhil Student, 09/2022 - present
  Education Background: B.S. Central South Univ.
  Research Interest: Battery balancing and modeling.
  Honor: 2024, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
- **Chuhan Peng** MPhil Student, 09/2022 - present
  Education Background: B.S. Zhejiang Univ.
  Research Interest: Soft switching ac/dc and dc/dc converters.
  Honor: 2023, Excellent Presenter Award, China Power Electron. Energy Conver. Conf.
- **Zeyuan Liu** MPhil Student, 09/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Honor: 2024, Third Prize, the 2^{nd} Power Electronics Innovation Comp., China Power Supply Soc.
  Research Interest: Magnetic Integration.
- **Chenxi Li** MPhil Student, 09/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Dynamics of PoL converters.
  Honor: 2024, National Scholarship from Chinese Central Government.
- **Yihan Wu** MPhil Student, 09/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: High step-up ratio dc/dc converters.
- **Huangsheng Xu** MPhil Student, 09/2023 - present
  Education Background: B.S. Zhejiang Univ.
  Research Interest: Wide voltage range dc converters.
  Honor: 2025, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)

- **Ziyao Wang** MPhil Student, 09/2024 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: VRM for 48V data center.
  Honor: 2025, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
- **Guanjiang Liu** MPhil Student, 09/2024 - present
  Education Background: B.S. Harbin Inst. Technol.
  Research Interest: EV charging.

Undergraduate Students

- **Yao Qin** Undergraduate, 09/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Magnetic integration.
- **Zhaocheng Liu** Undergraduate, 09/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Low voltage dc/dc converter for electric vehicles.
  Honor: 2023, Second Prize, National Undergraduate Electronic Design Contest, Shanghai Division
- **Yuze Chen** Undergraduate, 12/2023 - present
  Education Background: B.S. ShanghaiTech Univ.
  Research Interest: Onboard chargers for electric vehicles.

Visiting Students

Postdoctoral Researcher

Ph.D. Alumni

- **Bo Xue** Ph.D., 09/2018 - 11/2024
  Education Background: B.S. Hefei Univ. Technol.
  Ph.D. Dissertation: Time domain and frequency domain modeling of bidirectional inductive power transfer systems.
  First Employment: Inovance Technology, Shenzhen.
  Honor: 2021, PSMA Travel Grant, IEEE Appl. Power Electron. Conf.(APEC)
- **Mingde Zhou** Ph.D., 09/2019 - 06/2024
  Education Background: B.S. Shandong Univ.
  Ph.D. Dissertation: Reconfigurable PEV onboard charger with ultra-wide voltage gain range
  First Employment: Huawei, Shanghai.
  Honor: 2024, graduate with Honor from the Univ. of Chinese Academy of Sciences
  Honor: 2023, Second Prize, Univ. Innovation Contest, Sungrow Power Inc.
  Honor: 2021, Best Presenter Award, IEEE Power Electron. Appl. Symp.(PEAS)
- **Liang Wang** Ph.D., 09/2019 - 06/2024
  Education Background: B.S. Harbin Eng. Univ.
  Ph.D. Dissertation: Dynamic modeling & control of board power supplies for next-generation data centers
  First Employment: Huawei, Shanghai.
  Honor: 2024, graduate with the Highest Distinction from the Univ. of Chinese Academy of Sciences
- **Dongdong Shu** Ph.D., 09/2018 - 06/2023
  Education Background: B.S. Northwestern Polytech. Univ.
  Ph.D. Dissertation: Uni/Bidirectional ultra-wide gain dc/dc converter for electric vehicles
  First Employment: Tesla Motors, Shanghai.
  Honor: 2023, Second Prize, Univ. Innovation Contest, Sungrow Power Inc.
  Honor: 2023, graduate with the Highest Distinction from the Univ. of Chinese Academy of Sciences
  Honor: 2022, National Scholarship from Chinese Central Government.

Master Alumni

- **Xiangbin Fang** MEng, 09/2020 - 06/2023
  Education Background: B.S. Wenzhou Univ.
  Thesis: High-resolution magnetic field measurement system based on nuclear magnetic resonance.
  First Employment: United Images, Shanghai
- **Runhui He** MPhil, 09/2020 - 08/2023
  Education Background: B.S. Hefei Univ. Technol.
  Thesis: Analysis and control of cascaded *LLC* converter module based solid state transformer.
  First Employment: National Institute of Extremely-weak Magnetic Field Infrastructure, Hangzhou
- **Zhengqi Wei** MPhil, 09/2019 - 06/2022
  Education Background: B.S. Shaanxi Normal Univ.
  Thesis: Optimal design and realization of constant current equalizing structure for series-connected battery strings
  Ph.D. Program: Hong Kong City Univ.
  Honor: 2021, graduate with the Highest Distinction from Shanghai Municipal Government
  Honor: 2021, Featured Student in SIST official website[link]
  Honor: 2021, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
  Honor: 2021, Excellent Popular Science Video Award, 4th Innov. & Entr. Conf., ShanghaiTech Univ.
  Honor: 2021, National Scholarship from Chinese Central Government.
  Honor: 2020, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
- **Faxiang Peng** MPhil, 09/2017 - 06/2020
  Education Background: B.S. Xi'an Univ. Technol.
  Thesis: Optimal design and realization of hybrid and hierarchical equalizing structure for series-connected battery strings.
  First Employment: Intel, Shanghai.
  Honor: 2020, Distinguished Graduate from ShanghaiTech Univ.
  Honor: 2020, Featured Student in SIST official website[link]
  Honor: 2020, China Telecom Fly Young Scholarship, only winner in ShanghaiTech Univ.
  Honor: 2020, Finalist, IEEE IAS TSC prize award, IEEE Energy Convers. Conf. Expo. (ECCE)
  Honor: 2018, Outstanding Teaching Assistant, School Info. Sci. Technol., ShanghaiTech Univ.
  Honor: 2017, Second Prize, National Graduate Electronic Design Contest, Shanghai Division
- **Junyun Deng** MPhil, 09/2017 - 06/2020
  Education Background: B.S. Huazhong Univ. Sci. & Technol.
  Thesis: Control modulation and magnetic optimization of efficient isolated bidirectional dc/dc converter adapted to wide voltage range.
  Ph.D. Program: Univ. of Twente, Netherlands.
  Honor: 2020, Distinguished Graduate from ShanghaiTech Univ.
  Honor: 2019, National Scholarship from Chinese Central Government
- **Tianhao Chen** MPhil, 09/2017 - 06/2020
  Education Background: B.S. Southeast Univ.
  Thesis: Improved finite control set MPC based strategy for islanded microgrids.
  First Employment: Fudan Microelectronics Group, Shanghai.
- **Xiaoying Lu** MPhil, 09/2016-06/2019
  Education Background: B.S. Chongqing Univ. Posts & Telecom.
  Thesis: Optimization and control of hybrid energy storage systems in plug-in electric vehicles.
  First Employment: Cisco Systems, Shanghai.
  Honor: 2019, graduate with the Highest Distinction from Shanghai Municipal Government
  Honor: 2019, Featured Student in ShanghaiTech official website[link]
  Honor: 2018, PSMA Travel Grant, IEEE Appl. Power Electron. Conf. (APEC)
  Honor: 2017, Huawei Cup & First Prize, National Graduate Mathematical Modeling Contest[link]
  Honor: 2017, Second Prize, National Graduate Electronic Design Contest, Shanghai division
- **Cheng Li** MPhil, 09/2016-06/2019

Education Background: B.S. Univ. Electron. Sci. & Technol. China
Thesis: H5-bridge based *LLC* resonant converter for ultra-wide voltage gain range applications
First Employment: Hesai Photonics Technology, Shanghai.
Honor: 2019, graduate with the Highest Distinction from Shanghai Municipal Government
Honor: 2019, Featured Student in SIST official website[link]

- **Zhiqing Li** MPhil, 09/2015-06/2018
  Education Background: B.S. Southeast Univ.
  Thesis: Secondary-side modulated resonant converters for plug-in electric vehicles.
  First Employment: Analog Devices, Shanghai.
- **Ming Shang** MPhil, 09/2015-06/2018
  Education Background: B.S. China Univ. Petroleum
  Thesis: Optimized *LLC* topologies adapted to wide voltage gain range.
  First Employment: Inovance Technology, Suzhou.
  Honor: 2018, graduate with the Highest Distinction from Shanghai Municipal Government
  Honor: 2018, Featured Student in ShanghaiTech official website[link]
  Honor: 2017, National Scholarship from Chinese Central Government
- **Liang Yu** MPhil, 09/2015-06/2018
  Education Background: B.S. Southeast Univ.
  Thesis: SiC-based PEV onboard integrated totem-pole PFC converter.
  First Employment: Envision Energy, Shanghai.
  Honor: 2018, graduate with the Highest Distinction from the Univ. of Chinese Academy of Sciences
  Honor: 2018, Featured Student in SIST official website[link]
  Honor: 2017, National Scholarship from Chinese Central Government
  Honor: 2017, Best Research Report Award in Forum of SIST Elect. and Electron. Eng.

Bachelor Alumni

- **Yue Xu** Bachelor, 09/2020 - 06/2024
  Thesis: Battery state-of-health prediction system based on multi-feature one-dimensional convolutional autoencoder
  Graduate School: Univ. of Michigan, Ann Arbor.
- **Lehan Liu** Bachelor, 09/2020 - 06/2024
  Thesis: Fast dynamic response control of non-inverting buck-boost converter
  Graduate School: ShanghaiTech Univ.
  Honor: 2023, Second Prize, National Undergraduate Electronic Design Contest, Shanghai Division
- **Ziyao Wang** Bachelor, 09/2020 - 06/2024
  Thesis: A scheme to improve the light load efficiency of trans-inductor voltage regulator based on secondary-side switch control
  Graduate School: ShanghaiTech Univ.
  Honor: 2023, Second Prize, National Undergraduate Electronic Design Contest, Shanghai Division
- **Zeyuan Liu** Bachelor, 09/2019 - 06/2023
  Thesis: Planar magnetic integrated transformer based on copper strip structure
  Graduate School: ShanghaiTech Univ.
- **Chenxi Li** Bachelor, 09/2019 - 06/2023
  Thesis: Modeling and control of trans-inductance voltage regulator modules
  Graduate School: ShanghaiTech Univ.
- **Yihan Wu** Bachelor, 09/2019 - 06/2023
  Thesis: Reconfigurable intelligent battery systems
  Graduate School: ShanghaiTech Univ.
- **Yuwei Luo** Bachelor, 09/2018-06/2022
  Thesis: Energy saving solutions: a SIST case study.
  First Employment: China Telecom., Shanghai.

- **Wei Jia** Bachelor, 09/2018-06/2022
  Thesis: Interleaved boost converter-based IPT systems with wide output voltage range.
  Graduate School: Univ. of Glasgow, UK.
- **Haoyu Zhang** Bachelor, 09/2018-06/2022
  Thesis: Stacked-bridge-based three-level DAB converter in 800V dc micro-grids.
  Graduate School: ShanghaiTech Univ.
- **Haoyi Zhu** Bachelor, 09/2017-06/2021
  Thesis: Automatic battery equalizer based on coupled buck-boost half-bridge converter.
  First Employment: FFT Group, Shanghai.
- **Jiawei Liang** Bachelor, 09/2016-06/2020
  Thesis: High step-down ratio dc/dc converter for next generation 48V bus based datacenter.
  Graduate School: ShanghaiTech Univ.
- **Qi Cao** Bachelor, 09/2014-06/2018
  Thesis: A fixed-frequency phase-shift *LLC* resonant converter with wide output range adapted to deeply depleted PEV battery charging.
  Graduate School: Univ. of Pennsylvania, USA.
- **Jiacheng Huang** Bachelor, 09/2014-06/2018
  Thesis: High efficiency isolated bidirectional dc/dc converter for residential energy storage systems.
  Graduate School: Univ. of California, San Diego, USA.
- **Dong Jiao** Bachelor, 09/2014-06/2018
  Thesis: Energy management strategy for grid-tied micro-grids and hardware-in-the-loop validation.
  Ph.D. Program: Virginia Tech, USA.
  Honor: 2017, Third Prize, National Undergraduate Electronic Design Contest, Shanghai Division

Postdoc Alumni

- **Omar Abdelrahim** Postdoc, 04/2019 - 03/2020
  Education Background: Ph.D, Utsunomiya Univ. Japan
  Research Project: Model predictive control-based grid-connected converters.
  Employment: Assistant Professor, Aswan Univ., Egypt.
- **Ji Hu** Postdoc, 03/2017-03/2019
  Education Background: Ph.D., Univ. of Warwick, U.K.
  Research Project: Reliability evaluation of wide band-gap power devices.
  Employment: Start-up business.

Visiting Student Alumni

- **Umar Khalid** Visiting Student, 09/2017-06/2018
  Education Background: Master, Shanghai Jiaotong Univ.
  Research Project: Bidirectional resonant dc/dc converters for wide voltage gain range applications.
  Ph.D. Program: Univ. Central Florida., Orlando, USA.