

PING WANG

Assistant Professor, ECE Department, HKUST

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Last updated: June 2026

WORKING EXPERIENCE

Assistant Professor, The Hong Kong University of Science and Technology

Jul. 2025 - Now

Analog Design Engineer, Kilby Labs, Texas Instruments

Jun. 2020 - Aug. 2020

EDUCATION

Princeton University, Princeton, U.S.

Sep. 2017 - May 2023

- Ph.D. of Electrical and Computer Engineering

Shanghai Jiao Tong University, Shanghai, China

Sep. 2013 - Jun. 2017

- Bachelor of Electrical Engineering

SELECTED AWARDS AND HONORS

IEEE PELS Ph.D. Thesis Talk (P3 Talk) Award [\[Link\]](#)

2024

Second Place Prize Paper Award, IEEE Transactions on Power Electronics [\[Link\]](#)

2022

Outstanding Presentation Award, IEEE APEC

2022

Second Place Prize Paper Award, IEEE Transactions on Power Electronics [\[Link\]](#)

2021

First Place, Best Student Project Demonstration Award, IEEE ECCE

2021

Yan Huo *94 Fellowship, Princeton University [\[Link\]](#)

2021

First Place, Best Student Project Demonstration Award, IEEE ECCE [\[Link\]](#)

2019

First Place, Princeton Innovation Forum [\[Link\]](#)

2019

ILIAN L. MIHOV Fellowship, Princeton University

2017

Excellent Graduate Award, Shanghai Jiao Tong University (SJTU)

2017

National Scholarship (Top 1%)

2014 & 2016

Rong Chang Innovation Scholarship, Shanghai Jiao Tong University (Top 1%)

2016

Li Fushou Special Award, Shanghai Jiao Tong University (Top 3%)

2015

Academic Excellent Scholarship (First Class), Shanghai Jiao Tong University (Top 1%)

2014

First Prize, National College Physics Competition

2014

DISSERTATION

- [D1] **P. Wang**, “Granular Power Conversion with Distributed Switching Cells and Magnetics Integration,” Ph.D. dissertation, Dept. of Electrical and Computer Engineering, Princeton University, Princeton, NJ, USA, 2023. [\[Link\]](#)

JOURNAL PAPERS

- [J11] **P. Wang**, Y. Chen, G. Szczeszynski, S. Allen, D. M. Giuliano and M. Chen, “MSC-PoL: Hybrid GaN-Si Multistacked Switched Capacitor 48V PwrSiP VRM for Chiplets,” *IEEE Transactions on Power Electronics*, vol. 38, no. 10, pp. 12815–12833, Oct. 2023.
- [J10] **P. Wang**, D. Zhou, H. Li, D. M. Giuliano, G. Szczeszynski, S. Allen, and M. Chen, “Interphase LC Resonance and Stability Analysis of Series-Capacitor Buck Converters,” *IEEE Transactions on Power Electronics*, vol. 38, no. 5, pp. 5680–5687, May 2023.
- [J9] Y. Elasser, H. Li, **P. Wang**, J. Baek, K. Radhakrishnan, S. Jiang, H. Gan, X. Zhang, D. M. Giuliano, and M. Chen, “Circuits and Magnetics Co-Design for Ultra-Thin Vertical Power Delivery: A Snapshot Review,” *MRS Advances*, vol. 9, no. 1, pp. 12–24, Feb. 2024.

- [J8] M. Liao, H. Li, **P. Wang**, T. Sen, Y. Chen, and M. Chen, “Machine Learning Methods for Feedforward Power Flow Control of Multi-Active-Bridge Converters,” *IEEE Transactions on Power Electronics*, vol. 38, no. 2, pp. 1692–1707, Feb. 2023.
- [J7] **P. Wang**, D. H. Zhou, Y. Elasser, J. Baek and M. Chen, “Matrix Coupled All-in-One Magnetics for PWM Power Conversion,” *IEEE Transactions on Power Electronics*, vol. 37, no. 12, pp. 15035–15050, Dec. 2022. [\[TPEL Highlighted Paper\]](#)
- [J6] T. Liu, X. Zhao, **P. Wang**, Q. C. Burlingame, J. Hu, K. Roh, Z. Xu, B. P. Rand, M. Chen and Y.-L. Loo, “Highly Transparent, Scalable, and Stable Perovskite Solar Cells with Minimal Aesthetic Compromise,” *Advanced Energy Materials*, vol. 13, no. 33, Art. no. 2200402, Sep. 2023.
- [J5] **P. Wang** and M. Chen, “Analysis and Design of Series Voltage Compensators for Differential Power Processing,” *IEEE Journal of Emerging and Selected Topics in Power Electronics*, vol. 10, no. 6, pp. 7890–7903, Dec. 2022.
- [J4] Y. Chen, **P. Wang**, H. Cheng, G. Szczeszynski, S. Allen, D. M. Giuliano and M. Chen, “Virtual Intermediate Bus CPU Voltage Regulator,” *IEEE Transactions on Power Electronics*, vol. 37, no. 6, pp. 6883–6898, Jun. 2022.
- [J3] **P. Wang**, R. C. N. Pilawa-Podgurski, P. T. Krein and M. Chen, “Stochastic Power Loss Analysis of Differential Power Processing,” *IEEE Transactions on Power Electronics*, vol. 37, no. 1, pp. 81–99, Jan. 2022.
- [J2] **P. Wang**, Y. Chen, J. Yuan, R. C. N. Pilawa-Podgurski, and M. Chen, “Differential Power Processing for Ultra-Efficient Data Storage,” *IEEE Transactions on Power Electronics*, vol. 36, no. 4, pp. 4269–4286, Apr. 2021. [\[TPEL Highlighted Paper\]](#) [\[TPEL Prize Paper Award\]](#)
- [J1] Y. Chen, **P. Wang**, Y. Elasser, and M. Chen, “Multicell Reconfigurable Multi-Input Multi-Output Energy Router Architecture,” *IEEE Transactions on Power Electronics*, vol. 35, no. 12, pp. 13210–13224, Dec. 2020. [\[TPEL Prize Paper Award\]](#)

CONFERENCE PROCEEDINGS

- [C26] Z. Yan, Z. Zhou, J. Jiang, K. Chen and **P. Wang**, “Design and Optimization of a 48V–1V Merged Buck–Boost LLC Converter for Vertical Power Delivery to Ultra-High-Current AI Processors” in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, San Antonio, TX, USA, 2026.
- [C25] B. Zhang, X. Xia, Y. Zi, **P. Wang** and W. Han, “Wirelessly Powering a Cardiac Pacemaker with a Body-Coupled TENG for Self-Powered Operation and Sensing”, in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, San Antonio, TX, USA, 2026.
- [C24] Y. Shi, X. Liu, C. Hu, T. Tang, **P. Wang**, Q. Pan and J. Jiang, “Stackable and Scalable Distributed 48-60V Intermediate Bus Converter with Granular Floating SC Converters Achieving 3001W/in³ Power Density for AI Computing” in *Proc. IEEE Custom Integrated Circuits Conference (CICC)*, Seattle, WA, USA, 2026.
- [C23] X. Zhang, X. Wu, J. Sun, **P. Wang** and Y. Zhang, “Minimum Data Requirements for Data-Driven Reliability-Oriented Design by Active Learning,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Philadelphia, PA, USA, 2025.
- [C22] **P. Wang**, D. M. Giuliano, S. Allen and M. Chen, “MSC-PoL: An Ultra-Thin 220-A/48-to-1-V Hybrid GaN-Si CPU VRM with Multistack Switched Capacitor Architecture and Coupled Magnetics,” in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, Orlando, FL, USA, 2023.
- [C21] M. Liao, D. H. Zhou, **P. Wang** and M. Chen, “Power Systems on Chiplet: Inductor-Linked Multi-Output Switched-Capacitor Multi-Rail Power Delivery on Chiplets,” in *Proc. IEEE International Symposium on 3D Power Electronics Integration and Manufacturing (3D-PEIM)*, Miami, FL, USA, 2023.
- [C20] **P. Wang**, D. Zhou, D. M. Giuliano, M. Chen and Y. Chen, “Multistack Switched-Capacitor Architecture with Coupled Magnetics for 48V-to-1V VRM,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Tel Aviv, Israel, 2022.
- [C19] **P. Wang**, Y. Elasser, V. Yang and M. Chen, “WAN Converter: A Family of Multicell PWM Converter with All-in-One Magnetics,” in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2022. [\[Outstanding Presentation Award\]](#)

- [C18] **P. Wang**, D. Zhou, V. Yang and M. Chen, “Matrix Coupled All-in-One Magnetics for PWM Power Conversion,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, 2021.
- [C17] D. H. Zhou, A. Bendory, **P. Wang** and M. Chen, “Intrinsic and Robust Voltage Balancing of FCML Converters with Coupled Inductors,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, 2021.
- [C16] M. Liao, H. Li, **P. Wang**, Y. Chen and M. Chen, “Machine Learning Methods for Power Flow Control of Multi-Active-Bridge Converters,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, 2021.
- [C15] **P. Wang** and M. Chen, “Performance Limits of Differential Power Processing,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Aalborg, Denmark, 2020.
- [C14] **P. Wang** and M. Chen, “Series Voltage Compensator for Differential Power Processing,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Detroit, MI, USA, 2020.
- [C13] J. Baek, **P. Wang**, Y. Elasser, Y. Chen, S. Jiang, and M. Chen, “LEGO-PoL: A 48V-1.5V 300A Merged-Two-Stage Hybrid Converter for Ultra-High-Current Microprocessors,” in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, New Orleans, LA, USA, 2020.
- [C12] **P. Wang**, Y. Chen, P. Kushima, Y. Elasser, M. Liu, and M. Chen, “A 99.7% Efficient 300 W Hard Disk Drive Storage Server with Multiport AC-Coupled Differential Power Processing (MAC-DPP) Architecture,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Baltimore, MD, USA, 2019. [[First Prize of the ECCE Best Student Project Demo Contest](#)] [[Demo Video](#)]
- [C11] **P. Wang**, Y. Chen, Y. Elasser, and M. Chen, “Small Signal Model for Very-Large-Scale Multi-Active-Bridge Differential Power Processing (MAB-DPP) Architecture,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Toronto, ON, Canada, 2019.
- [C10] Y. Chen, **P. Wang**, Y. Elasser, and M. Chen, “LEGO-MIMO Architecture: A Universal Multi-Input Multi-Output (MIMO) Power Converter with Linear Extendable Group Operated (LEGO) Power Bricks,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Baltimore, MD, USA, 2019.
- [C9] M. Liu, **P. Wang**, Y. Guan, and M. Chen, “A 13.56 MHz Multiport-Wireless-Coupled (MWC) Battery Balancer with High Frequency Online Electrochemical Impedance Spectroscopy,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Baltimore, MD, USA, 2019.
- [C8] Y. Guan, **P. Wang**, M. Liu, D. Xu, and M. Chen, “MSP-LEGO: Modular Series-Parallel (MSP) Architecture and LEGO Building Blocks for Non-isolated High Voltage Conversion Ratio Hybrid DC-DC Converters,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Baltimore, MD, USA, 2019.
- [C7] Y. Elasser, Y. Chen, **P. Wang**, and M. Chen, “Sparse Operation of Multi-Winding Transformer in Multiport-AC-Coupled Converters,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Toronto, ON, Canada, 2019.
- [C6] J. Baek, **P. Wang**, S. Jiang, and M. Chen, “LEGO-PoL: A 93.1% 54V-1.5V 300A Merged Two-Stage Hybrid Converter with a Linear Extendable Group Operated Point-of-Load (LEGO-PoL) Architecture,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Toronto, ON, Canada, 2019.
- [C5] Y. Chen, Y. Elasser, **P. Wang**, J. Baek, and M. Chen, “Turbo-MMC: Minimizing the Submodule Capacitor Size in Modular Multilevel Converters with a Matrix Charge Balancer,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Toronto, ON, Canada, 2019.
- [C4] Y. Chen, **P. Wang**, H. Li, and M. Chen, “Power Flow Control in Multi-Active-Bridge Converters: Theories and Applications,” in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, Anaheim, CA, USA, 2019.
- [C3] **P. Wang** and M. Chen, “Towards Power FPGA: Architecture, Modeling and Control of Multiport Power Converters,” in *Proc. IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Padua, Italy, 2018.
- [C2] **P. Wang**, T. Zhang, and R. Li, “A New Hybrid Modular Multilevel Converter with Integrated Battery Energy Storage,” in *Proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Cincinnati, OH, USA, 2017.

- [C1] W. Li, **P. Wang**, C. Yao, Y. Zhang, and H. Tang, “Experimental Investigation of 1D, 2D, and 3D Metamaterials for Efficiency Enhancement in a 6.78 MHz Wireless Power Transfer System,” in *Proc. IEEE Wireless Power Transfer Conference (WPTC)*, Aveiro, Portugal, 2016.

BOOK CHAPTERS

- [B2] **P. Wang**, M. Chen, and R. C. N. Pilawa-Podgurski, “Data Center Power Delivery: Differential Power Processing Architecture,” in *Wide Bandgap Power Electronics*, Springer, Cham, 2025.
- [B1] **P. Wang**, Z. Qin, J. Yuan, and F. Blaabjerg, “Dual Active Bridge Converter and Its Control,” in *Control of Power Electronic Converters and Systems: Volume 4*, Academic Press, 2024, pp. 71–100.

SELECTED PATENTS

- [P2] M. Chen, **P. Wang**, G. Szczeszynski, “Methods, devices, and systems for multiphase coupled inductors,” WIPO/PCT Patent, WO2025137179A1, Publication Date: 2025-06-26.
- [P1] M. Chen, Y. Chen, **P. Wang**, D. Giuliano, “Methods, devices, and systems for power converters,” U.S. Patent, US20250007399A1, Publication Date: 2025-01-02.

INVITED SEMINARS

- [S8] “Research, Service, and Growth through IEEE PELS,”
IEEE Power Electronics Society (PELS) Salon Event (China Region), Apr. 24, 2026.
- [S7] “Power for AI and AI for Power,”
Xi’an Jiao Tong University, Jun. 5, 2026.
Huazhong University of Science and Technology, Jun. 3, 2026.
Fudan University, Mar. 16, 2026.
Shanghai Jiao Tong University, Mar. 16, 2026.
Zhejiang University, Mar. 17, 2026.
- [S6] “A Granular Hybrid Switched-Capacitor/-Magnetics Approach for High-Current AI Processors,”
2025 Mini Power IC Workshop, Dec. 12, 2025.
- [S5] “Powering Future AI Chips: Key Innovations from Circuit Topology to Device and Packaging,”
2025 CPSSC, Nov. 7, 2025. [Keynote Tutorial, with Prof. Yenan Chen]
- [S4] “Granular Power Conversion and Magnetic Integration for High-Frequency/-Power-Density Applications”
CPSS Cloud Seminar (Episode 9), Sept. 27, 2025.
- [S3] “Powering the AI Data Centers: Architectures, Controls, and the Road Ahead,”
2025 ZPEC Panel Session, Aug. 23, 2025.
- [S2] “Magnetics and Architecture Co-Design for High-Performance Power Conversion,”
UM Hetao “Chip Innovation” Distinguished Lecture, Aug. 11, 2025.
- [S1] “Developing the Next Generation Power Electronics for Emerging Energy Systems,”
Hong Kong University of Science and Technology, Feb. 24, 2025.
Chinese University of Hong Kong, Mar. 6, 2025.

TEACHING

- Spring 2026, HKUST ELEC3310 - Digital Fundamentals and System Design
- Spring 2026, HKUST ELEC6900J - Independent Study
- Spring 2026, HKUST ELEC1910 & ELEC2910 - Academic and Professional Development
- Spring 2026, HKUST CPEG1930 & CPEG2930 - Academic and Professional Development
- Fall 2025, HKUST ELEC1910 & ELEC2910 - Academic and Professional Development
- Fall 2025, HKUST CPEG1930 & CPEG2930 - Academic and Professional Development

ADVISED STUDENTS AND POSTDOCS

- **Postdoctoral Researchers:** Bowang Zhang, Yichao Ji
- **Ph.D. Students:** Chuhan Peng, Jinshuo Xu
- **Visiting Students:** Yang Shen (HKUST-GZ), Qiuyun Zhang (Sichuan University), Kai Zhang (Tsinghua University), Jiwen Gong (HUST)
- **Ph.D. Qualifying Exam Committee:** Manyu Wang (HKUST), Ce Zhang (HKUST), Wei Wei (HKUST), Yujia Cao (HKUST), Mengming Li (HKUST), Hongyu Bao (HKUST), Jinming Ge (HKUST), Tsz Fai Kwok (HKUST), Xin Zhao (HKUST)

PROFESSIONAL AND SERVICE ACTIVITIES

A. Editorial and Committee Assignments in Professional Organizations/Activities

- **Young Editorial Board,** *iEnergy* journal
- **Secretary,** IEEE Magnetics Society (Hong Kong Chapter)
- **Technical Program Committee/Track Chair/Session Chair,** COMPEL 2025 – 2026, APEC 2026, ECCE 2026, CPSS EMC 2026
- **Committee Member,** Magnetic Technology Committee of China Power Supply Society
- **Committee Member,** Artificial Intelligence Committee of China Power Supply Society
- **Co-Organizing Chair,** *Princeton CIRCUITS Seminar Series*, 2020–2023
- **Technical Reviewer,** IEEE journals and conferences in power electronics, energy conversion, and industrial electronics, including TPEL, JESTPE, TEC, TIA, APEC, ECCE, COMPEL, and IECON

B. University Committees and Service

- **Interviewer and Outreach Representative** for the EAS and JEE Programs
- **Department Committee Member,** UG Student Affairs Committee, CPEG Committee (ECE), Internship and Industry-Liaison Committee