

# PING WANG

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## WORKING EXPERIENCE

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Assistant Professor, The Hong Kong University of Science and Technology	<i>Jul. 2025 - Now</i>
Analog Design Engineer, Kilby Labs, Texas Instruments	<i>Jun. 2020 - Aug. 2020</i>

## EDUCATION

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<b>Princeton University</b> , Princeton, U.S. <ul style="list-style-type: none"><li>• Ph.D. of Electrical and Computer Engineering</li></ul>	<i>Sep. 2017 - May 2023</i>
<b>Shanghai Jiao Tong University</b> , Shanghai, China <ul style="list-style-type: none"><li>• Bachelor of Electrical Engineering</li></ul>	<i>Sep. 2013 - Jun. 2017</i>

## AWARDS AND HONORS

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<b>IEEE PELS Ph.D. Thesis Talk (P3 Talk) Award</b> <a href="#">[Link]</a>	<i>2024</i>
<b>Second Place Prize Paper Award</b> , IEEE Transactions on Power Electronics <a href="#">[Link]</a>	<i>2022</i>
<b>Outstanding Presentation Award</b> , IEEE APEC	<i>2022</i>
<b>Second Place Prize Paper Award</b> , IEEE Transactions on Power Electronics <a href="#">[Link]</a>	<i>2021</i>
<b>First Place, Best Student Project Demonstration Award</b> , IEEE ECCE	<i>2021</i>
<b>Yan Huo *94 Fellowship</b> , Princeton University <a href="#">[Link]</a>	<i>2021</i>
<b>First Place, Best Student Project Demonstration Award</b> , IEEE ECCE <a href="#">[Link]</a>	<i>2019</i>
<b>First Place</b> , Princeton Innovation Forum	<i>2019</i>
<b>ILIAN L. MIHOV Fellowship</b> , Princeton University	<i>2017</i>
<b>Excellent Graduate Award</b> , Shanghai Jiao Tong University (SJTU)	<i>2017</i>
<b>National Scholarship</b> (Top 1%)	<i>2014 &amp; 2016</i>
<b>Rong Chang Innovation Scholarship</b> , Shanghai Jiao Tong University (Top 1%)	<i>2016</i>
<b>Academic Excellent Scholarship (First Class)</b> , Shanghai Jiao Tong University (Top 1%)	<i>2014</i>
<b>Li Fushou Special Award</b> , Shanghai Jiao Tong University (Top 3%)	<i>2015</i>
<b>First Prize</b> , National College Physics Competition	<i>2014</i>

## DISSERTATION

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- **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

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- **P. Wang**, Y. Chen, G. Szczeszynski, S. Allen, D. M. Giuliano and M. Chen, “MSC-PoL: Hybrid GaN-Si Multi-stacked Switched Capacitor 48V PwrSiP VRM for Chiplets,” *IEEE Transactions on Power Electronics*, vol. 38, no. 10, pp. 12815–12833, Oct. 2023.
- **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.
- 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.

- 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.
- **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](#)]
- 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.
- **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.
- 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.
- **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.
- **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](#)]
- 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

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- **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)*, 2023.
- 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.
- **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.
- **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](#)]
- **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.
- 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.
- 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.
- **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.
- **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.

- 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.
- **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. [[1st Prize of the ECCE Best Student Project Demo Contest](#)] [[Demo Video](#)]
- **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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- **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.
- **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.
- 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

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- **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.
- **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.

# PROFESSIONAL SERVICE

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**Co-Chair of Princeton CIRCUITS Seminars**, Princeton University

*2020 - 2023*

**Technical Reviewer**

*2017 - Now*

IEEE Transactions on Power Electronics

IEEE Journal of Emerging and Selected Topics in Power Electronics

IEEE Transactions on Energy Conversion

IEEE Transactions on Industry Applications

IEEE Journal of Emerging and Selected Topics in Industrial Electronics

CSEE Journal of Power and Energy Systems

IEEE Applied Power Electronics Conference and Exposition (APEC)

IEEE Energy Conversion Congress and Exposition (ECCE)

IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)

IEEE Conference of the IEEE Industrial Electronics Society (IECON)