Mun-Jung Cho

Department of Electrical Engineering
Combined M.S./Ph.D. Program
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PICTUS Lab
LinkedIn Profile

Research Interests

Power Management ICs
- Inductive Switching DC-DC Converter: Buck, Boost, Buck-Boost, SIMO Converter
- Switched Capacitor Converter
- LDO Regulator: Analog/Digital

LED Drivers
Energy Harvesting Circuits
Integrated Circuit Design: Analog, Digital, Mixed

Education

• **Pohang University of Science and Technology (POSTECH)** *Sep. 2023 - Present*
Combined M.S/Ph.D. Program in Department of Electrical Engineering Advisor : Se-Un Shin

• **Ulsan National Institute of Science and Technology (UNIST)** *Feb. 2019 - Feb. 2023*
B.S. in Department of Electronic Engineering Advisor : Se-Un Shin

Publications

International

- Jong-Hun Kim, Seung-Ju Lee, Yeon-Woo Jeong, **Mun-Jung Cho**, Min-Sik Kim, Myeong-Ho Kim, Se-Un Shin, "Programming-Free Three-Dimensional Resonant Current-Mode Wireless Receiver with Real-Time Link-Adaptivity and a 0.904 cm^3 Receiver Coil for Implantable Systems", 2025 IEEE International Solid-State Circuit Conference (ISSCC), Feb. 2025.

- Yeon-Woo Jeong, Seung-Ju Lee, Jong-Hun Kim, **Mun-Jung Cho**, Hwa-Soo Kim, Se-Un Shin, "A Scalable N-Step Equal Split SSHI Piezoelectric Enegry Harvesting Circuit Achieving 1170% Power Extraction Improvement and 22nA Quiescent Current with a 1uH-to-10uH Low Q Inductor" 2023 IEEE International Solid-State Circuits Conference (ISSCC), Feb. 2023.

- Seung-Ju Lee, Yeon-Woo Jeong, **Mun-Jung Cho**, Jong-Hun Kim, Hwa-Soo Kim, Jun-Suk Bang, Se-Un Shin, "A 95.3% 5V-to-32V Wide Range 3-Level Current Mode Boost Converter with Fully State-based Phase Selection Achieving Simultaneous High-Speed V_{CF} Balancing and Smooth Transition" 2023 IEEE International Solid-State Circuits Conference (ISSCC), Feb. 2023.

Domestic

- **Mun-Jung Cho**, Se-Un Shin, "Frequency Analysis of Conventional And 3-Level Buck Converter" IDEC Congress Chip Design Contest (CDC), July. 2024.

- **Mun-Jung Cho**, Se-Un Shin, "Frequency Analysis of Conventional And 3-Level Buck Converter" Annual Conference of ISE, Dec. 2023.

- **Mun-Jung Cho**, Seung-Ju Lee, Jong-Hun Kim, Se-Un Shin, "A High-Efficiency Du al Path Buck-Boost Converter with Wide Input Range" 2023 Korean Conference on Semiconductors (KCS), Feb. 2023.

- **Mun-Jung Cho**, Se-Un Shin, "A High-Efficiency Dual Path Buck-Boost Converter with Wide Input Range" Annual Conference of ISE, Dec. 2022.

- **Mun-Jung Cho**, Jong-Hun Kim, Se-Un Shin, "Design of Ladder Charge Pump with Active Gate Driving" Annual Conference of ISE, Dec. 2022.

Honors

• **2024 Master's Student Research Scholarship** by the National Research Foundation *July, 2024 - Present*

Experience

• **Undergraduated Research Intern** *July. 2021 - Aug. 2023*
Power and Integrated Circuit Technology for Universal Systems (PICTUS) Advisor : Se-Un Shin

Technical Skills

Simulator

- Cadence Virtuoso : Spectre, Calibre, Finesim
- Synopsis : DC, ICC, StarRC for AutoPnR
- Silvaco : SmartSpice
- Powersim (PSIM)
- SIMetrix/SIMPLIS
- PSpice, LTSpice

PCB Design

- OrCAD
- KiCAD
- PADS Logic