



#### ■ Contact information

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#### ■ Current state of the Lab. (in 2025 Spring Semester)

Postdoctoral Fellows : 1      PhD Students: 10      Master's Student: 10

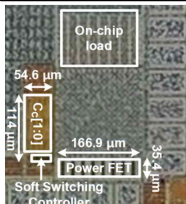
#### ■ Research Areas

Our research group pioneers cutting-edge advancements from transistor-level to system-level circuit design. We excel in analog/digital co-design, aiming to design circuits in a smarter and more energy-efficient way. Our research covers a wide range of areas such as op-amps, power management circuits, sensor interfaces, AI accelerators, and general-purpose processors. Through these works, we are dedicated to developing compact and cost-effective IoT platforms that are powerful and adoptable to modern technological demands.

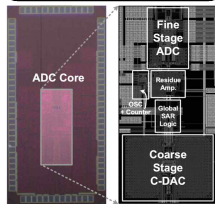
#### ► Our Works

##### Analog/Mixed Signal

###### Low Dropout Regulator

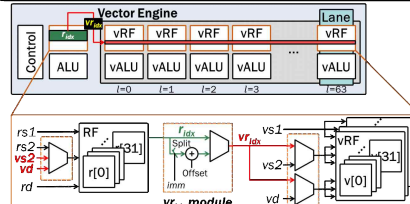


###### Analog-to-Digital Converter



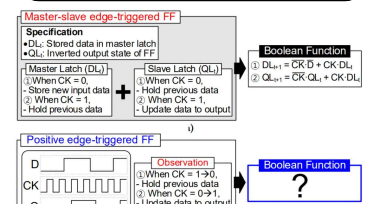
##### Digital/System

###### Microarchitecture for Edge Computing

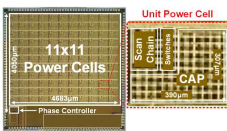


##### Design Automation

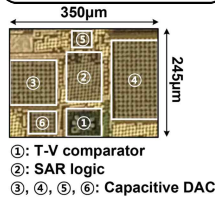
###### Sequencing Element Generator



###### SC Power Converter



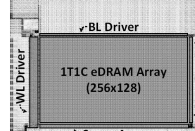
###### On-chip Temp. Sensor



###### Low-power Flip-Flop



###### Compute-in-Memory



###### DC-DC Converter Topology Generator



#### ■ Recommended courses & Career after graduation

Courses for analog and digital integrated circuits are strongly recommended. Basic English and programming skills are necessary. The career after graduation includes academia or industries related to circuit design.

#### ■ Introduction to other activities besides research

Our group holds regular dinners and annual workshop. The group supports attendance at top international conferences in the field of integrated circuits such as ISSCC and VLSI-C, and other student-driven events and activities.

#### ■ Introduction to the Lab.

Since 2019, our group has been working with graduate students and undergraduate students who are interested in IoT/low-power circuits and systems. Our lab offers a friendly atmosphere with various research opportunities and encourages creative approaches to research.

##### Intl. Conference



##### Lab Events



#### ■ Recent research achievements ('24~'25')

- [1] "A MOS-Based **Temperature Sensor** With Energy-Efficient Techniques", IEEE SSC-L, 2025
- [2] "A Single/Dual-Output **Switched-Capacitor DC-DC Converter** with Geometrically Arranged Soft VCR Transitions", IEEE A-SSCC, 2024
- [3] "SeGen: **Automatic Topology Generator** for Sequencing Elements", ACM/IEEE ICCAD, 2024
- [4] "A High-Resolution **Pipelined-SAR ADC** Using Cyclically Charged Floating Inverter Amplifier", IEEE JSSC, Jul. 2024 (invited)
- [5] "A 0.6-1 V VIN Soft-Switching **Low Dropout Regulator** With 31.3 A/mm<sup>2</sup> Current Density, 99.99% Current Efficiency, and 2.04 fs FoM", IEEE VLSI-C, 2024
- [6] "VVIP: Versatile Vertical Indexing **Processor for Edge Computing**", ACM/IEEE DAC, 2024
- [7] "A Redundant-Transition-Free and Contention-Free Change-Sensing **Flip-Flop**", IEEE TCAS-II, Mar.2024 (invited)