



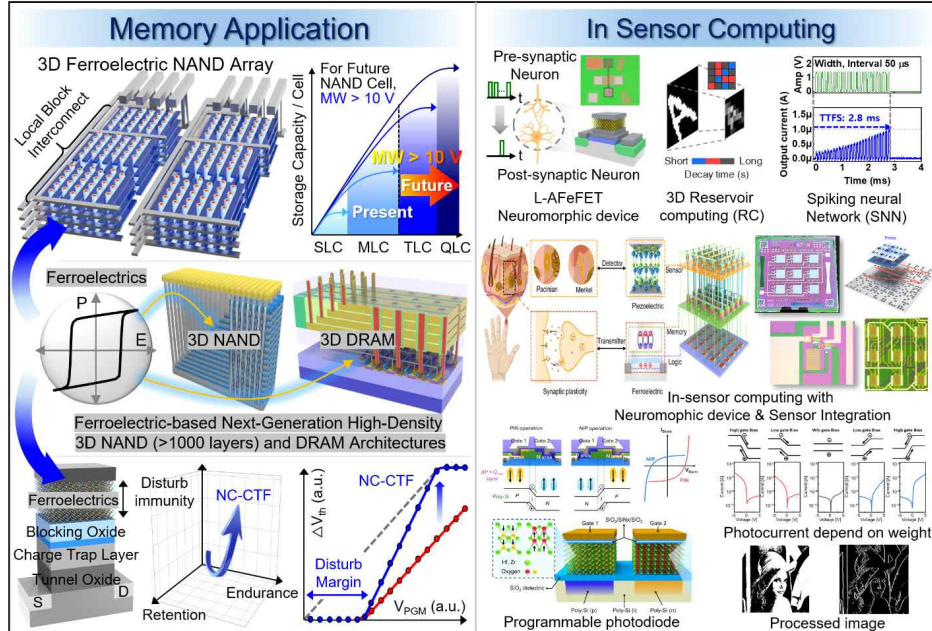
■ Contact information

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

Postdoctoral Fellows : 1 PhD Students: 6 Master's Student: 16

■ Research Areas



■ Career after graduation

◇ Career : Semiconductor Industries and Institutes (Samsung, SK hynix, Qualcomm, NVIDIA, ETRI, Georgia Tech, etc.)

■ Introduction to other activities besides research

◇ Great Work Place (GWP) event : Wine seminar, LAB field trips
◇ Regular group meal and Coffee time with LAB members

■ Introduction to the Lab.

Our research group is dedicated to developing device-level solutions for ultra-dense 3D NAND flash and DRAM architectures based on ferroelectric materials. We also demonstrate broad leadership in implementing in-sensor computing systems with a focus on future artificial intelligence applications. Join us in driving real technology innovation —our lab is actively recruiting highly motivated students eager to contribute to impactful research and development.

Recent Papers and Research Achievements (Last 5 Years: Approximately 110 SCI Papers)

- NAND Flash Int. Elect. Dev. Meeting (TBD IEDM 2023)
- High performance FTJ, IEEE Symp. VLSI Tech. & Circuit (2023)
- FTJ based PUF, IEEE J. Sol. Sta. Circuits (2023)
- NC-based CIM device, Adv. Funct. Mat. (2023)
- Flash type CIM device, IRPS (2023)
- PIM device, ACS Apl. Mat. Int. (2023)
- M3D Sensor, Nano Energy (2024)
- NAND Flash, Int. Elect. Dev. Meeting (IEDM 2022)
- Super steep transistor, ACS Appl. Mat. Int. (2022)
- 1T-nC based majority functional logic, IEEE EDL (2022)
- Low EOT MPB, ACS Appl. Mat. Int. (2022)
- Microwave annealed low Temp. hafnia ACS Appl. Mat. Int. (2022)
- High performance & self rectifying FTJ, (IEDM 2021)
- Mechanism of FTJ, ACS Nano (2024)

Awards and Honors

- Awarded the 2022 Minister of Trade, Industry and Energy Commendation
- Received the 2013 Samsung Paper Champion Award
- Awarded the 2012 Samsung Infinite Exploration/Innovation Award
- Received the 2011 Samsung Best Paper Award
- Awarded the Samsung Electronics Innovation Award (2010-2011)

Publications, Conference Papers

- Approximately 200 SCI papers and 125 conference papers
- Presented a total of 19 papers at IEDM and VLSI Technology Symposium, the top conferences in the semiconductor device field
- In the past two years, presented 5 papers at IEDM, 3 at VLSI, 1 at IRPS, and participated in 9 HPS

