Theme: Electronic Material

- Sub Theme: (Ferroelectric, Resistive, Phase change, Magnetic) Material-Based Memory Device

Si-based Memory scaling is currently facing the physical limit, and new research is needed for the industrialization of memory using new materials. Although the next generation of memory has been studied for a long time, it is necessary to make a new breakthrough in core technologies for commercialization.

We need to study technologies that can replace the existing stand-alone memory and the devices that can be applied for new applications such as in-memory computing. It is also time to study more new concepts than the already well-known next-generation memory devices.

The topics we pursue through this GRO are as follows:

1) High-density storage technologies that can replace NAND in 10 years
2) Working Memories to replace DRAM in 10 years
3) Novel Memories capable of replacement of SRAM, eDRAM, and eNVM
4) Low power devices for new concept system
   (In-memory computing, Neuromorphic, SCM, etc.)
5) Finding new concepts other than Ferroelectric, Resistive, Phase change, and Magnetic
6) Analog Memories for Neurotrophic and Artificial Intelligence

※ *The topics are not limited to the above examples and the participants are encouraged to propose the original idea.*

※ *Funding: Up to USD 150,000 per year*