Theme: Semiconductor Process

- Sub Theme: ALD for Semiconductor

Because 3D or vertical devices will be the main device structures for future semiconductors, Atomic Layer Deposition (ALD) method is one of the most important depositions for various vertical device structures.

Nevertheless, new ALD concepts are still updated and serval important materials for devices are still being studied to demonstrate ALD process for controlling thin layers. Especially, the development of chemically inhibiting materials on the narrow spatially patterned substrate is needed for better selectivity and productivity. Also, the systematic process of pretreatment, deposition, and etch for the *in-situ* ALD process needs to be optimized along with relative reactor designs.

Therefore, we need fundamental and innovative ALD methods for various future semiconductor materials or current materials for future semiconductor devices.

The topics we are through this GRO are as follows:

· Fundamental and innovative ALD methods.
· Extreme ALD process for vertical devices.
· New materials by ALD process for future devices.
· New selective ALD methods for vertical devices.
· Unique surface treatment techniques or chemically-selective inhibitor molecules.
· Innovative reactor designs for productive *in-situ* area-selective ALD process.
· ALD techniques for lateral gap-fill.

※ *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*