

Theme: Semiconductor Equipment

- Sub Theme: Athermal Optics Design, EUV freeform mirror inspection for Semiconductor

EUV Lithography(EUVL) System is currently used in a High Volume Manufacturing process to print the smallest features on a silicon wafers. EUVL Scanners use multilayer mirrors to reflect light from the EUV source to the wafer. However, during production these mirrors suffer from reflectivity performance degradation due to contamination and unstable thermal environment by high energy photons.

Therefore, athermal optics design is important to EUVL to maintain the image performance in harsh environment. There are all included like as materials, mechanical optical mount and actuator design as well as mirrors. In addition, inspection technique for freeform mirror is required to investigate the degradation of EUV reflectivity by contamination or other thermal effects.

We need fundamental and innovative technology for EUV scanner optics for future semiconductor devices.

The topics we are through this GRO are as follows:

- Fundamental and innovative athermal optics designs.
- Inspection technology for freeform mirror in high resolution.
- New materials for athermal optics.
- Unique and robust surface treatment techniques to maintain the performance of mirror.

※ *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*