

Theme: Semiconductor Process

- Sub Theme: Next-generation AI Technique for Semiconductor Metrology and Inspection

As the design rules of recent semiconductor products continue to scale down, the importance of metrology and inspection (MI) has become higher. However, most of the equipment for MI such as microscopy and spectroscopy encounter the challenge due to physical limitation. Recently, chip makers and equipment providers have suggested software solutions to mitigate the challenges above.

Meanwhile, AI technology has emerged as a powerful tool in semiconductor metrology and inspection. We are aiming to find innovative AI techniques to overcome the aforementioned challenges in MI. The topics we are pursuing with this GRO include but not limited to:

- Label-efficient machine learning in semiconductor image segmentation or 3D structure regression with spectra
- SEM/TEM-like semiconductor image generation with design data or segmentation mask
- Image super-resolution or enhancement for semiconductor metrology and inspection
- Drift detection with small data in production environment

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

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