

UV/DUV Lithography

Lithography is one of the enabling technologies that have lead to the extension of Moore's law and dominance of silicon in the microelectronics industry. Photomasks are fabricated using e-beam lithography. Optical lithography can be classified into contact/proximity and projection lithography. Our system is a contact mask aligner where the photomask and the substrate coated with a photosensitive resist are brought into contact and exposed using an optical source. The resolution of the patterned features on the substrate is governed by the Rayleigh's criteria ($\text{Resolution} \sim k \cdot \lambda / \text{NA}$), where λ = wavelength of illumination and NA: numerical aperture). Our system has to capability to use the most common I-line of 365nm and perform DUV lithography at 220nm. The applications of photolithography in our lab ranges from semiconductor, MEMS and optoelectronic devices to multichip modules.



ABM DUV Mask aligner with 220/365nm line.
Interchangeable mask holders and substrate chucks with pre-alignment.
Alignment optics and XYZ motion controller.