

Multilayer development for EUV Lithography

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Extreme Ultraviolet Lithography at a wavelength of 13.5nm is scheduled to succeed Deep UV imaging schemes in the manufacture of integrated circuits. A major milestone accomplished so far by the EUVL developers consists of the operation of two demonstration wafer scanners, so called Alpha-Demo tools, yielding printed features with sizes down to 30 nm.

To introduce the technology for high volume chip manufacturing by 2009 and beyond, a large program is carried out by Carl Zeiss SMT AG.

This includes the continuous improvement of Mo/Si based multilayer reflective coatings in collaboration with external partners.

Here we present the status of our present work on some of the major issues like improvement of the reflectance, long-term stability of high-temperature multilayer coatings, the film stress mitigation spectral purity and the reduction of residual thickness profile errors.