

## EUV Lithography and X-ray metrology challenges for the Semiconductor Industry

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ASML is the world's leading manufacturer of lithography scanners for the semiconductor industry. One of the key technologies that have been developed in recent years for semiconductor lithography is the Extreme Ultraviolet (EUV) scanner. EUV Lithography (EUVL) forms the key enabling technology for further miniaturization of integrated circuits.

Continuing shrink of semiconductor devices requires improvements in lithography in combination with metrology tools. The devices consist of many layers forming increasingly complex, 3 dimensional structures. In many cases materials are used that are opaque to visible light. New metrology tools are needed to control the manufacturing process with sub-nanometer accuracy. This metrology need may be partly fulfilled using new light sources with higher brightness and shorter wavelengths, particularly X-ray light sources.

I will discuss the opportunities and some of the limitations that I see for the development of these light sources in the context of semiconductor device manufacturing.