



1. Title:	At-wavelength reflectometry with the EUV tube
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3. Abstract body:

For the precise characterization, optimization, and quality control of multilayer mirrors, masks, and other optical components for EUV lithography, compact and flexible metrology tools are strongly required. At present, the characterization of EUV optics is carried out at synchrotron facilities which is a very expensive and time consuming procedure. Therefore, compact, inexpensive, and easy-to-use tools and systems are needed for a fast and reliable in-house at-wavelength reflectivity control.

In this presentation we will provide an update on our commercial compact EUV source for in-house at-wavelength metrology. This source, called EUV tube, is based on electron-induced characteristic emission from solid targets. The EUV tube is debris-free, has excellent long-term temporal and spatial stability, and very low running costs. All source parameters are computer-controlled and the source size can be adjusted down to 10 μm . Recent improvements on EUV power scaling will be presented. Different applications in the field of at-wavelength metrology will be highlighted. New results on EUV reflectometry of multilayer mirrors and grazing incidence optics will be demonstrated and compared with measurements obtained at synchrotron facilities and with plasma-based sources.