



1. Title:	Precise and Compact EUV Reflectometer
2. Full names of all authors:	Ulf Hinze*, Max-Christian Schürmann**, Boris N. Chichkov*

3. Abstract body:

A precise and compact EUV-reflectometer is presented. The reflectometer allows to characterize the reflectivity and transmission of optical samples. The incidence angle of the EUV-radiation can be varied from grazing incidence to nearly normal incidence.

The reflectivity measurements of this reflectometer were compared with a calibrated synchrotron measurement at the German national metrology institute (PTB). The absolute accuracy of the reflectivity measurement was found to be better than 3% for any incidence angle. The reproducibility of the measurement was found to be better than 0.5%. Investigations are performed to further improve the reproducibility.

As an EUV-source an electron-based microfocus EUV-tube is used. This EUV source is debris-free, and it provides a typical output of 30 μW at 13.5 nm. The reflectometer benefits from the very good long-time stability and spatial stability of this tube.

The reflectometer setup is flexible, thus it can be fit to different types of measurement for different applications. The concept of the reflectometer is discussed and recent results are presented.