

An XUV At-Wavelength Metrology facility at BESSY-II

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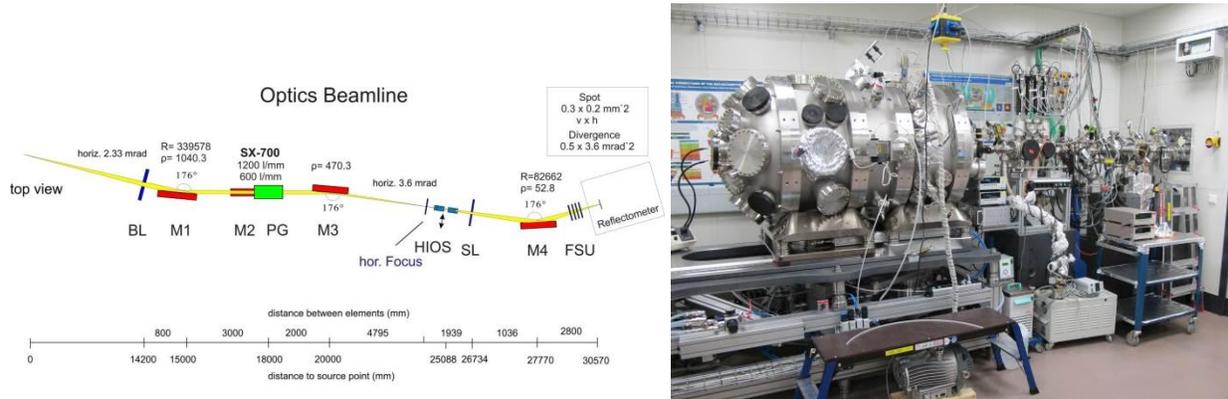
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A technology centre for production of high precision blazed-gratings was established at BESSY-II in Berlin. Within this project a new Optics Beamline and a versatile Reflectometer has been set up for at-wavelength characterization and calibration of the in-house produced gratings and novel nano-optical devices as well as mirrors, multilayered systems etc.

The collimated Plane Grating Monochromator (c-PGM) beamline is placed at a BESSY-II bending magnet section. According to its purpose, this beamline has specific features, such as: very high spectral purity, provided by two independent high order suppression systems - HiOS (a four-mirror arrangement of different coatings which can be inserted into the beam at different angles) and a filter and slit unit (FSU) (with 12 absorber filters of different thickness and materials), an advanced system for suppression of stray light and scattered radiation and a broad energy range between 10 eV and 2000 eV.

The new 4-circle and 6-axes Reflectometer is able to incorporate real life-sized gratings. The samples are adjustable within six degrees of freedom by a newly developed UHV-tripod system carrying a load up to 4 kg. The reflectivity can be measured between 0 and 90 degrees incidence angle for both s- and p-polarization geometry. A variety of detectors will provide an extended dynamic range and different angular resolution.

This novel powerful metrology facility has gone into operation recently and is now open for users. First results on optical performance and measurements on multilayer grating and will be presented at the conference.



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References

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