

## VLS flat field spectrometer for extreme ultraviolet radiation. Design and analysis for LIXS

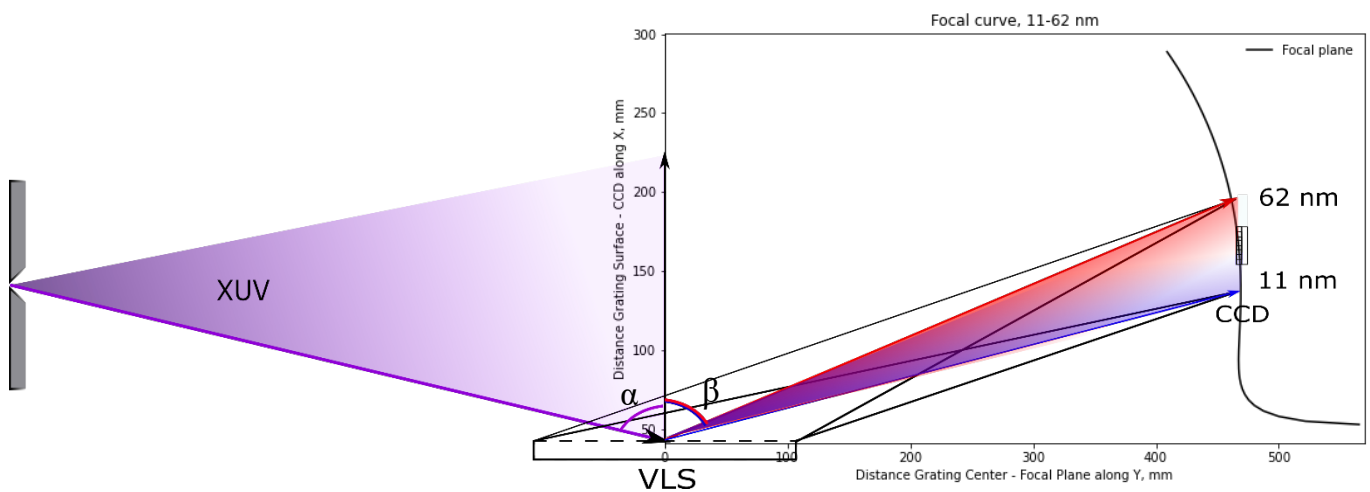
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Extreme ultraviolet (XUV) spectrometer is a crucial instrument for characterization of plasma and XUV spectroscopy. The flat-field XUV spectrometer with a variable-line-spacing (VLS) grating is able to focus the light onto a flat image plan, which is beneficial for the CCD camera.<sup>1</sup> An XUV spectrometer for the 11 to 62 nm is essential to detect a wide range of XUV emission. According to the specification of the grating, the distance between grating center and focal plane is 469 mm and the flat image plane is 110 mm. Due to the limitation of the CCD chip size (27.5  $\mu\text{m}$ ) and bellow statics, two construction methods are proposed: scanning the spectrum with a CCD moving along the focal plane and shifting the focal plane along the CCD chip surface. Thus, there is great interest in the total system error of these two methods. It can be estimated by using mathematical modeling, based on the initial distribution of the source radiation and the geometry of the optical system.



[1] Qu D., Bleiner D., *J. Anal. Atom. Spectrom.* 2020, 35(9), 2011-2022.