

Materials Day
Abstract Guide
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Grating nanofabrication for future space telescopes

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Abstract: Custom, large-format astronomical gratings are needed for future NASA observatories. Their design requires (nano-)fabrication methods that are becoming increasingly complex. Amongst the many challenges, aberration-control for future ultraviolet (UV) gratings requires the need to patterning curved grooves on flat substrates or to move altogether onto patterning gratings on curved substrates. This presents many issues for the electron-beam lithography, but also leads to further difficulties when it comes to etching the pattern as many of these gratings also need to be blazed. We present some recent developments made in the Nanofabrication Laboratory at Penn State University that are geared towards solving these issues.