

DESIGNING SINGLE-BOUNCE MONOCAPILLARY X-RAY OPTICS

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In this poster we show how a potential monicapillary user easily makes an elliptically-shaped monicapillary design to best fit their x-ray microbeam experimental requirements. There are four major parameters that need to be specified by the user of an X-ray microbeam optic, they are the spot size on the sample, gain, divergence, and the focal length, or working distance of the optic. With the glass puller that we now have, there are wide varieties of elliptical shapes that we have pulled and we are capable of pulling. We present some of the standard and not so standard optical shapes that we have tried and the performance data to go with that shape. Most of the more interesting designs are from synchrotron users needs on beamlines at CHESS, Hasylab (and now starting at APS). We can help you determine if a monicapillary would be beneficial for a particular application. Our design program is on-line at <http://glasscalc.chess.cornell.edu/ImageProf.html>. We will address questions such as what are the monicapillaries strengths and weaknesses in work conducted with micro X-ray beams as well as calculate the expected flux gain, beamsizes and divergence expected given the synchrotron source size parameters and the distance to the capillary.