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Design and performance of a compact, versatile crystal bender for sagittal focusing of x-ray beams

David L. Adler

University of Illinois, Urbana-Champaign, Materials Research Laboratory, Bldg. 510E, Brookhaven National Laboratory, Upton, NY 11973

A focusing element which can be added to new and existing x-ray monochromators is described. The bender is used to focus 4 mrad of light into a 300 micron spot (4:1 demagnification). The focus is dynamically adjusted over the energy range 2.1 to 25 keV. This device is a working part of beamline X16C at the NSLS, and is routinely used to collect surface diffraction, DAFS and EXAFS data. Suggestions for its use in other beamlines, including insertion device lines at the APS, will be discussed.