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8.17 Measurement and modeling of bent and flat KAP (001) reflectivity

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Measurements were performed on bending magnet beam line 9.3.1 at the Advanced Light Source (Lawrence Berkeley National Laboratory, Berkeley, CA, USA) over the energy range of approximately 2.5 to 8 keV. A dual goniometer endstation was used to measure crystal diffraction properties for the potassium acid phthalate (KAP). The measurement results are subsequently compared to a crystal reflectivity model consisting of theoretical rocking curves calculated using XOP software (a multi-lamellar model for the bent crystals) coupled with a calculation of x-ray beam divergence based on the geometry of the measurement apparatus. We find generally good agreement between the measurements and the model. This work was done by National Security Technologies, LLC, under Contract No. DE-AC52-06NA25946, and by Mission Support and Test Services, LLC, under Contract No. DE-NA0003624, with the U.S. Department of Energy. DOE/NV/03624--0020.

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