

High-Energy X-Ray Optics at the Advanced Photon Source

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Due to its high electron beam energy (7 GeV) and small source size/divergence, the Advanced Photon Source (APS) is a brilliant source of high-energy x-rays (50 - 150 keV), which are often the scattering probe of choice for various types of investigations in materials and condensed matter systems. The APS beamline 1-ID is dedicated to this photon energy range in regard to research applications and beam-delivering optics. The high-energy x-ray optics at 1-ID and its performance will be presented, including monochromatization (using bent and flat crystals), refractive lenses (for focusing and collimation), brilliance preservation, stability issues, selected applications, and ongoing development.

Optics upgrades at other APS high-energy beamlines will also be discussed.

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