Vibration-Damping Structure Design for an X-Ray Microprobe Supporting System

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Focusing of 8 keV x-rays to a spot size of 150 and 90 nm full width at half maximum has been demonstrated at the first- and third-order foci, respectively, of a phase zone plate at the APS 2-ID-D x-ray microprobe experimental station [1]. In order to perform an x-ray microprobe experiment with such a high spatial resolution, vibration control of the x-ray microprobe supporting system becomes a critical issue.

Recently, we have designed and constructed a vibration-damping structure for the APS 2-ID-D x-ray microprobe experimental station. In this paper, the vibration-damping structure design, as well as the vibration test results for the x-ray microprobe supporting system are presented.

This is an essential improvement toward routine operation of the microprobe at sub-100-nm spatial resolution.

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References


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