Abstract Submitted
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Hard X-ray Nanoprobe Development at Argonne National Laboratory[1] ROBERT WINARSKI, MARTIN HOLT, JORG MASER, VOLKER ROSE, DEMING SHU, BRIAN STEPHENSON, Argonne National Laboratory, CENTER FOR NANOSCALE MATERIALS / ADVANCED PHOTON SOURCE COLLABORATION — The Hard X-ray Nanoprobe beamline will explore nanoscale objects at a spatial resolution of 30 nanometers, using x-ray fluorescence spectroscopy, transmission imaging, diffraction, and scattering. X-ray fluorescence measurements will provide element-specific imaging of individual nanoparticles inside of samples. Transmission imaging will allow three dimensional mappings of thick specimens and devices. X-ray diffraction and scattering capabilities will examine strain states and ordering in nanoscale systems. The beamline is designed for two modes of operation: a scanning probe mode, where the spatially coherent fraction of the x-ray beam is focused by high-resolution x-ray optics onto a small area of a sample, and a full-field transmission mode, where the full, partially coherent x-ray beam is used to illuminate a sample for transmission imaging at high resolution.

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