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Three dimensional visualization of nanoscale structure: High contrast X-ray nanotomographic imaging at Pohang Light Source II

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The synchrotron-based hard X-ray nanotomography beamline, named X-ray Nano Imaging (XNI), has been established since 2011 at sector 7C of Pohang Light Source-II (PLS-II).

The XNI beamline was constructed primarily as a full-field X-ray microscopy for the inner structures study of biology and material science. Normal operation mode provides 46 nm resolution for still images and 100 nm resolution for tomographic images, with a 40 μm field of view using objective zone plate which has 50nm outer most zone width. Additionally, for large-scale application, it is capable of a 110 μm field of view with an intermediate resolution.

Currently 7C XNI upgrade is scheduled to deliver high flux X-rays to transmission X-ray microscopy (TXM) system for cutting edge science and industrial application with three dimensional visualization. In this talk, we present current application and upgrade status including optics design, key instruments and extended applications.

Keywords

TXM, tomography, nano imaging, Hard X-ray, PLS-II

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