

## **A setup for full-field soft x-ray microscopy at the Pohang Light Source**

G. B. Kim<sup>1</sup>, H. J. Shin<sup>1,2</sup>, C. K. Hong<sup>1</sup>, C. C. Hwang<sup>2</sup>, J. G. Kim<sup>3</sup>, K. W. Kim<sup>4</sup>,  
K. S. Choi<sup>4</sup>, K. H. Yoon<sup>4</sup>, and D. E. Kim<sup>1</sup>

<sup>1</sup> *Department of Physics, Pohang University of Science and Technology (POSTECH), Pohang, 790-784, Korea*

<sup>2</sup> *Pohang Accelerator Laboratory, POSTECH, Pohang, 790-784, Korea*

<sup>3</sup> *Vacuum & Measurement Technology, Pohang, 790-320, Korea*

<sup>4</sup> *X-ray Microscopy Research Center, Wonkwang University, Iksan, 570-749, Korea*

A test setup for full-field soft-x-ray microscopy has been installed at the Pohang Light Source. The setup has a condenser and an objective zone plates as focusing optics. The outermost zone width of the objective zone plate is 40 nm and the diameter of the condenser zone plate is 2 mm. The zone plates and a sample holder are inside a vacuum chamber and a soft x-ray CCD is used as a detector. The setup has been tested at the 8A1 U7 undulator radiation beam line that has refocusing mirrors with variable radii of curvatures. The test image on 2000 mesh shows a diffraction-limited space resolution; the space-resolution is 50 nm at the photon energy of about 400 eV. The setup has been also tested at the 7B1 bending magnet beam line. In this report, we will present the performance of the setup and some application images obtained at both beam lines.