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The Advanced Light Source moves towards top-off and operates new beam lines and experimental facilities

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https://escholarship.org/uc/item/4300k9j2

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Publication Date
2008-06-10
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With the Advanced Light Source upgrade to top-off operation during this calendar year, the brightness of the source and hence the coherent soft X-ray flux will increase by an order of magnitude or more.

With a dedicated elliptically polarizing undulator, and optimized beam line designs, we plan to dramatically increase the capabilities available at the ALS for diffraction microscopy and x-ray photon correlation studies. Construction of a facility, named COSMIC, has been designated top priority in the ALS Strategic Plan. At the same time a new beam line for microscopic electronic structure studies (MAESTRO) is planned to open up the possibility of nano-scale angle resolved photoemission.

While these, and other, development projects are pursued we are bringing several important new experimental facilities into full operation for the user community. PEEM-3 is now operational on an elliptically polarizing undulator at beam line 11.0.1. Our ultra fast x-ray facility at beam lines 6.0.1 and 6.0.2 is operational for the hard x-ray and soft x-ray programs using laser slicing. MERLIN is being installed at beam line 4.0.3 for ultra high resolution studies of strongly correlated electronic systems. A new soft x-ray microscope operates as the National Center for X-ray Tomography. Micro-diffraction is now operational at beam line 12.3.2 with expanded energy range using a superconducting bend magnet source. A new facility for SAXS/WAXS is operational at beam line 7.3.3.

This combination of machine, insertion device, beam line, and end station upgrades will support the ALS scientific program for many years to come.

This work was supported by the U.S. Department of Energy under contract number DE- AC02-05CH11231.

Abstract submitted to the Fifteenth Pan-American Synchrotron Radiation Conference, Saskatoon, Saskatchewan, Canada
June 10 – 13, 2008