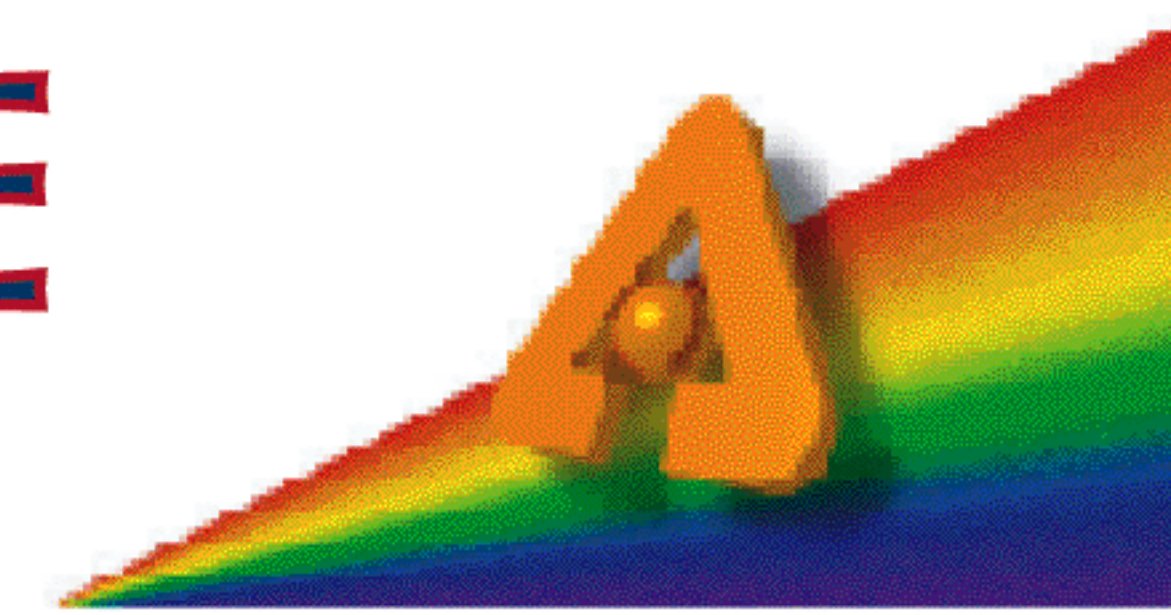


The U.S. DEPARTMENT OF ENERGY'S ADVANCED PHOTON SOURCE ARGONNE NATIONAL LABORATORY



Our door is open to experimenters from all scientific disciplines, whose research can use the high-brilliance x-ray beams from the Advanced Photon Source (APS).

General-user proposals for beam time during Run 2004-3 (October-December 2004) are due by Friday, July 16, 2004. Information on access to beam time at the APS can be found on the Web at:

http://www.aps.anl.gov/user/beamtime/get_beam.html

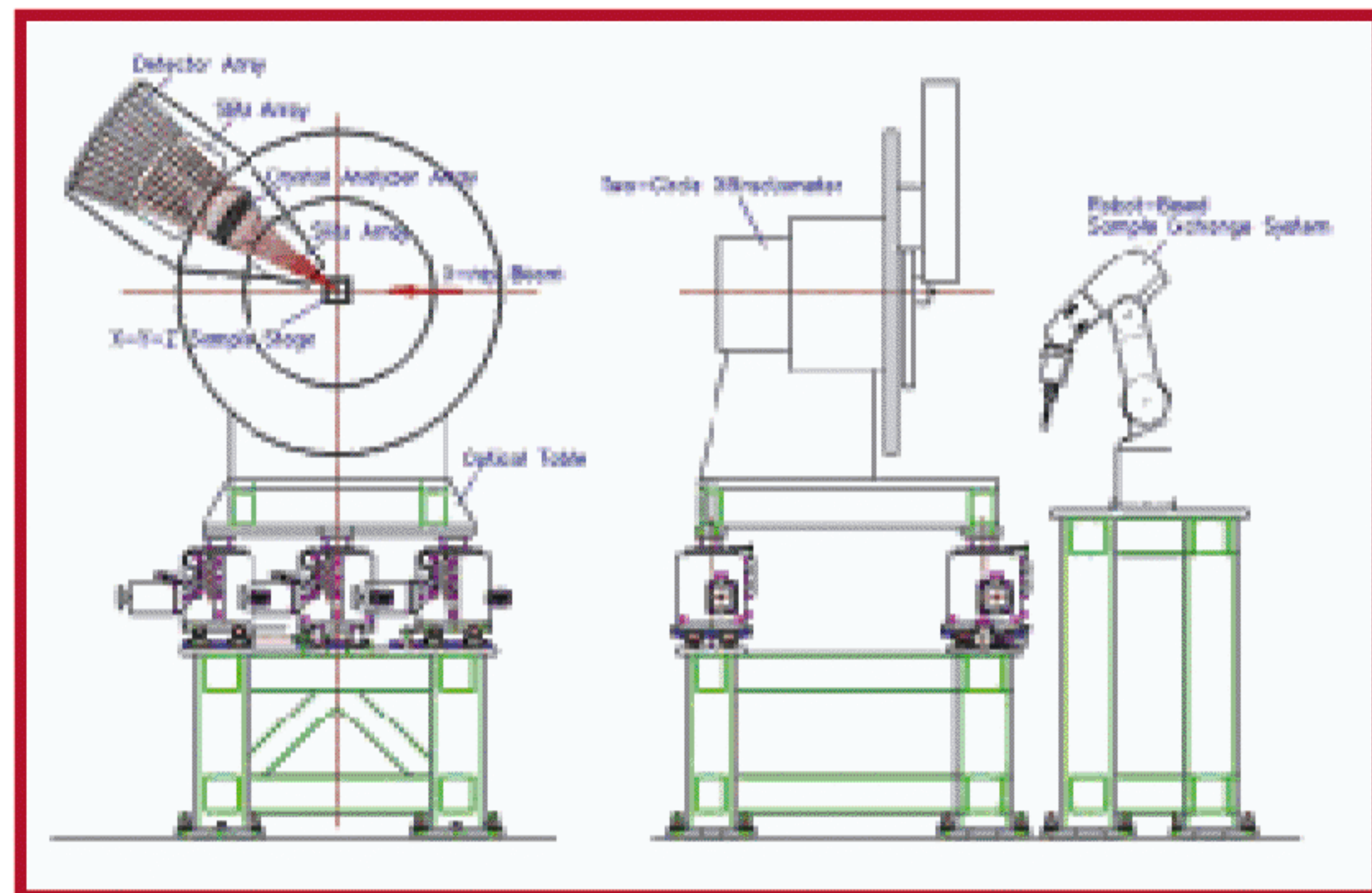
or by contacting Dr. Dennis Mills, DMM@aps.anl.gov, 630/252-5680.

Information on research techniques and beamline capabilities at the APS can be found on the Web at:

http://www.aps.anl.gov/user/beamtime/get_beam.html



Dedicated APS Powder Diffraction Beamline Funded by DOE-BES



Schematic of the powder diffractometer setup.

A new high-resolution powder diffractometer beamline is being funded by the U.S. Department of Energy's Office of Basic Energy Sciences (DOE-BES) for construction at APS sector 11-BM. The beamline proposal and subsequent funding arise from the department's general call for new instrumentation at x-ray and neutron facilities. This state-of-the-art, dedicated powder instrument will be a part of the APS facility beamlines that provide a majority of beam time (80%) for general users. The result of this construction project will be a user-friendly, high-resolution, high-throughput instrument for the powder diffraction user community, positioned to initiate leading structural science of importance to fields ranging from condensed matter physics and materials chemistry to the pharmaceutical and biological sciences.

Definitive knowledge of the crystal structure of a material (inorganic, organic, or biological) is the gateway to understanding its physical properties, its chemical reactivity, and/or its biological functionality. The increasingly complex chemistry and physics of modern materials demand that this structural information be obtained in a routine fashion and with the precision afforded by powder diffraction.

Nanoprobe Beamline and IXS Sign MOUs with APS

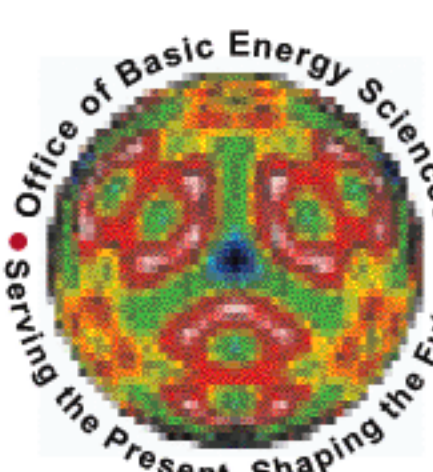
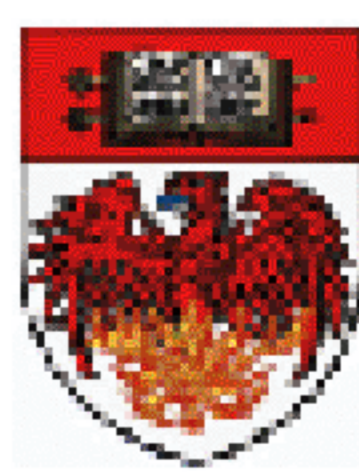
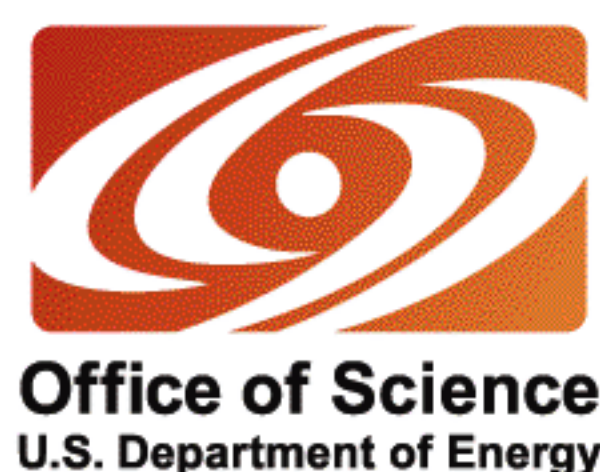
The Inelastic X-ray Scattering Collaborative Development Team (IXS-CDT) and the Nanoprobe beamline CDT at the Argonne Center for Nanoscale Materials (CNM) are the 22nd and 23rd research groups to sign Memorandums of Understanding for construction of x-ray beamlines at the APS.

The IXS sector (APS sector 30) aims to be an outstanding resource for inelastic x-ray scattering, a crucial application that takes full advantage of the brilliance from third-generation synchrotrons such as the APS. Funded jointly by the National Science Foundation, DOE-BES, and university matching funds, IXS will have two specialized spectrometers: HERIX, a high-resolution, inelastic x-ray scattering instrument for studies of lattice vibrations, and MERIX, a medium-resolution, inelastic x-ray spectrometer for electronic excitation measurements.

The Nanoprobe beamline (APS sector 26) is the centerpiece of the x-ray characterization facilities at the CNM, one of the DOE's five Nanoscale Science Research Centers being constructed at national laboratories. The CNM at Argonne is a \$72 M federal/State-of-Illinois partnership for designing, synthesizing, fabricating, and characterizing materials at the nanoscale. The CNM user facility will provide the scientific community with a broad complement of tools, including the x-ray Nanoprobe beamline, as well as other advanced nanocharacterization and state-of-the-art nanolithography and synthesis tools. CNM users will be equipped to explore problems in nanophotonics, nanomagnetism, bioinorganic interfaces, nanocarbon, and complex oxides. The hard x-ray Nanoprobe beamline is the CNM's premier nanocharacterization tool, designed to afford capabilities for fluorescence, diffraction, and transmission imaging at a spatial resolution of 30 nm or better. It is expected to advance the state of the art by providing the highest spatial-resolution hard x-ray beamline in the world. Funding for the Nanoprobe beamline is provided by DOE-BES as part of the CNM's equipment budget.

The 2004 Users Meeting for the Advanced Photon Source will be held May 3-6, 2004, at Argonne National Laboratory, Argonne, IL, U.S.A.

Visit the meeting Web page at <http://www.aps.anl.gov/conferences/2004um/> where information on workshops and other meeting activities will be posted as it becomes available.



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a U.S. Department of Energy Office of Science laboratory,
is operated by The University of Chicago.**

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