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NEWS & EVENTS

New Development Increases Synchrotron Capacity

By [Emily Carlson](#)

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With just a handful of large-scale synchrotrons worldwide, researchers who use these facilities to study the structures of biological molecules can wait months for a time slot on a synchrotron X-ray beamline. But now it may be possible to increase the number of beamlines in this scarce research real estate.

A group of scientists and engineers working at Argonne National Laboratory's Advanced Photon Source (APS)—the most intense X-ray source in the Western Hemisphere—has turned one of the facility's 34 "straight sections" (where light is produced) into two X-ray beamlines just as intense as the single beamline in the original design. The development, supported by the National Institute of General Medical Sciences and the National Cancer Institute in partnership with the Department of Energy, has the potential to double the research capacity of each straight section.

The design takes advantage of the available space and current technology developed by the APS to create two X-ray beams in the space designed for one. The researchers said the concept can be incorporated into existing synchrotron facilities elsewhere, significantly increasing access to a very valuable resource without the construction of additional synchrotrons. Other research groups at APS are considering implementing this technique to expand their experimental capabilities.

For more information about the APS, please visit <http://www.aps.anl.gov>. Additional information about the collaborative project is available at <http://www.nigms.nih.gov/news/releases/beamline.html> and <http://www.gmca.aps.anl.gov/home.shtml>.



The Advanced Photon Source at Argonne National Laboratory produces the most brilliant X-rays in the Western Hemisphere. The X-ray beams are used in many fields of study, from research into new materials to drug design. Argonne National Laboratory photo.

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