

Science program resumes at DESY's high brilliance X-ray light source

April 28 2015



The large experimental hall "Max von Laue" at PETRA III. Credit: DESY

Following a year long shutdown, the science program at DESY's high

brilliance X-ray source PETRA III has been resumed on Monday. "With the shutdown we have cleared the way for a substantial expansion of the number of measuring stations at our much requested X-ray source," says DESY research director Prof. Edgar Weckert. "We are pleased that we can now re-open the facility to scientists from all over the world."

PETRA III produces bright X-rays with the help of high-energy electrons from a particle accelerator. Around 2000 researchers use this X-ray light every year, to study new drug substances, new materials or chemical processes. The brilliant X-rays are up to 5000 times finer than a human hair. This way, extremely small samples can be investigated, such as tiny protein crystals for example or nanocrystals for the computer storage of the future. "PETRA III provides unique insights into the nanoworld," says Prof. Christian Schroer, the facility's scientific director.

Beam time at PETRA III is much sought after by scientists from around the world. The available measurement time is regularly completely overbooked, only a fraction of the experiment requests can be granted. In the future, two new experimental halls will allow more researchers to access the brilliant X-ray source. While the research program was resumed on 27 April at the 14 existing stations, the two new experimental halls will gradually be equipped with up to 11 other stations. The focus of the experiments there will be the study of the properties of [new materials](#).

For the construction of the two new halls the tunnel of the PETRA III [storage ring](#) had to be torn down completely in two sections for about 80 metres each. In these sections, the storage ring was rebuilt from new components after the foundations for the new experimental halls had been finished. With the rebuilding the storage ring was prepared to provide the new experimental stations with the bright X-ray light. Research work in the new experimental halls will begin in about a year.

Provided by Deutsches Elektronen-Synchrotron

Citation: Science program resumes at DESY's high brilliance X-ray light source (2015, April 28)
retrieved 26 April 2024 from

<https://phys.org/news/2015-04-science-resumes-desy-high-brilliance.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.