

BRILLIANT RING.

PETRA III takes up research operation at DESY

DESY's new 3rd generation storage ring, PETRA III, took up dedicated user operation mid 2010. Fed by the world's lowest emittance storage ring the undulator beamlines offer scientists outstanding experimental opportunities with X-rays of an exceptionally high brilliance. In particular, this benefits researchers investigating very small samples or those requiring tightly collimated and very short-wavelength X-rays for their experiments.

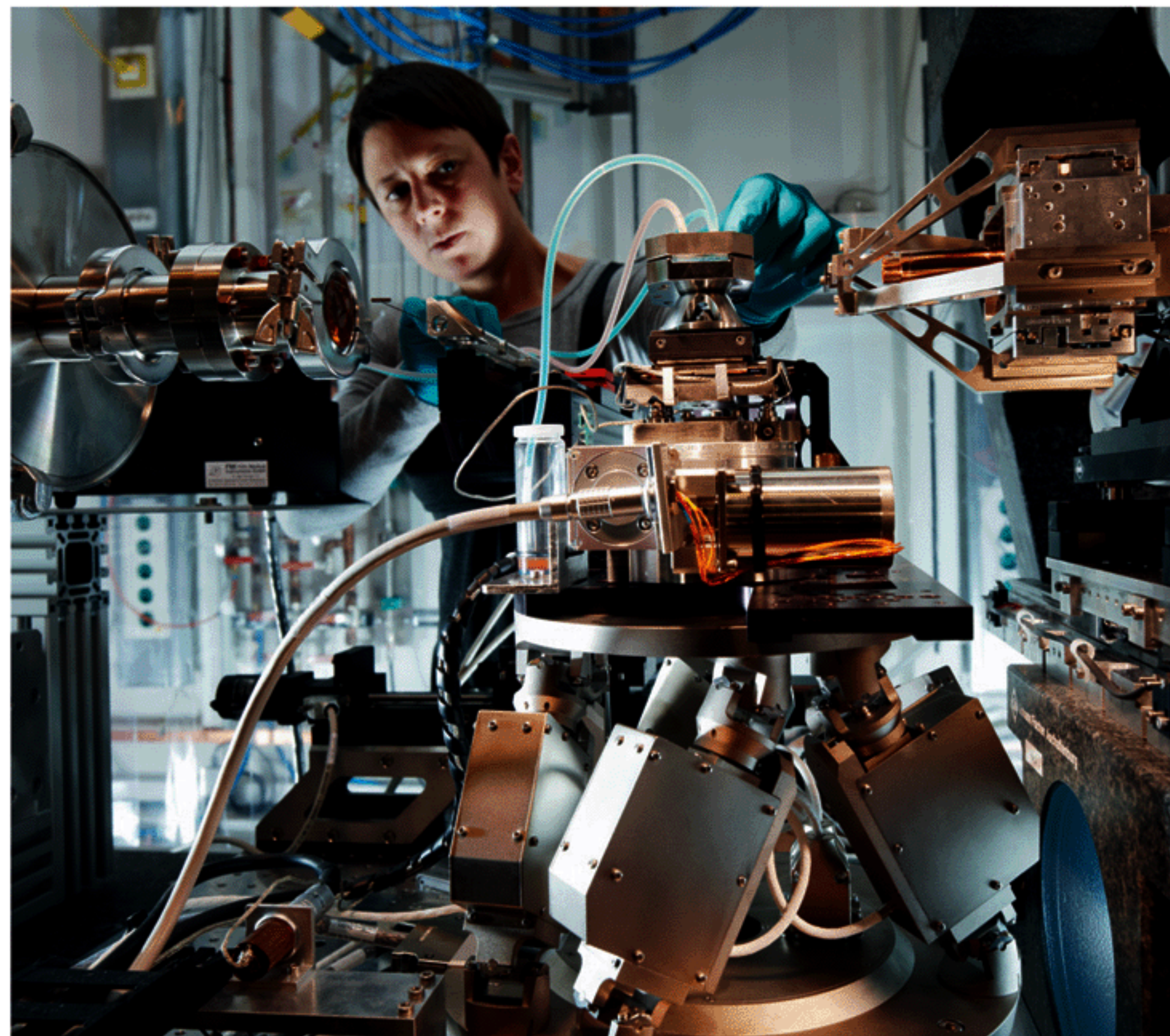
In the last three years, starting July 2007, DESY converted the PETRA ring into one of the world's best storage-ring-based X-ray radiation source. To achieve this, nearly 300 metres of the 2.3-kilometre-long ring accelerator were completely rebuilt and a new experimental hall was constructed.

Currently three beamlines are in user operation. Five more welcome friendly users for first test experiment and will take up regular user operation during this year. PETRA III will feature 14 undulator beamlines with about 30 experimental stations. Most of this phase I experiments target for focal spot sizes in the μm or even sub - 100 nm range. The detailed design work for an extension of PETRA III by another 12 beamlines is already in progress. Construction work is expected to start in 2013.

Deadlines for the submission of research proposals (PETRA III and DORIS III) are: 1 March and 1 September.

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Aligning a microfluidic experiment at beamline P03 of PETRA III. (Photo: Heiner Mueller-Elsner, Agentur-Focus.de)

PETRA III – Facts and figures

- > Storage ring for electrons and positrons
- > Length: 2304 metres
- > Energy 6 GeV
- > Operation: top-up mode (100 mA)
- > Natural emittance: 1.0 nm rad
- > X-ray brilliance: up to 10^{21} 1/mm²mrad²0.1%BWs
- > 14 beamlines with up to 30 experimental stations
- > Start of user operation: August 2010

