



Shanghai Photon Science

Facility Cluster

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Shanghai Photon Science Facility Cluster, which consists of the Shanghai Synchrotron Radiation Facility (SSRF), Shanghai Soft X-Ray Free-Electron Laser Facility (SXFEL) and Shanghai High repetition rate XFEL and Extreme light facility (SHINE), aims to support cutting-edge scientific research and innovation in China.

SSRF is a 3.5GeV third generation synchrotron light source. Since commencing operation in May 2009, the SSRF has provided bright x-ray beams to more than 40,000 users from universities, institutes, hospitals and high-tech companies. Over 4,500 publications have been generated based on the experiments conducted at the SSRF. It is committed to continuing to expand its capacity and contributing to cutting edge research.

SXFEL is the first coherent X-ray light source in China, and its output wavelength ranges from 2 to 10 nm. This free-electron laser (FEL) facility is based on a 0.84 GeV linear accelerator, and its main goal is to develop FEL related technologies and test new FEL schemes. The test facility (phase-I) has already passed the national acceptance in November 2020. The user facility (phase-II) is under commissioning, expecting to serve users in 2021.

SHINE, an 8 GeV linear accelerator based X-ray FEL, is currently under construction. SHINE will operate in 2025 and generate coherent X-rays in a uniformly-spaced train of pulses up to 1 MHz, with tunable photon energies from 0.4 to 25 keV, enabling new opportunities for researchers across a wide spectrum of scientific inquiry.