

Experimental Capabilities at BESSY II

The BESSY II synchrotron radiation source is a 3rd-generation 1.7 GeV storage ring with high average brilliance serving an international user community with about 2,800 user visits per year. BESSY II beamlines focus to the VUV and soft-X-ray photon range. The beamlines are operated by HZB as well as in cooperation with strategic partners. The source and the instrument suite are very versatile and deliver photons at a high average brilliance. BESSY II provides high energy (\sim meV), spatial (10 nm) as well as temporal (sub-picosecond) resolution and full polarization control at repetition rates of up to 500 MHz. At dedicated beamlines access to very low (<0.01 eV) and high (>10 keV) photon energies permits special experiments, some beamlines are optimized for THz or single-bunch operation. Based on a longstanding experience in the design and development of undulators and optical beamline components, BESSY II was able to develop tailor made beamline solutions for specific experimental requirements. For dynamic spectroscopy the transmission could be improved by up to a factor of 5 using a novel zone plate monochromator design. For EMIL, the Energy Materials In-situ Laboratory, a novel beamline design was developed to cover the energy range from soft to hard X-rays.
