

NewSUBARU

A 1.5 GeV synchrotron radiation ring named NewSUBARU is the main facility of the Laboratory of Advanced Science and Technology for Industry (LASTI) at the University of Hyogo. NewSUBARU is at the site of SPring-8 and can provide light beams from IR to soft X-ray. We have achieved storing 500 mA at 1 GeV and 200 mA at 1.5 GeV. At present, NewSUBARU has six bending section beamlines (BL-2, BL-3, BL-5, BL-6, BL-10, and BL-11), a short undulator beamline (BL-7), a long undulator beamline (BL-9), and an optical-klystron beamline (BL-1), as shown in Fig. 1.

Topics of the NewSUBARU research activities for this year are as follows. First is the basic characteristic research of NewSUBARU electron storage ring and gamma ray generation by laser Compton backscattering. The second is extreme ultraviolet (EUV) activities involving a microscope, using EUV beam splitters, pattern replications using EUV interference lithography, and the development of EUV resist with low line edge roughness (LER). Beamline BL09C was branched from beamline BL09B for use in EUV interference lithography for the evaluation of the exposure characteristics of EUV resist. Third is micro- and nanodevices such as high-density cell culture using micro 3D scaffold and X-ray grating for X-ray phase grating. Fourth is on the characterization of various materials such as DLC, Au-SrTiO₃, Zn-Al alloys, and TiO₂. Furthermore, the performance of the material analysis beamline BL5 for industrial purpose was evaluated by NEXAFS spectra measurements using the standard samples of graphite and BN.

Most of our research activities are conducted in collaboration with industries, government research institutes, and other universities. We will continue to respond to the community's demand by offering new science and technologies.

Shinji Matsui

Director of LASTI, University of Hyogo

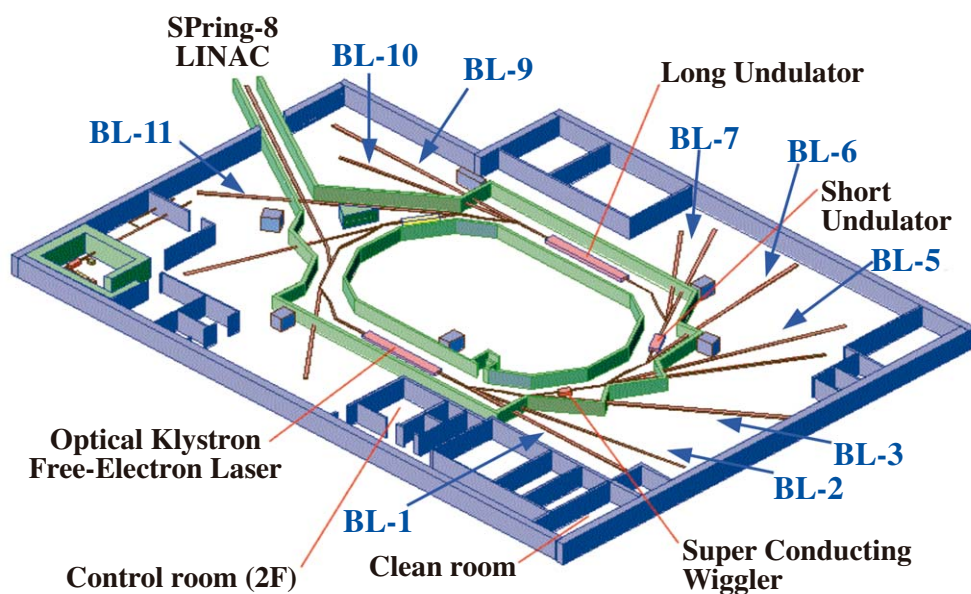


Fig. 1. Beamline arrangement in NewSUBARU.