

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 campus 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 (BL2, BL3, BL5, BL6, BL10, and BL11), a short undulator beamline (BL7), a long undulator beamline (BL9), and an optical-klystron beamline (BL1), as shown in Fig. 1.

Topics of the NewSUBARU research activities in this year are as follows. The first is the basic characteristic research of the NewSUBARU electron storage ring and photonuclear reaction with laser Compton scattering γ -ray. The second is extreme ultraviolet (EUV) activities that include mask observation using a coherent EUV scattering microscope, nanostructure pattern replication using an EUV interference lithography system, and the development of *in situ* contamination measurement in the EUV resist outgassing environment. BL9C beamline was branched from BL9B beamline for use of EUV interference lithography for the evaluation of the exposure characteristics of EUV resist. The third concerns micro- and nanodevices, such as a three-dimensional lab-on-CD and an X-ray grating for the X-ray Talbot interferometer. The fourth is on the materials science of various materials such as Si-containing DLC, BN and GaN. Furthermore, the performance of the material analysis beamline BL5 for industrial purposes was evaluated by NEXAFS spectra measurements using the standard samples of h-BN, CaF₂, and Ni.

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

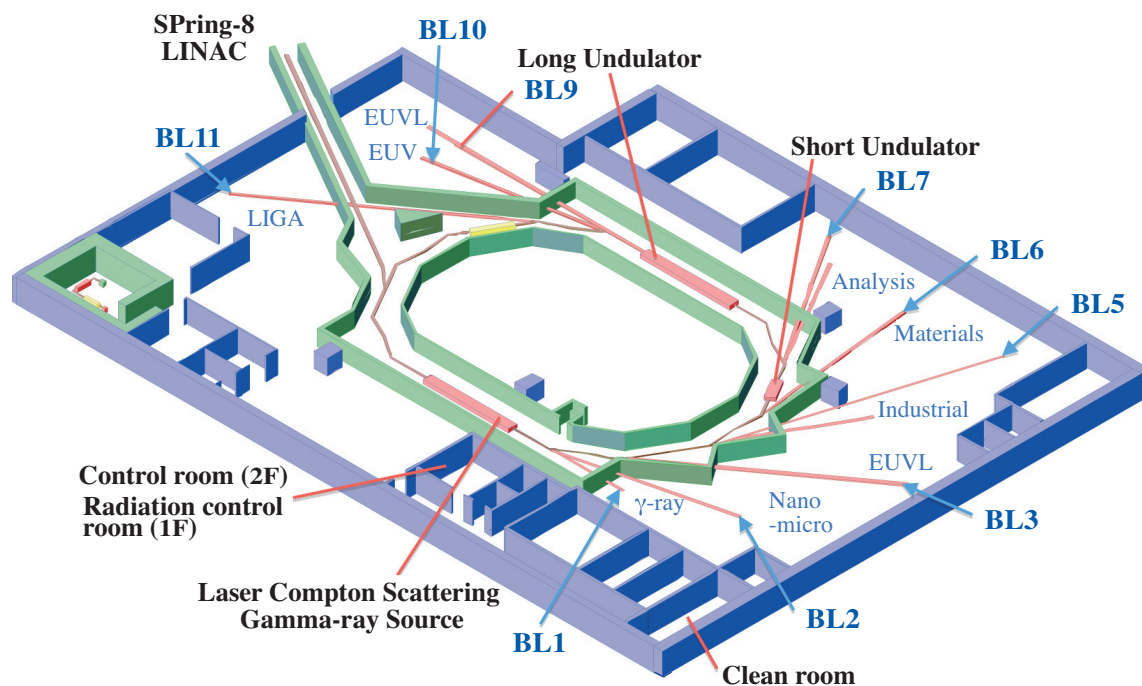


Fig. 1. Beamline arrangement in NewSUBARU.