NewSUBARU

The 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-rays. We have achieved storing 500 mA at 1 GeV and 200 mA at 1.5 GeV. At present, NewSUBARU has six bending section beamlines (i.e., BL-2, BL-3, BL-5, BL6, 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.

The topics of the NewSUBARU research activities of this year are as follows. First is the basic characteristic research of NewSUBARU electron storage ring and imaging with laser Compton scattering gamma rays. Second is EUV (extreme ultraviolet) activities that include the mask observation using a coherent EUV scattering microscope, nanostructure pattern replication using a newly developed EUV interference lithography system, and the development of new EUV resists with a low LER (line edge roughness). BL-9C branched from BL-9B for use in EUV interference lithography for the evaluation of the exposure characteristics of EUV resists. Third is micro- and nano-devices such as a high-aspect ratio microcoils, three-dimensional lab-on-CDs and X-ray gratings for X-ray Talbot interferometer. Fourth is the materials science of various materials such as hydrogenated DLC, a-C:H and BN.

Furthermore, the performance of the material analysis beamline BL-5 for industrial enterprises was evaluated by NEXAFS spectra measurements using standard samples of graphite, BN, LiCl and MgO.

Most of our research activities are being conducted in collaboration with industries, government research institutes and some 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

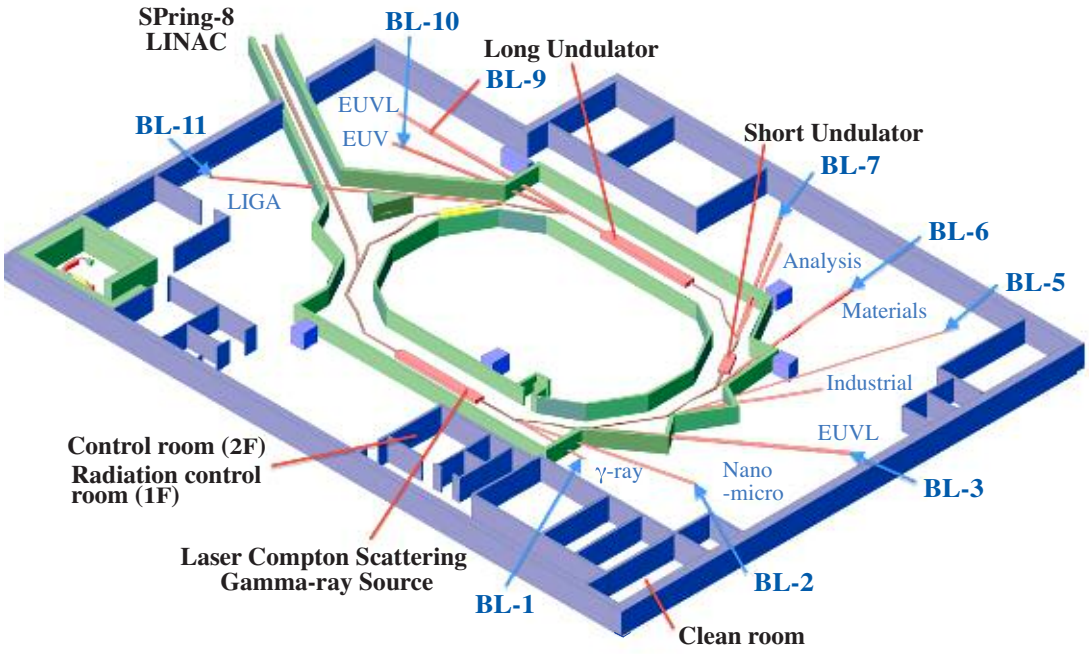

Fig. 1. Beamline arrangement in NewSUBARU.