PF and PF-AR updates

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The mission of the Photon Factory (PF) is to provide synchrotron lights to a large number of users in a variety of research fields. To do so, we need not only to maintain and improve the two storage rings and the beam lines but also to keep developing new ones. Thus it is vital for the PF to develop a strategic plan for short and medium to long terms. After many discussions within the PF, with the community, and in particular with the international review committee in 2006 followed by the PF International Science Advisory Committee, we have come to a conclusion that the strategic plan should be built as a three-tier system: (1) areas of excellence, (2) light source and beam line developments, and (3) facility operation. The creation of research centers, Structural Biology Research Center (2003) and Condensed Matter Research Center being established, constitutes the science cores of the three-tier strategic plan.

We are in the process of major refurbishment program to reorganize the beamlines and associated activities between the PF and the PF-AR rings. The strategy is to relocate activities requiring higher energy X-rays to the PF-AR, and the ones requiring VUV-SX beams to the PF, and at the same time solving the inefficiency problem of sharing the same insertion device for two vastly different energy ranges. The recent success of securing an external funding for BL16A paves the way forward. It is optimized for fast-switching circularly polarized soft X-ray beam for research on spintronics and surface reactions. BL13 and BL15 are among the other insertion device sections for upgrading. BL13 will be refurbished for research on soft condensed matters including organic thin layers. Out of the four short straight sections, two have been already equipped with short-gap in-vacuum undulators and are used for advanced studies: BL17A for protein crystallography and BL3A for condensed matter research. A new BL1A is being built for micro-focus low energy protein crystallography experiments as part of the MEXT project. We have several options to consider for BL15, the last of the four short straight section beamlines: small angle X-ray scattering, micro-beam characterization, and imaging.

Finally, we are also preparing new schemes of beamline operation including beamlines and beam time specifically designated for university graduate education as well as an establishment of an Indian Beam Line in the PF.