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Synchrotron Radiation and X-ray FEL Projects in Korea¹

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There are two on-going major projects in Pohang Accelerator Laboratory (PAL), the PLS-II light source upgrade and the construction of PAL-XFEL facility. PLS-II is a new light source upgraded from PLS(Pohang Light Source) which had been operated for 16 years from 1995 and shut down in Dec. 2010. The performance will be improved from “18.9 nm-rad, 2.5 GeV, and 200 mA” to “5.8 nm-rad, 3 GeV, and 400 mA” using three superconducting RF cavities. The old storage ring has been completely dismantled and new DBA ring has been re-installed in the same tunnel within 6 months, and is under commissioning now. The unique feature of PLS-II is the compact employment of 20 insertion-devices including 14 in-vacuum undulators. The PALXFEL is a 0.1-nm hard X-ray FEL construction project started in 2011 and to compete in 2014 with a total budget of 400 M\$. The PAL-XFEL is designed to have hard X-ray undulator lines at the end of 10-GeV linac, and a dog-leg branch line at 2.65 GeV point for a soft X-ray undulator line simultaneously and independently from hard X-ray FEL undulator line. The overview of two projects with current status is presented.

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