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Introduction to Korean Accelerator Science and Activities in Industrial Accelerators

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After 20 years of the first large-scale accelerator in Korea, the Pohang Light Source (PLS) of 2.0 GeV at POSTECH, its upgrade (PLS-II) is now under commissioning with energy of 3.0 GeV. The users' service for synchrotron radiation is scheduled in April 2012. There are five big accelerator projects in various stages of construction, namely a high-intensity proton linac of 100 MeV, the PAL-XFEL of 10-GeV, a carbon therapy cyclotron of 400 MeV/u, and rare isotope accelerators for isotope separator on-line (ISOL) and In-flight Fragmentation (IFF). There are also strong demands for industrial uses of accelerators, especially in sterilization applications. In this paper, we report the current status of accelerator projects and its science in Korea, along with a brief review of accelerator R&D going back to the early 1960s at universities.