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The New 4th Generation Synchrotron Radiation Source in Korea

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The Korea-4GSR (Korea Fourth-Generation Synchrotron Radiation) Project, initiated in July 2021, is a multi-purpose synchrotron radiation facility. Led by the Korea Basic Science Institute (KBSI), the project collaborates with the Pohang Accelerator Laboratory (PAL) as a partner institution. The facility will be situated in Ochang, Republic of Korea, an area known for its concentration of industrial companies in fields such as bio-pharmacy, battery cell manufacturing, and semiconductor production. The Korea-4GSR features an 800-meter circumference, operating at 4 GeV energy with a 400 mA current and a 62 pm·rad emittance. The main ring lattice adopts the hybrid 7 multi-bend achromat type (H7MBA) design, comprising 28 cells. The LINAC and booster/storage ring operate at frequencies of 3000 MHz and 500 MHz, respectively. Out of the 28 straight sections, 24 are reserved for insertion devices, while most of the 28 center bend magnets can accommodate beamlines. In the initial phase, 10 beamlines will be prepared, including 9 insertion device sources and 1 bending beam. Of the long beamlines, one focuses on high-energy microscopy using bending beams, while another enables nano-coherent imaging and nano-scanning microscopy with an in-vacuum undulator. By 2024, the technical designs for the accelerator, beamlines, and conventional facilities will be completed, following acceptance processes by the Project Evaluation Council and the Ministry of Science and ICT. Construction is scheduled to begin in early 2025.

I plan to submit also conference proceedings

Yes

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