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Design progress of the booster synchrotron for Siam Photon Source II

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The Siam Photon Source II (SPS-II) will be Thailand's second synchrotron light source, designed to enhance the region's scientific capabilities by providing high-energy, high-intensity synchrotron light for both academic and industrial research. The SPS-II will be situated in the Eastern Economic Corridor of Innovation (EECi) in Rayong Province. The SPS-II accelerator complex comprises three main parts: a 150 MeV injector linac, a 3 GeV synchrotron booster, and a 3 GeV electron storage ring. The booster synchrotron is specifically designed to ramp beam energy from 150 MeV to 3 GeV with a repetition rate of 2 Hz. This paper provides an update on the design of the booster synchrotron, highlighting detailed simulation studies that address the impacts of multipole field errors and misalignments. Emphasis is placed on optimizing the energy ramping process to achieve efficient and stable operation throughout the acceleration process.

Footnotes

Paper preparation format

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Region represented

Asia

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