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## Update on the FCC-ee positron source design studies

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The studies and R&D on the high-intensity positron source for the FCC-ee have been initiated for a while. The positrons are produced by a 6 GeV electron drive-beam incident on a target-converter at 200 Hz. The drive beam comes in 2 bunches spaced by 25 ns with a maximum charge of ~5 nC per bunch. Two scenarios using conventional and hybrid targets are being studied for positron production. According to the FCC CDR, the Flux Concentrator is used as the matching device for the capture system, followed by several accelerating structures embedded in the solenoidal field. Then, the positrons are further accelerated to be injected into the damping ring. Recently, the feasibility study on using a SC solenoid for the positron capture has been started, and the design based on the HTS technology is under investigation. In addition, the large aperture 2 GHz RF structures, which have been specially designed for the FCC-ee positron capture system, are used with the goal of demonstrating accepted positron yield values well beyond the values obtained with state-of-the-art positron sources. The purpose of this paper is to review the current status of the FCC-ee positron source design, highlighting the recent research into the positron production, capture system, primary acceleration, and injection into the damping ring.

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### Footnotes

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