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Title

Design Study and High-power Beam Test of the 60-MeV Linac for Femtosecond THz Radiation at the PAL

Source

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Abstract

A femtosecond (fs) terahertz (THz) linac has been constructed to generate fs-THz radiation by using the ultrashort electron beam at the Pohang Accelerator Laboratory (PAL). To generate an ultrashort electron beam with 60-MeV energy, a chicane bunch compressor has been adopted. Simulation studies have been conducted to design the linac, which consists of a photocathode RF gun, two accelerating columns, two chicanes, and quadrupole magnets. The electron beam properties have been measured. In this paper, the design study and the beam test results for the linac are presented.