

IHEP C band klystron development

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After the discovery of Higgs boson at LHC, Chinese scientists have planned to build a “Great Collider”, that is a next-generation multinational particle accelerator research facility proposed as a circular electron positron collider (CEPC) and a super proton–proton collider (SPPC). The main component of the CEPC accelerator complex is the Collider ring, which has a circumference of 100 kilometers and the CEPC Booster and Collider rings will be located on the inner side of the tunnel. The Linac is built on the ground level. It raises the electron and positron beam energy up to 30 GeV. The CEPC Linac is a type of linear accelerator that uses normal conducting RF technology and operates at two different frequencies, S-band (2860 MHz) and C-band (5720 MHz). To achieve compactness in the Linac, the baseline design also uses klystrons operating at the C-band frequency (5720 MHz). A 80 MW pulsed-power RF source is required to power four accelerating structures. Institute of High Energy Physics (IHEP) is developing high power pulsed klystron of frequency 5720 MHz having output power of 80 MW. The design of 5720 MHz (80 MW) klystron for CEPC Linac is completed and manufacture is also started.

Footnotes

Funding Agency

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