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Design of a S band high power klystron for BEPCII

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A S band high power klystron for BEPCII operating at frequency of 2856 MHz has been designed and simulated at Institute of High Energy Physics, Chinese Academy of Sciences. A thermionic electron gun have been designed. A beam current of 379 A is obtained at operating voltage of 325 kV with cathode current density of 6.6 A/cm². Then, the full 3-dimensional particle-in-cell simulation of the whole klystron in CST verified that the klystron efficiency was achieved about 40% with output power of 50 MW. In addition, the RF design of cavities for interaction region is described. So far, the mechanical design of this klystron has been completed and the fabrication is in progress.

Funding Agency

Footnotes

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Yes

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