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Design and development of array multipoint accelerator tube

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Linear accelerators with multiple ray sources are widely used in detection imaging technology. An S-band multi-point light source standing wave Linac is designed and developed in this paper. The tube consists of 7 parallel-arranged acceleration cavity units, and adopts a power source to output 7 X-ray beams alternating from different positions. The accelerating tube operates at S-band 2998 MHz. In this paper, the physical design of the accelerating tube is introduced, and the dynamic design of the accelerating tube is completed by numerical calculation. PARMELA is used to verify the calculation, and the result is in accord with the expected result. According to the theoretical design results, machining and testing have been carried out.

Footnotes

Funding Agency

Paper preparation format

Region represented

Asia

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