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Design and simulation of a microwave free electron laser based on a low-energy Dynamitron electrostatic accelerator

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Abstract

In this paper, the possibility of constructing a free electron laser based on the electron beam from a Dynamitron accelerator manufactured by the Atomic Energy Organization of Iran has been studied. This study is conducted through theoretical analysis and computer simulation. The results show that if this accelerator is upgraded to deliver, at the same energy, an output current of at least 1 A, it can be used as the electron source of an oscillator-type free electron laser with an output of the order of 1 kW in the microwave region.

Keywords: Free electron laser, Electrostatic accelerator, Dynamitron.

For full article, refer to the Persian section