

16

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Title:Design and numerical simulations of a high power 0.15 THz oscillator

Authors:Li, Xiaoze (1); Wang, Jianguo (1); Song, Zhiming (1); Chen, Changhua (1); Sun, Jun (1); Zhang, Xiaowei (1); Zhang, Yuchuan (1)

Author affiliation:(1) Northwest Institute of Nuclear Technology, P.O. Box 69-1, Xi'an 710024, China; (2) School of Electronic and Information Engineering, Xi'An Jiaotong University, Xi'an 710049, China

Corresponding author:Wang, J.(wanguiuc@mail.xjtu.edu.cn)

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Abstract:An overmoded rectangularly corrugated relativistic surface wave oscillator is designed and theoretically analyzed to produce the high power terahertz radiation with a TM_{10} mode. The design is fully verified and optimized by 2.5D particle-in-cell simulations. A high power terahertz wave is obtained with the output power of 285 MW at the frequency of 0.148 THz with conversion efficiency 20 when beam voltage is about 400 kV, current 3.8 kA, and the magnetic field 6 T. © 2012 American Institute of Physics.

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