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Title

Generating 0.42 THz radiation from a second harmonic gyrotron

Source

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Abstract

Gyrotrons are high powered coherent electromagnetic radiation sources, and are considered to be available powerful sources that have the potential to bridge the so-called terahertz gap. In the University of Electronic Science and Technology of China, a second harmonic gyrotron has been designed, manufactured, and tested. The gyrotron generated radiation at a 0.423 THz frequency in 5 ns pulses with an 8.1 Tesla magnetic field, with a power per pulse of about 4.4 kW. To date this is the highest frequency recorded for vacuum electronic devices in China. The gyrotron design, operation and measurements are presented.