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Title

THz Emission Induced by an Optical Beating in Nanometer-Length High-Electron-Mobility Transistors

Source

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Abstract

Experimental results of direct measurement of resonant terahertz emission optically excited in InGaAs HEMT channels are presented. The emission was attributed to two-dimensional plasma waves excited by photogeneration of electron-hole pairs in the HEMT channel at the frequency of the beating of two cw-laser sources. The presence of resonances for the radiation emission in the range of f₀ +/- 10 GHz (with f₀ from 0.3 up to 0.5 THz) detected by a Si -bolometer is found. The intensity of THz emission exhibits a nonlinear growth with increase of the pumping power. (9 References).