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Title:Separated fractal antennas for improved emission performance of terahertz radiations

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Abstract:We investigate the emission of terahertz (THz) radiation from two kinds of recently reported fractal photoconductive antennas by the method of separating antennas from transmission lines. A model for analyzing the separation design is presented. From the numerical simulations, the radiation power and center frequency of Sierpinski fractal photoconductive antenna are increased by ∼ 120% and ∼ 25%, respectively. Meanwhile, the first peak frequency emission intensity of H-fractal photoconductive antenna is increased by ∼ 70%. Because of the stronger resonant effect of the emitting antenna, this method shows high potential applications to various photoconductive antennas.

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