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标题: Asymmetric quantum dot in a microcavity as a nonlinear optical element

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摘要: We have investigated theoretically the interaction between individual quantum dot with broken inversion symmetry and an electromagnetic field of a single-mode quantum microcavity. It is shown that in the strong-coupling regime the system demonstrates nonlinear optical properties and can serve as emitter of the terahertz radiation at Rabi frequency of the system. Analytical results for the simplest physical situations are obtained and a numerical quantum approach for calculating an emission spectrum is developed.

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