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标题: Coherent detection of THz waves based on THz-induced time-resolved luminescence quenching in bulk gallium arsenide
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摘要: A kind of photoluminescence quenching, in which the time-resolved photoluminescence is modulated by a THz pulse, has been theoretically investigated by performing the ensemble Monte Carlo method in bulk gallium arsenide (GaAs) at room temperature. The quenching ratio could reach up to 50% under a strong THz field (100 kV/cm). The range in which luminescence quenching is linearly proportional to the THz field could be over 60 kV/cm. On the basis of these results, a principle for THz modulation and coherent detection is proposed. (C) 2012 Optical Society of America
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