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标题: Coupling Efficiency of Lamellar Gratings for Terahertz Quantum-well Photodetectors
作者: Zhang, R (Zhang, R.); Guo, XG (Guo, X. G.); Cao, JC (Cao, J. C.)
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摘要: One-dimensional (1D) etched gratings coated with a perfect metal are used to couple light into terahertz (THz) quantum-well photodetectors (QWPs). The coupling efficiencies of these reflective gratings are simulated by using the finite element method (FEM). The results show that simple optics arguments used in the design of gratings for quantum well infrared detectors (QWIPs) are not suitable in the THz region. The near-field effect is important in the coupling, and a "standing-wave effect" is found in the grating stripes. Optimizations of the gratings are also discussed.
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地址: [Zhang, R.; Guo, X. G.; Cao, J. C.] Chinese Acad Sci, Shanghai Inst Microsyst & Informat Technol, Key Lab Terahertz Solid State Technol, Shanghai 200050, Peoples R China
通讯作者地址: Zhang, R (通讯作者),Chinese Acad Sci, Shanghai Inst Microsyst & Informat Technol, Key Lab Terahertz Solid State Technol, Shanghai 200050, Peoples R China
电子邮件地址: jccao@mail.sim.ac.cn
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