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标题: Terahertz wave filter based on Cinquefoil photonic crystal
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摘要: There are increasing demands for experiments in terahertz frequencies, in different areas such as biotechnology, nanotechnology, space science, security, terahertz wave communications, and plasma diagnostics. For potential applications, the functional devices, such as beam polarizers, modulators and filters, are crucuial components for a terahertz system. As a dispensable device for ultrafast information processing and interconnection of terahertz wave communication, terahertz wave filter has attracted considerable attention. In this paper, we design the terahertz wave filter structure based on three kinds of photonic crystals structures. The finite-difference time-domain (FDTD) has been employed to analysis the performances of these terahertz wave filters. The simulation results show that these designed filters exhibit excellent transmission performance such as high transmission at the central frequency, adjustable bandpass, and good rejection of the sideband frequencies. Three kinds of compact and integrated terahertz wave filters are obtained.
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