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Title:State density properties of photonic crystal composited by different semiconductor material in terahertz band
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Abstract:Based on the plane wave expansion method research IV, III-V and II-VI semiconductor material composition family 2d triangle photonic crystal lattice terahertz band state density of characteristics, numerical simulation to get IV family in filling SiC rate f=0.8 form 0.037 THz band gap width, II-VI ZnO family in filling rate f=0.73 form 0.0417 THz band gap width form, the filler rate case III-V race semiconductor material form 0.027 THz band gap width, more data II-VI race semiconductor material form more wide band gap, the result is too Hertz photonic crystal devices to provide the theoretical basis for development.
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Main heading:Photonic crystals
Controlled terms:Energy gap - Semiconductor materials - Silicon carbide - Zinc oxide
Uncontrolled terms:Band gap width - Filling rate - III-V and II-VI semiconductors - Material compositions - Photonic crystal devices - Plane wave expansion method - State densities - Terahertz band - Theoretical basis - Wide band gap - ZnO
Classification code:712.1 Semiconducting Materials - 804.2 Inorganic Compounds - 933.1 Crystalline Solids
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