557
标题: Coupled Optical Tamm States in a Planar Dielectric Mirror Structure Containing a Thin Metal Film
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摘要: The coupling between two optical Tamm states (OTSs) with the same eigenenergy is numerically investigated in a planar dielectric mirror structure containing a thin metal film. The reflectivity map in this structure at normal incidence is obtained by applying the transfer matrix method. Two splitting branches appear in the photonic bandgap region when both adjacent dielectric layers of metal film are properly set. The splitting energy of two branches strongly depends on the thickness of the metal film. According to the electric field distribution in this structure, it is found that the high-energy branch corresponds to the antisymmetric coupling between two OTSs, while the low-energy branch is associated with the symmetric coupling between two OTSs. Moreover, the optical difference frequency of two branches is located in a broad terahertz region.
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