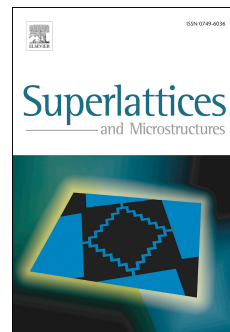


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Crossing and anti-crossing effects of polaritons in a magnetic-semiconductor superlattice influenced by an external magnetic field

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Abstract

Crossing and anti-crossing effects in dispersion characteristics of both bulk and surface polaritons in a magnetic-semiconductor superlattice influenced by an external static magnetic field being in the Faraday geometry are discussed. The bulk polaritons are classified as eigenwaves with right-handed and left-handed elliptically polarized states, whereas the surface polaritons are considered as hybrid modes having a predominant effect of either magnetic or semiconductor subsystem, and distinctions in dispersion characteristics of such polaritons are revealed involving the concept of critical points.

Keywords: electromagnetic theory, polaritons, magneto-optical materials, superlattices, metamaterials

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