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Birefringence in In0 .3Ga0 .7As/GaAs Quantum Layers

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Abstract

Reflection, wavelength modulated reflection and transmission spectra at P, P (S, S) and 45°, 45° (135°, 135°) polarizations for incidence angles close to normal and Brewster one were researched in quantum In0.3Ga0.7As layers. Isotropic wavelengths λ0—1.137 μm (1.09 eV), λ02—1.11 μm (1.12 eV) and λ03—0.932 μm (1.09 eV) had been revealed. The refractive indexes n for P, P (S, S) and 45°, 45° (135°, 135°)) polarizations are intersecting in these wavelengths and theirs differences $\Delta n = n_{PP} - n_{SS}$ ($\Delta n = n(45°) - n(135°)$) intersects the null axis. The isotropic wavelength (λ_o) is shifted towards the long wavelength region at Brewster angle in reference to the case of perpendicular incidence of light ($\phi = 7°$) on the QW surface.