

Abstract Submitted
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Investigation of the influence of the magnetic field of different orientations on excitonic states in structures with shallow quantum wells¹ YURI KHAVIN, MIKHAIL SKORIKOV, NIKOLAI SIBELDIN, VITALIY TSVETKOV, P.N.Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia — Photoluminescence (PL) and photoluminescence excitation (PLE) spectra of GaAs/Al_{0.5}Ga_{0.95}As structures with two tunneling-coupled quantum wells (QWs) 3 and 4 nm wide and structures with tunneling-isolated QWs of the same width were investigated at liquid helium temperatures in parallel and perpendicular magnetic fields up to 14.6T. It was shown that the parallel magnetic field strongly suppresses tunneling coupling in the structure with coupled QWs, and its PLE spectrum in a strong field becomes similar to the PLE spectrum of the structure with isolated QWs. At the same time, excitonic components of the PL spectrum do not undergo such substantial changes. It was also shown that both parallel and perpendicular field substantially affect the intensity of the trion PL line in both structures, but the influence of the parallel field is much stronger than it is for the perpendicular field.

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