

## Energy spectrum in a shallow GaAs/AlGaAs quantum well probed by spectroscopy of nonradiative broadening of exciton resonances

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The energy spectrum of the exciton and carrier states in a shallow GaAs/AlGaAs quantum well is experimentally studied by means of the spectroscopy of the nonradiative broadening of exciton resonances and the spectroscopy of the photoluminescence excitation. The observed peculiarities of the spectra are treated using the numerical solution of the one-dimensional Schrödinger equation for free carriers and three-dimensional equation for excitons in the quantum well. The conduction and valence band offsets in the shallow GaAs quantum well are determined.

**Keywords:** exciton spectroscopy; GaAs/AlGaAs quantum well; nonradiative broadening.

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