

The aim of this work is the study of photoluminescence properties of GaAs/Al<sub>0.33</sub>Ga<sub>0.67</sub>As double quantum well. Low-temperature luminescence spectra of this sample are measured in dependence on electric and magnetic field and different excitation power. The temperature dependencies of photoluminescence especially of the indirect excitons in in-plane magnetic field are gauged as well. The simple model of localized indirect excitons is discussed to explain the discrepancy concerning the damping of indirect exciton photoluminescence in in-plane magnetic field. The effective g-factors of indirect, neutral and charged excitons are calculated from observed Zeeman splitting. Few simple models are proposed to explain the behavior of effective g-factors. The possible agreement or contradiction with other published experimental data is discussed.