

The theory of optical properties of low-dimensional semiconductors in quantizing magnetic fields

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The base of the theory of light reflection and absorption by low-dimensional semiconductor objects (quantum wells, wire and dots) at both monochromatic and pulse irradiations and at any form of light pulses are developed. The semiconductor object may be placed in a stationary quantizing magnetic field. As an example the case of normal light incidence on a quantum well (QW) surface is considered. The width is arbitrary. For Fourier-components of electric fields the integral equation (similar to the Dyson-equation) and solutions of this equation for some individual cases are obtained.