ATOMIC AND MOLECULAR STATES OF $A(+)$-CENTERS IN GaAs/AlGaAs QUANTUM WELLS

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S u m m a r y

We consider nontrivial impurity states of acceptors that captured an extra hole, the so-called $A(+)$-centers, in GaAs/AlGaAs quantum wells. Practically any reasonable stationary concentration of $A(+)$-centers in quantum wells can be obtained by means of the double selective doping of wells and barriers. It is shown that, along with single atomic $A(+)$-centers, their collective molecular states can be formed in spite of their Coulomb repulsion. Atomic and molecular states of $A(+)$-centers can be discovered in various peaks of photoluminescence which represents the main method of investigation of these states in the work. Different states of $A(+)$-centers are also characterized by different dependences of the circular polarization and the shift of PL peaks in the magnetic field.