Nanocomposites and nanomaterials

Electron Landé g-factor in coupled quantum dots

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The electronic structure of coupled quantum dots (QDs), made with InAs embedded in a wetting layer InAs and surrounded by GaAs, is studied. More specifically, the dependence of Landé g-factor on geometry and material parameters is presented. The carrier wavefunctions and energy states are calculated by using the strain dependent $k \cdot p$ theory. The g-factor strongly depends on the energy gap and on the applied external magnetic field.

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[2] *Stavrou V.N.* Electronic structure of asymmetric vertically coupled InAs/GaAs quantum dots // Physica B **407** (2012) 1157–1160.
[3] *Stavrou V. N.* Polarized light in quantum dot qubit under an applied external magnetic field // Physical Review B **80**, 153308, 2009.