PERHITUNGAN ANALITIK PEMECAHAN SPIN RASHBA PADA QUANTUM DOT GaAs DALAM POTENSIAL PARABOLIK DUA DIMENSI

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Abstract	Analytical calculation of Rashba spin-splitting on the GaAs-based quantum dots in the twodimensionalparabolic confinement. It has been investigated the spin splitting due to the Zeeman effectand a Rashba-type spin-orbit coupling on a disk-like GaAs-based quantum dot. Calculations weredone analytically considering the influence of an external magnetic field applied perpendicularly tothe dot. The result shows that spin-orbit interaction causes a ÃƒÂ¢Ã¢Â‚Â¬Ã…Â“crossingÃƒÂ¢Ã¢Â‚Â¬Ã‚Â• on the electron energy statesin the dot with the same angular momentum and different spin polarizations in a nonzero magneticfield. The calculated magnitudes of spin splitting and magnetic fields at the crossing level can be usedto discuss more realistic quantum dots model theoretically on the further research.Keywords: Rashba spin-orbit coupling, GaAs-based quantum dots, crossing levels
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