



Sonderforschungsbereich 631
Festkörperbasierte Quanteninformationsverarbeitung



Seminar Announcement

Control of electron and nuclear spins in InGaAs dots

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InGaAs quantum dots (QD) grown by self-assembly in GaAs provide strong confinement for the charge carriers and, importantly, an efficient isolation of the electron spin from the environment of the large semiconductor matrix. The latter property is of considerable importance for the implementation of electron spins localised in dots for quantum information processing. A high degree of isolation from environment required to avoid dephasing should not however prevent the possibility of controlled manipulation of the spins. In our work we address these issues in studies of the spin dynamics of neutral and charged excitons in ensembles of QDs and demonstration of gate-control of spin-memory effects and electron-nuclear spin interactions in individual dots.

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