



Dynamics of Electron and Nuclear Spin Interaction in Laser Assisted Nuclear Magnetic Resonance Spectroscopy of Gallium Arsenide Nanostructures

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Shaker Verlag Nov 2011, 2011. Taschenbuch. Book Condition: Neu. 208x146x17 mm. Neuware - Gallium arsenide (GaAs) is a group III/V semiconductor and is a very important material for modern technology. It has a broad range of applications and it is extensively used in light emitting diodes, laser diodes [81, 37, 46, 40], sensors and detectors [81, 55] among others. In electronics it complements silicon devices, where its applications reach from robust logic circuitry and transistors to microwave waveguides [36, 81, 13]. Gallium arsenide also serves as a photovoltaic power source [37, 46, 40]. Especially due to the ever advancing technological applications, there is a keen scientific interest in new and improved methods for the analysis of the material properties, the development of new techniques and experimental schemes. Motivated by the timescale of the dynamics of a nuclear spin system in a solid state device, a very active field of research is the realisation of semiconductor-based devices for spintronics [56], quantum computation [45, 17, 88] and quantum memories [65]. GaAs is often used, not as a bulk semiconductor, but in nanoscale assemblies of different semiconductors, i.e. heterostructures. Due to their unique properties, heterostructures are of particular interest to ongoing academical and...



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