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Tuning the g -factor in self assemble quantum dots T. P. MAYER ALEGRE, F. G. G. HERNANDEZ, G. MEDEIROS-RIBEIRO, Brazilian National Synchrotron Laboratory — The knowledge of electron and hole g -factors, their control and engineering are key for usage of spin degree of freedom for information processing in solid state systems. The electronic g -factor will be materials dependent, the effect being larger for materials with large spin-orbit coupling. Since electrons can be individually trapped into quantum dots in a controllable manner, they may represent a good platform for the implementation of quantum information processing devices. In this work we explore the effect of a stress on the g -factor for the electrons trapped in Self- Assembled Quantum Dots (SAQD) in two different samples. The experiments consist on a magneto-capacitance spectroscopy (CV) performed at low temperature (2K) where the direction of magnetic field, as well as the intensity, can be changed. We demonstrated that g -factor can be increased by as much as fifteen percent. Finally it is also shown that one can achieve the g -factor assessment, and engineering in SAQDs in a controllable manner.

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