

Applications are invited for a **PhD/post-doc position** available in the field of experimental quantum optics and non-linear spectroscopy. The position is funded by the European Research Council Starting Grant entitled "Propagative and Internal Coherence in Semiconductor Nanostructures", currently running at Néel Institut CNRS Grenoble.

The goal of the project is to achieve and explore a long-range photon-mediated coupling between a pair of distant solid state quantum emitters (quantum dots), embedded in a modified photonic environment (microcavities, photonic wires, wave guides). Such a demonstration is considered as a significant, inter-disciplinary milestone, particularly relevant in solid state quantum information processing, photonics and coherence phenomena in condensed matter.

To reach this aim, the ERC team have recently developed an advanced spectroscopic tool allowing probing and controlling coherent responses, namely multi-wave mixing signals, of individual excitons in semiconductor quantum dots. The new team member will extend these developments, so as to perform spatially-resolved heterodyne wave-mixing experiments and detect long-range inter exciton couplings.

The project benefits from the large local scientific infrastructure and supporting (mechanical, optical, electronic) workshops, as well as from numerous intra-European collaborations (France, UK, Italy, Germany, Poland). The experiments are being carried out in a recently refurbished and fully equipped lab-space.

A suitable candidate must hold a Master/PhD degree in Physics, should be interested in solid state physics and optics, and self-inclined towards experimental work. Desirable complementary skills include hardware programming in C environment, electronics and good communication abilities.

The position should be filled no later than 1st of November 2014.

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