

Post-doctoral position in Nanophotonics and Quantum Optics.

A post-doctoral position is available to develop a new kind of single photon source based on the coupling between an innovative quantum emitter (perovskite colloidal nanocrystal) and a one-dimensional (nano-fiber) guide.

This project is a collaboration between the NANOST team at the Institute of NanoSciences of Paris (INSP) and the Quantum Optics Group of the Kastler-Brossel Laboratory (LKB). The INSP, a founding member of the Labex "Materials, InterfaceS, Surfaces, Environment" (MATISSE), is a leading player in Pierre et Marie Curie University (UPMC) in Physics and Materials Science, particularly at the nanoscopic level. The NANOST team's concerns are in cutting-edge fields (exciton and spin physics in semiconductor or magnetic nanostructures) where electronic properties are studied by advanced optical spectroscopies. The LKB is a major international player in the fundamental fields of atomic physics, quantum optics and related fields (metrology, quantum information, ...). The LKB partner team in the project focuses on the quantum properties of light produced by different model systems, with study themes related to quantum fluctuations, generation of entangled states, light-matter states (polaritons) and quantum metrology.

The work is mainly experimental: the post-doctoral researcher will have to conduct spectroscopic studies to deepen the knowledge of the emission and relaxation properties of the states of the emitting nanocrystal, maintaining a privileged relation with the specialists of the synthesis (within the INSP) to optimize the properties of interest. The spectroscopic investigations will be carried out at the INSP essentially, in a micro-photoluminescence configuration, in experiments at the single emitter level. The post-doctoral research will also be involved in the "photonics and quantum optics" aspects of the project, where the radiative coupling of the emitter to a nano-fiber will be explored. In this framework, he will work in collaboration with the LKB team specialized in the field in order to (i) provide experimental support and (ii) bring his knowledge of the new class of studied nano-emitters.

Skills: - Good knowledge of the electronic properties of nanostructures and light-matter interaction, particularly applied to the study of individual nanostructures by far-field optical techniques.

- Knowledge in nanophotonics is also welcome.

The project is funded by SU Emergence

Salary: 2200 €/month.

Starting date (flexible between March and June 2017)

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