

# **Postdoctoral Fellowships**

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#### **CALL FOR APPLICATIONS 2025 - FELLOWS**

Supervisor Agnès Maître

Supervisor page <a href="https://www.researchgate.net/profile/Agnes-Maitre">https://www.researchgate.net/profile/Agnes-Maitre</a>

Host Institution Centre National de la Recherche Scientifique (CNRS)

https://www.cnrs.fr/en

Research Lab Institute of NanoSciences of Paris

https://w3.insp.upmc.fr/en/insp-en/

Research Team Acoustics and Optics for Nanosciences and Quantum Physics

https://w3.insp.upmc.fr/en/research/research-teams/acoustics-and-

optics-for-nanosciences-and-quantum-physics/

## **Project Title**

Collective emission of excitons within nanostructures

#### **Project Description**

Insertion of nanocrystals within optical dielectric or plasmonic cavities, induces dramatic changes of their emission. At room temperature, in the visible range, emission can be engineered, playing on optical and electronic confinement. Even within single nanocrystals, several excitons can be created simultaneously evidencing strong exciton/photon coupling. Moreover, with collections of nanocrystals, lasing can be obtained. The objective is the study of this collective emission in both cases.

#### Keywords

nano-photonics, strong coupling, laser

### **Description of the Host Research Lab**

The Institute of NanoSciences of Paris (INSP) brings together teams from four condensed matter physics laboratories. Its scientific objectives are at the heart of fundamental research in nanosciences, but it also has a wide range of applications: optoelectronics and telecommunications, earth sciences and the environment, catalysis and medical diagnostics.