Post-Doc position
Institute Of Light and Matter, Lyon, France

Laboratory:
The institute of Light and Matter (ILM) is part of the University Lyon 1 and CNRS. The “Material and photonic nanostructures” group has a particular interest and expertise in the study of interactions between electromagnetic surface modes (plasmon and others) and different molecular materials in weak and strong light/matter coupling regime.

Job description:
The candidate will take part in a project aimed to exploit the extended molecule/molecule interaction length, in strong coupling regime with surface plasmons, to generate materials with new functionalities and original physical processes. The quantum hybridization of different molecules with extended surface plasmons induces coherence in the molecule excitations over tens of microns [1]. The structuration of the materials within the coherence length leads to new properties, such as polarization anisotropy or bifunctionality and allow the creation of active metasurfaces [2].

The aim of the postdoctoral position is to experimentally demonstrate the long range molecular coupling with two different materials connected by a propagating or localized plasmon. The gain of 3 orders of magnitude in energy transfer distance, expected for the system in strong coupling, will be investigated by spectroscopy and time resolved experiments. The extended range finds application in photochemistry (coupled photocatalysts), reconfigurable metasurfaces and new materials which are constituted by alloys of the two basis based on plasmon hybridization.

This work will be strongly coupled to expert of surface chemistry in Lyon which fabricates the samples.

Candidate profile:
The successful candidate must have a PhD in experimental physics with experience in optics. Fluent English or French and good communication skills are required.

Applying instructions:
- Applicants should send their CV (including a list of publications and a short summary of their scientific work) to Joel Bellessa by e-mail: joel.bellessa@univ-lyon1.fr.
- They should also provide the contact details for two referees.

The duration of contract will be for 12 months.
The salary will be ≈2000€ net per month depending on experience.