Post-doctoral position

Sensitive Luminescent Surfaces for pH and cations detection in water.

Research Fields: Organic, Polymer and Surface chemistry; Physical chemistry.

Work Place: Université Paris-Saclay (Ecole Normale Supérieure Paris-Saclay / Université Paris-Sud)

Research Laboratory(ies): Institut des Sciences Moléculaires d’Orsay (ISMO) UMR-8214 / Laboratoire de Photophysique et Photochimie Supra- et Macromoléculaires (PPSM) UMR-8531

Head(s) of the Scientific Project: Prof. R. Méallet-Renault (ISMO) / Dr. G. Clavier (PPSM)

Funding: Labex CHARMMMAT (http://www.charmmmat.fr/en/)
Short term contract (12 months); net salary: 2605,99€ per month

Starting Date: Between 1st October 2018 - 1st January 2019

Scientific context: We have recently prepared non-toxic and pH-sensitive fluorescent nanoparticles (FNP) that can monitor bacterial growth. We wish to demonstrate that these FNP can also be applied to monitor in real-time both pH and toxic cation (mercury, lead ...).

The first step will consist in the development and characterization of new bi-functional FNP that can emit green or red fluorescence. Secondly both types of FNP will be grafted onto a glass surface and then functionalized with selective probes. The final goal is to design dual luminescent surface sensitive both to pH and cations. By gathering the FNPs on surfaces we shall gain in contrast and sensitivity.

Our recent publications about this research project:
- C. Grazon et al. Macromol. (2013) 46 (13), 5167
- Y. Si et al. Biosensors andBioelectronics 75 (2016) 320

Required skills: The candidate should have performed his/her PhD in organic chemistry, and eventually surface chemistry. Skills in photo-physical measurements would be a bonus. The project is a collaborative work between two research groups thereby the candidate is expected to have team-working capabilities and good communication skills.

Contacts: Rachel Méallet-Renault (rachel.meallet-renault@u-psud.fr) ; Gilles Clavier (gilles.clavier@ens-paris-saclay.fr)