

MASTER DE CHIMIE DE PARIS CENTRE - M2S2
Proposition de stage 2017 - 2018

Spécialité(s) de rattachement (préciser oui/non)
Chimie analytique, physique, et théorique : non
Chimie moléculaire : oui
Chimie et physico-chimie des matériaux : oui
Ingénierie chimique : non

Laboratoire d'accueil

Intitulé : IPCM, UMR 8232 - *Equipe Chimie des Polymères*

Adresse : UPMC, tour 43-53, 5^{ème} étage, 4 place Jussieu, Paris

Directeur (Nom, Prénom) : Corinne AUBERT - *Laurent BOUTEILLER*

Tél : 0144273738

E-mail : laurent.bouteiller@upmc.fr

Responsable du stage

Nom, Prénom : KREHER David

Fonction : Maître de Conférences (HDR)

Tél : 0144275032

E-mail : david.kreher@upmc.fr

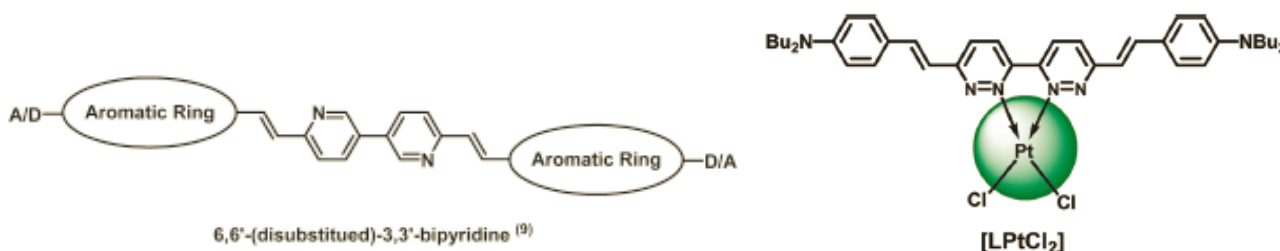
Période de stage : 1^{er} février au 31 juillet (ou 30 août)

TITRE (3 lignes maximum)

New types of quadrupolar chromophores for PHOLED and/or sensing applications.

Projet scientifique (1 page maximum) :

In the past, we reported on the design and synthesis of new quadrupolar π -conjugated 3,3'-bipyridazine D-A-D chromophores whose electronic and optical properties were investigated. Besides their high fluorescence and pronounced solvatochromism, they exhibit an inherent electroactivity which was exploited to build an organic green light emitting device. Moreover, the ability of such chromophore to play the role of ligand and complex metallic centers (CuI, NiII, PtII, and IrIII) was also tested, allowing us to access different geometries and to tune their electronic and optical properties.



In this context, the versatility of the chemistry disclosed opens interesting perspectives for :

- i) modifications of the donor/acceptor character of the terminal substituents of the molecule and consequently for the tuning of the electronic properties.
- ii) the design of integrated chemical sensors, based on the solvatochromism emission and fluorescence quenching upon complexation with the first series of transition.
- iii) the design of new ligands and the application of them in the synthesis of heavy-metal complexes to obtain phosphorescent emitters (e.g., ruthenium complexes) as sensitizers.

This will necessitate (1) to synthesize new bipyridazine derivatives, (2) to determine their optical properties either as unique materials or as ligands with different metals (3) to test them as phosphorescent emitters in organic electrophosphorescent PHOLED configurations.

Références : [1]. F Lincker, D Kreher, A-J Attias, J Do, E Kim, P Hapiot, N Lemaitre, B Geffroy, G Ulrich and R Ziessel. Rodlike Fluorescent π -Conjugated 3,3'-Bipyridazine Ligand: Optical, Electronic, and Complexation Properties. *Inorganic Chemistry* (2010), 49(9), 3991-4001. [2]. J Do, Y Kim, A-J Attias, D Kreher and E Kim. Eunkyong. Patterning of pH Sensitive Fluorescent Bipyridazine Derivatives. *J. Nanosci. Nanotechnol.*, (2010), 10, 6874-6878.