



## Coordination entities of a Pyrene-based Iminopyridine ligand: Structural and photophysical properties

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Titre Coordination entities of a Pyrene-based Iminopyridine ligand: Structural and photophysical properties

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Mots-clés Coordination entities [7], Isothermal titration calorimetry [8], Pyrene [9], Stability constant [10], X-ray structure [11]

Résumé en anglais A pyrene-based iminopyridine ligand L has been prepared and displays the absorption and emission properties expected for pyrene-based derivatives in solution. Ligand L, as well as two neutral and one monocationic coordination entities, respectively formulated as  $[\text{ZnLCl}_2]$  1,  $[\text{ReLCl}(\text{CO})_3]$  3 and  $[\text{CuL}_2](\text{BF}_4)$  2, have been crystallized and analyzed by single crystal X-ray diffraction analysis. The corresponding crystal structures indicate the formation of supramolecular architectures generated by offset  $\pi \cdots \pi$  stacking between pyrene fragments and strong C-H $\cdots\pi$  interactions in coordination entity 1. For the cationic coordination entity 2, the crystal packing reveals the presence of C-H $\cdots\text{F}$  and C-H $\cdots\pi$  interactions and numerous C-H $\cdots\pi$  contacts interconnecting the molecules into a 3D network. As for coordination entity 3, hydrogen bonding and  $\pi \cdots \pi$  stacking link the molecules in a three dimensional manner. Zinc (II) and copper (I) coordination entities have also been studied through isothermal titration calorimetry, which indicate a strong binding and a different stoichiometry for both coordination entities. Photophysical studies of the ligand and corresponding coordination entities show a monomer type pyrene emission and a higher fluorescence quantum yield for the zinc coordination entity 1 as compared with copper 2 and rhenium 3 coordination entities.

URL de la notice <http://okina.univ-angers.fr/publications/ua16085> [12]

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