

Coordination chemistry with iminophosphorane based ligands

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Pincer ligands play a preponderant role in coordination chemistry and have found applications in numerous areas ranging from organometallic reactions, catalysis, macro/supramolecular chemistry and material science.^[1] They are indeed able to coordinate a large variety of metals in different oxidation state providing a strong stabilization thanks to the meridional coordination of the three adjacent coordination sites. Their popularity stems also from their synthetic tunability allowing variations of the coordinating atoms, the linker between them as well as the peripheral groups in order to adapt the ligand structure to the targeted applications.

Despite the myriad of existing structures in the literature only few of them incorporate the electron-rich iminophosphorane function (P=N), which can be viewed as nitrogen ylides and behave as strong σ and π donors.^[2] We were therefore interested in developing new iminophosphorane pincer ligand, study their coordination ability as well as the reactivity of the formed complexes.

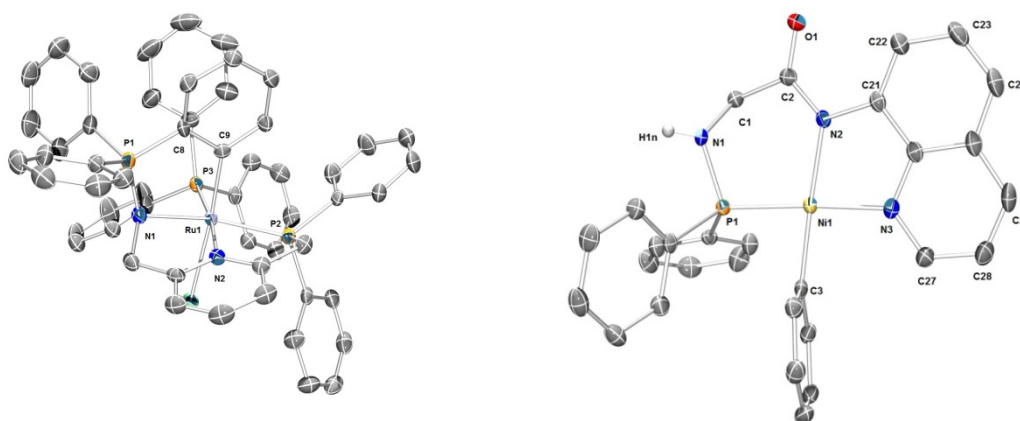


Figure 1: From iminophosphorane pincer complexes.

This presentation will focus on two ligand families and the reactivity of their ruthenium, iron and nickel complexes.^[3]

References

- [1] Organometallic Pincer Chemistry, in Topics in Organometallic, Eds: G. van Koten and D. Milstein chemistry, Springer-Verlag Berlin Heidelberg, **2013**.
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- [3] T. Cheisson, L. Mazaud, A. Auffrant, *Dalton Trans.* **2018**, 47, 14521-14530.