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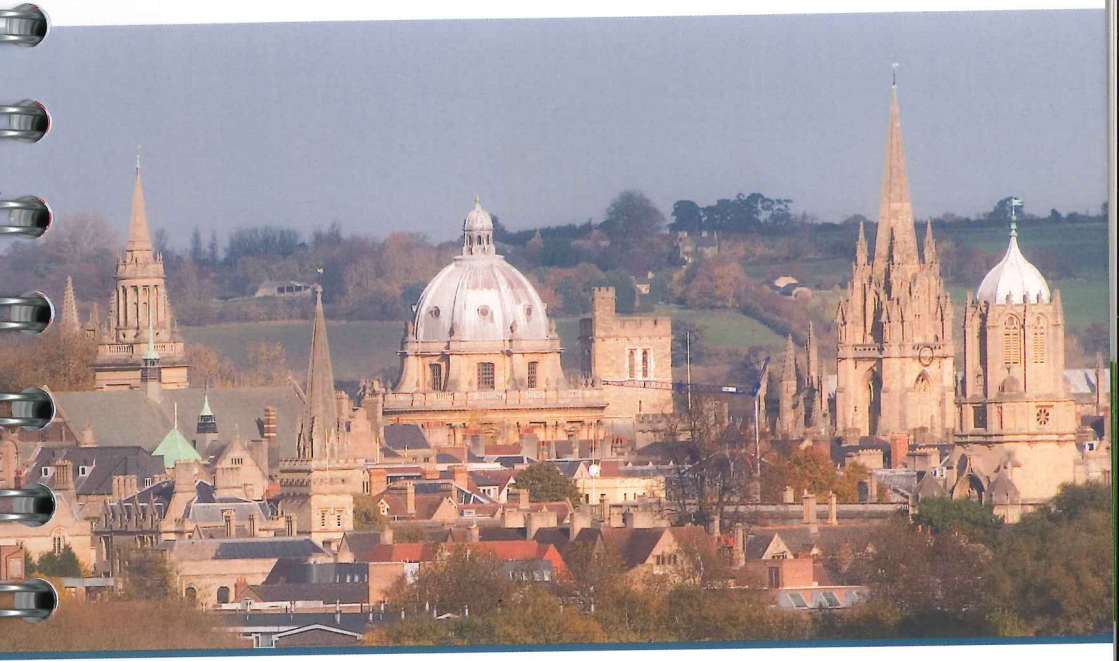

# Book of Abstracts

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# Cyclometalated-pentafluorophenyl $Pt^{II}$ units as Synthons for Luminescent $Pt^{IV}$ and Heterometallic Complexes

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Phosphorescent cyclometalated $Pt^{II}$ complexes have attracted a great interest during the last decades.[1] These complexes display highly efficient triplet state emissions determined by the cyclometalating group and the auxiliary ligands. Among the coligands, the $C_6F_5$ ($R^F$) group not only increases the stability, but also improves the emission properties of the complexes in solution, favored by strong Pt-$R^F$ bonds. In contrast, studies on related cyclometalated $Pt^{IV}$ complexes have received a limited attention.[2] Furthermore, the number of luminescent heterometallic assemblies based on cyclometalated units are scarce.[3]

This presentation is focused on the preparation and versatile reactivity of neutral [Pt(C^N)($R^F$)S] (S = acetone, dmso) and [Pt(C^N)($R^F$)(HC^N)] complexes, with different cyclometalating ligands. Some of these derivatives have been used to prepare unusual $\eta^2$-alkyne $Pt^{II}$ complexes and mono and bis-cyclometalated $Pt^{IV}$ compounds. Furthermore, selected reactions with the solvates produce very stable luminescent heterometallic $Pt_2Pb$ clusters and Pt-Tl binuclear and extended chains, featuring Pt-M bonds supported by bridging pyridine thiolate ligands. Interestingly, some of these heterometallic systems are multifunctional exhibiting vapochromic or mechanochromic behavior.

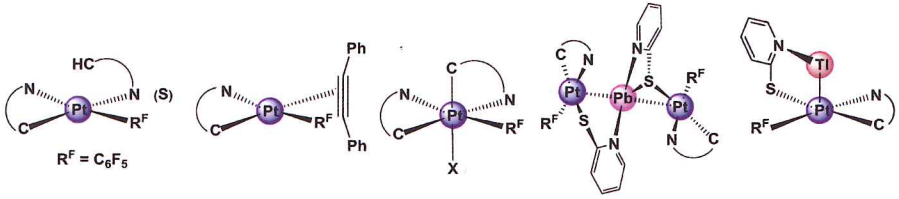


Figure. Schematic view of some selected types of luminescent complexes.

## References

1. J. Kalinowski, V. Fattori, M. Cocchi, J. A. G. Williams, *Coord. Chem. Rev.*, 2011, **255**, 2401
2. F. Juliá, D. Bautista, P. González-Herrero, *Chem. Commun.*, 2016, **52**, 1657
3. A. Díez, E. Lalinde, M. T. Moreno, *Coord. Chem. Rev.*, 2011, **255**, 2426-2447.