**Synthesis of luminescent hybrid silica-based materials**

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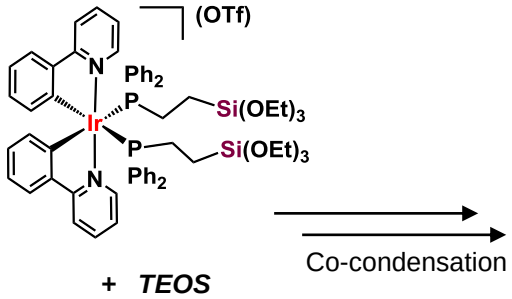
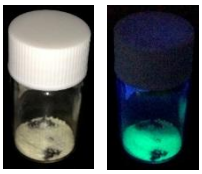
Mesoporous silica materials have attracted considerable attention during the past decades, being mainly used as support for catalytic applications. Due to their chemical inertness, adequate functionalization is required to develop novel nanostructured materials with innovative properties in different fields such as sustainable energy, environment sensing and remediation, biomaterials, pharmaceutical industry and catalysis, among others. In recent years, our group has developed a new synthetic strategy to obtain hybrid periodic mesoporous metal complex-silica (PMMs).[1][2] This new method is based on the co-condensation of the appropriate silica precursor (like TEOS) with metal complexes containing ligands with terminal trialkoxysilane groups. By this new strategy, the first luminescent complex-silica hybrid material has been synthetized.[2]

Following with this work, and considering the growing interest in luminescent silica materials due to their potential photonic, photocatalytic or biomedical applications, we have recently extended this study to the synthesis of emissive complexes of other $d^6$ ($Ir^{III}$) and $d^8$ ($Pt^{II}$) metallic ions and their incorporation in silica gels. The as-synthesized luminescent Pt and Ir complex-silica gels show good stability and excellent emissive and textural properties, and have been synthesized to be used as mesoporous luminescent materials.

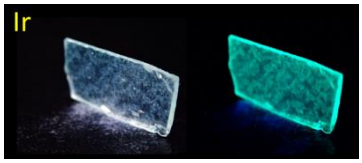
[1] Serrano, E.; Linares, N.; Berenguer, J. R.; García-Martínez, J.: *Chem. Commun.*, **5** (2013) 844.

[2] Rico, M.; Sepúlveda, A. E.; Ruiz, S.; Serrano, E.; Berenguer, J. R.; Lalinde, E.; Garcia-Martinez, J.: *Chem. Commun.*, **48** (2012) 8883.



***Luminescent hybrid metal complex-silica gels***



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