Poster

Mn(II) organo-inorganic salts as stimulus-responsive luminescent compounds

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Luminescent smart materials can respond to different types of external stimuli such as temperature, pressure or the presence of solvents, with changes in their emission, and this feature makes these materials likely candidates for applications as sensors. Our research group has already obtained some promising luminescent coordination compounds that present this behaviour [1,2]. Coordination compounds of transition metals are especially suited for this purpose, as they exhibit labile bonds and can easily undergo structural changes due to the ability of the metal atom to reorganize its coordination environment, yielding significant changes in their luminescent properties.

This communication reports the synthesis and characterization of ionic coordination compounds containing the cation 1-propyl-1,4- diazabicyclo[2.2.2]octan-1-ium (commonly abbreviated as *pr-ted*) and manganese bromide anions. The structures of the different solid phases have been solved by single crystal X-ray diffraction, and changes observed in their emission (see Figure 1) can be explained with the structural changes observed in the materials as a response to physical and chemical stimuli.

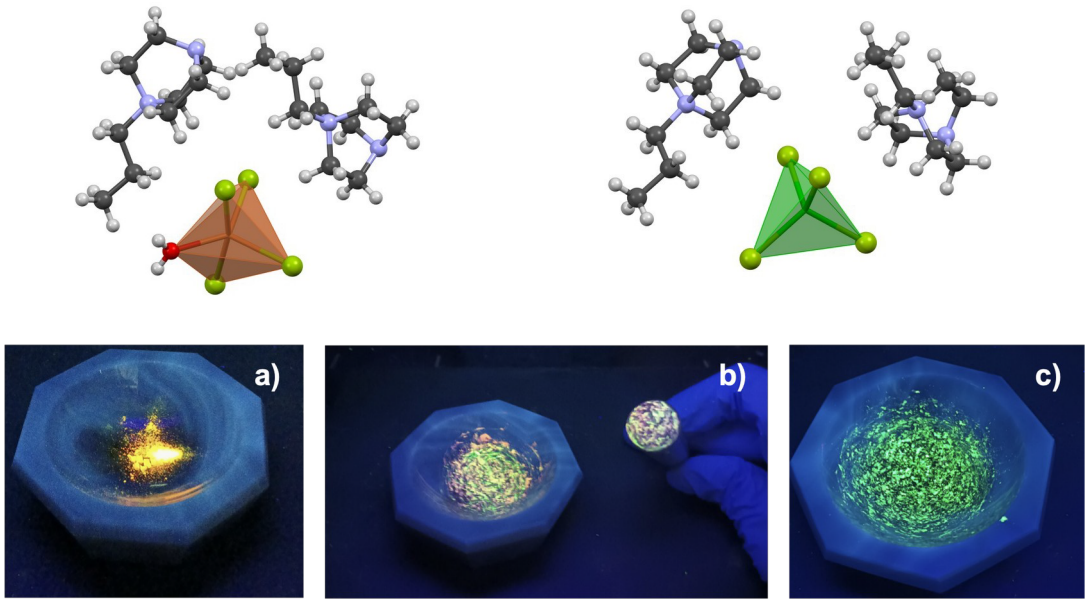

Figure 1. Phase transition and colour change induced by grinding in an agate mortar: Emission before grinding (a), after grinding for 1 minute (b) and after 2 minutes of grinding (c).

[1] Murillo, M., Wannemacher, R., Cabanillas-González, J., Rodríguez-Mendoza, U. R., González-Platas, J., Liang, A., Turnbull, R., Errandonea, D., Lifante-Pedrola, G., García-Hernán, A., Martínez, J. I. & Amo-Ochoa, P. (2023). *Inorg. Chem.,* **62**, 28, 10928.

[2] Murillo, M., Conde, J. A., Wannemacher, R., Cabanillas-González, J., Rodríguez-Mendoza, U. R., González-Platas, J., Liang, A., Turnbull, R., Errandonea, D., Martínez, J. I. & Amo-Ochoa, P. (2022). *J. Mater. Chem. C*, ,**10**, 18004.

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