

Poster Presentations

[MS25-P27] Solvent induced solid state structural rearrangement in a novel platinum pincer compound

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Cyclometallated Pt(II) compounds incorporating the 1,3-di(2-pyridyl)benzene tridentate (N[^]C[^]N) pincer ligand have proved highly promising for luminescence applications.^{1,3} Such compounds also show significant scope for “tuning” with substitution at various points on the pincer, particularly the central phenyl *para* to the metal, producing compounds with emissive frequencies across the visible spectrum.^{2,4} Less well-studied, however, is the effect of ligand substitution on the fourth platinum coordination position. It has been shown however, that substitution at this position has significant scope in altering the solid state aggregation of the compounds, and in facilitating intermolecular Pt-Pt interactions.⁵

We report the synthesis and investigation of a new, strongly luminescent cyanide complex of Pt(II), containing the tridentate methyl-3,5-di(2-pyridyl)benzoate) (MeOOC-N[^]C[^]N) ligand. The compound displays almost instantaneous and highly reversible vapochromic and solvatochromic effects in the solid state along with dramatic changes in photoluminescent properties. Through spectroscopic and crystallographic experiment, these properties have been directly attributed to structural rearrangement facilitated by hydrogen bonding solvents, directing the formation of intermolecular one dimensional Pt-Pt chains present in the solid state.

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Keywords: vapochromism; luminescence; hydrogen-bonding