

Dr Paul Lusby
Royal Society University Research Fellow /
Lecturer in Supramolecular Chemistry

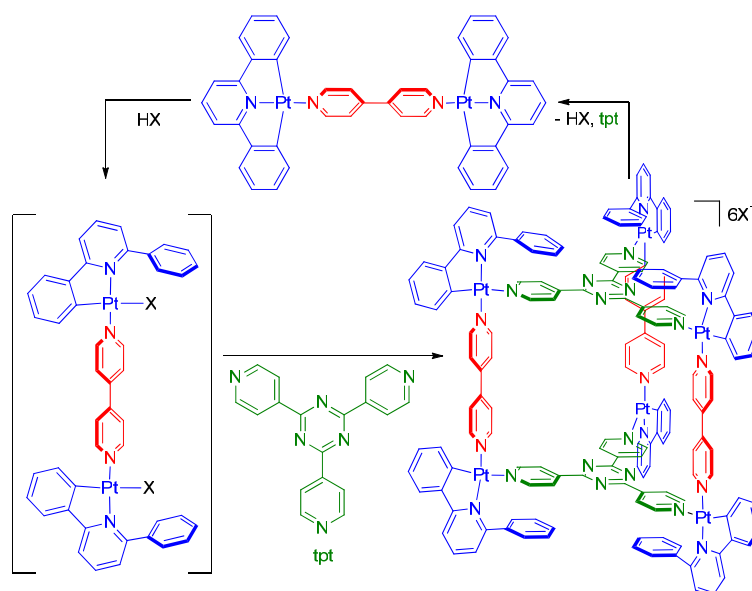
e-mail: Paul.Lusby@ed.ac.uk

tel: 0131 6504832

Research Interests: synthetic coordination chemistry, metallosupramolecular chemistry, molecular machines and motors, functional self-assembled systems.



The focus of our research is in the application of synthetic coordination chemistry to a number of contemporary research areas such as artificial molecular machines and motors, and multifunctional self-assembled systems. We have recently discovered a cyclometallated platinum coordination motif which reveals/masks *cis* coordinating groups in response to pH changes. This has been exploited to create metallosupramolecular systems which assemble in the presence of acid and disassemble when treated with base. We are currently exploring ways of linking this responsive behavior to other functions such as catalysis, sensing or transport. Using similar compounds, we have also shown it possible to control both the kinetics and thermodynamics of ligand exchange using light and proton inputs, which we anticipate will play a key role in the development of future devices such as molecular machines.



SELECTED RECENT PUBLICATIONS

1. "Dual Stimuli-Responsive Interconvertible Heteroleptic Platinum Coordination Modes" S. J. Pike, P. J. Lusby, *Chem. Commun.*, **2010**, DOI:10.1039/C0CC01668C.
2. "Improved dynamics and positional bias with a second generation Pd-complexed molecular shuttle" D. A. Leigh, P. J. Lusby, R.T. McBurney, M. D. Symes, *Chem. Commun.* **2010**, 2382.
3. "Stimuli-Responsive Reversible Assembly of 2D and 3D Metallosupramolecular Architectures" P. J. Lusby, P. Müller, S. J. Pike, A. M. Z. Slawin *J. Am. Chem. Soc.* **2009**, *131*, 16398.
4. "An Ion-Pair Template for Rotaxane Formation and its Exploitation in an Orthogonal Interaction Anion-Switchable Molecular Shuttle" M.J. Barrell, D. A. Leigh, P. J. Lusby, A. M. Z. Slawin, *Angew. Chem. Int. Ed.* **2008**, *47*, 8036.
5. "Active Template Synthesis of Rotaxanes and Molecular Shuttles with Switchable Dynamics via Four-Component Pd(II)-Promoted Michael Additions" S. M. Goldup, D. A. Leigh, P. J. Lusby, R. T. McBurney, A. M. Z. Slawin, *Angew. Chem. Int. Ed.* **2008**, *47*, 3381.