



南京大学高济宇有机化学前沿讲座

Find the Art of Chemistry!

题目: Complex systems *via* subcomponent self-assembly

报告人: Jonathan R. Nitschke
Department of Chemistry, University of Cambridge, UK

地点: 仙林化学楼 A216

时间: 2017年10月12号 (星期四) 上午10: 30

联系人: 强琚莉(jjl@nju.edu.cn), 王乐勇 (lywang@nju.edu.cn)

Email: jrn34@cam.ac.uk

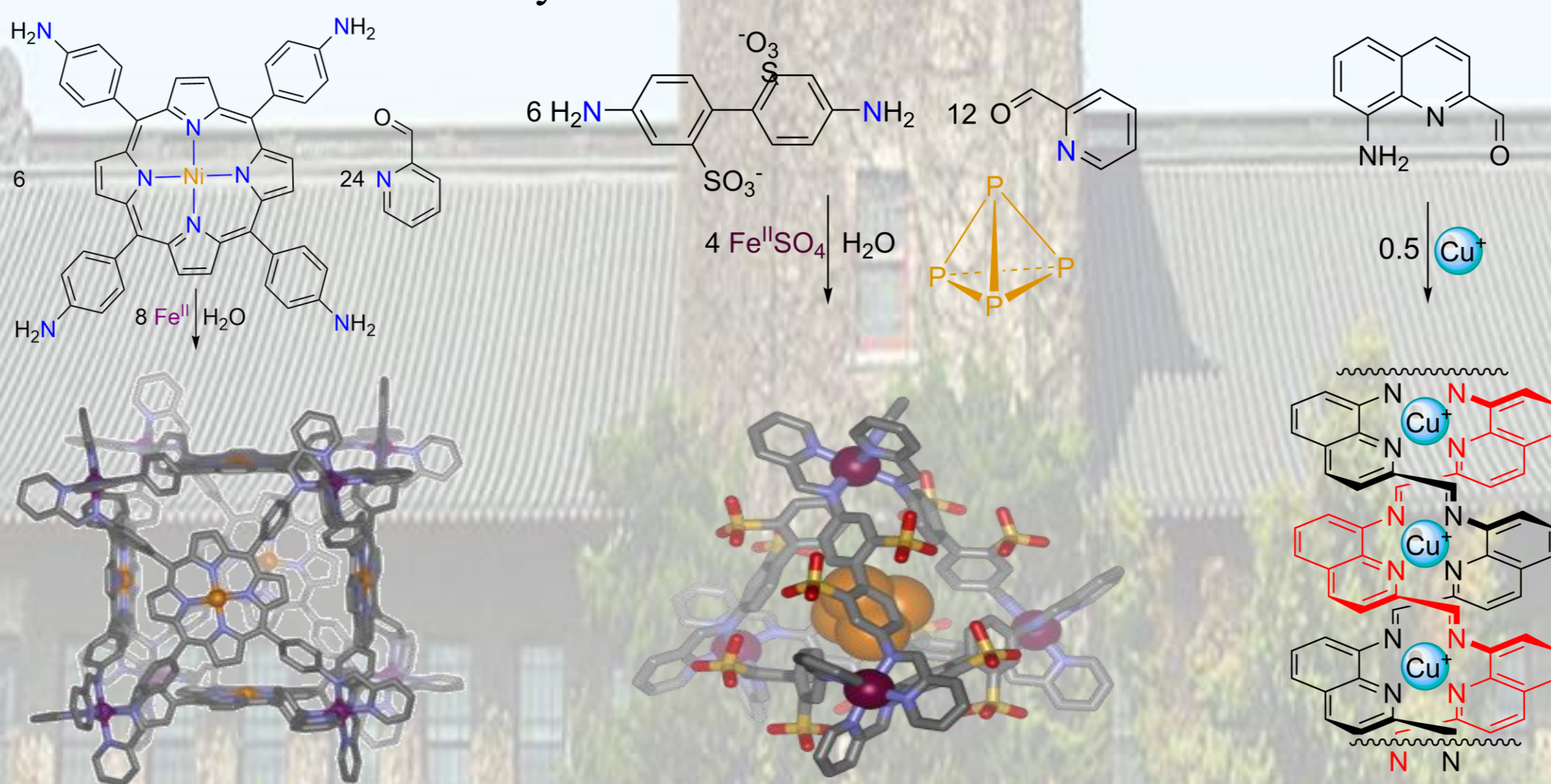
Website: <http://www-jrn.ch.cam.ac.uk>

Biography:

Jonathan Nitschke was born in 1973 in Syracuse, New York. Following undergraduate studies (Williams College, MA) and graduate studies (Berkeley, CA) in the U.S., he undertook postdoctoral studies in France, and then started an independent research career at the University of Geneva (Switzerland). The Nitschke group moved to the University of Cambridge (United Kingdom) in 2007.

Abstract:

The materials that we depend on rely upon ever-increasing structural complexity for their function. The use of chemical self-assembly as a synthetic technique can simplify materials preparation by shifting intellectual effort away from designing molecules, and towards the design of *chemical systems* that are capable of self-assembling in such a way as to express desired materials properties and functions. Below are shown the subcomponent precursors and structures of three of products that can form functional constituents of these systems.



Current challenges involve inducing multiple structures to form in parallel,⁴ such that they may act in concert to achieve a catalytic goal,⁵ our techniques allow entry into the emerging field of *systems chemistry*.⁶ Functional systems that we have recently developed include a fuel-controlled self-assembly process⁷ and a triphasic sorting system, wherein three guests are selectively encapsulated within three cages, each in turn soluble in only one of three mutually-immiscible phases (water and two different ionic liquids).⁸

Selected publications:

1. W. Meng, B. Breiner, K. Rissanen, J.D. Thoburn, J.K. Clegg, J.R. Nitschke, *Angew. Chem. Int. Ed.* **2011**, 50, 3479.
2. P. Mal, B. Breiner, K. Rissanen, J.R. Nitschke, *Science* **2009**, 324, 1697.
3. J.L. Greenfield, F.J. Rizzuto, I. Goldberga, J. Nitschke, *Angew. Chem. Int. Ed.*, **2017**.
4. A. Jiménez, R.A. Bilbeisi, T.K. Ronson, S. Zarra, C. Woodhead, J.R. Nitschke, *Angew. Chem. Int. Ed.* **2014**, 53, 4556.
5. A.G. Salles, S. Zarra, R.M. Turner, J.R. Nitschke, *J. Am. Chem. Soc.* **2013**, 135, 17052.
6. J.R. Nitschke, *Nature* **2009**, 462, 736.
7. C.S. Wood, C. Browne, D.M. Wood, J.R. Nitschke, *ACS Cent. Sci.* **2015**, 1, 504.
8. A.B. Grommet, J.L. Bolliger, C. Browne, J.R. Nitschke, *Angew. Chem. Int. Ed.* **2015**, 54, 15100.

欢迎参加!

有机化学学科

