

Paul Bolton

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Date of Birth: 28th October 1979 Nationality: British

Post-doctoral Research *09/06 to date Laboratoire de Chimie de Coordination du CNRS, Toulouse*
Supervisor: Dr Sylviane Sabo-Etienne
'Coordination chemistry: a tool for hydrogen storage and transport'

- Ruthenium dihydrogen complexes for hydrogen storage
- Iron complexes that mimic the active site of hydrogenase

Education *2002 - 2006 Wadham College, University of Oxford*
DPhil in Inorganic Chemistry
Supervisor: Professor Philip Mountford
'Synthesis and Reactivity of Cationic Titanium Imido Complexes'

- New macrocycle supported titanium imido dialkyl complexes and their catalytic activity for ethylene polymerisation
- NMR spectroscopic studies on base-free alkyl cations – agostic interactions
- Reactivity of cationic complexes with Lewis bases, unsaturated substrates and metalalkyl species (eg. AlMe₃, ZnMe₂). Alkyl group versus imido reactivity

1998 - 2002 Wadham College, University of Oxford
MChem (Hons) Chemistry, First Class
Final year project: Imido Complexes of Triazacyclic Ligands

1994 - 1998 The Robert Smyth School
'A' levels **Chemistry (A), Mathematics (A), French (A), German (A), General Studies (A)**
9 GCSEs 6 Grade A*, 3 Grade A

Other Research and Teaching Experience *10/03 – 03/06 University of Oxford*
Laboratory Demonstrator
Demonstrator in teaching laboratory, responsible for guiding groups of up to 12 students through a variety of experiments in the undergraduate practical course.

10/03 - 10/05 University of Oxford
Laboratory Mentor
Mentor to a fourth year MChem student, providing an initial grounding in the laboratory techniques required and assisting with project management.
Mentor to a first year DPhil student during his first months in the laboratory.

07/00 - 09/00 LCOMS, ESCPE Lyon, France
Summer Placement
Summer student in the research group of Dr J.-M. Basset (under the direct supervision of Dr C. Coperet). Worked in the area of Schrock alkylidene olefin metathesis catalysts.

Technical and IT Skills Proficient in the manipulation of air- and moisture-sensitive compounds using standard Schlenk line and drybox techniques. Experience of olefin polymerisation catalyst testing procedures. Hands-on experience of 1D and 2D NMR spectroscopy, having performed NMR experiments on various nuclei, nOe and spin-saturation transfer experiments, and several 2-dimensional gradient experiments. Experienced user of Microsoft Windows operating systems and software including Microsoft Office Suite and CS ChemDraw.

Publications “Discovery of highly active imidotitanium ethylene polymerisation catalysts and their evaluation using high throughput catalyst screening”, N. Adams, H. J. Arts, P. D. Bolton, D. Cowell, S. R. Dubberley, N. Friederichs, C. M. Grant, M. Kranenburg, A. J. Sealey, B. Wang, P. J. Wilson, A. R. Cowley, P. Mountford and M. Schröder, *Chem. Commun.*, 2004, 434.

“Transition metal imido compounds as Ziegler-Natta olefin polymerisation catalysts”, P. D. Bolton and P. Mountford, *Adv. Synth. Catal.*, 2005, **347**, 355.

“Well-defined imidotitanium alkyl cations: agostic interactions, migratory insertion vs [2+2] cycloaddition, and the first structurally authenticated AlMe_3 adduct of any transition metal alkyl cation”, P. D. Bolton, E. Clot, A. R. Cowley and P. Mountford, *Chem. Commun.*, 2005, 3313.

“Experimental and DFT studies of cationic imido titanium alkyls: agostic interactions and C-H bond and solvent activation reactions of isolobal analogs of Group 4 metallocenium cations”, P. D. Bolton, E. Clot, N. Adams, S. R. Dubberley, A. R. Cowley and P. Mountford, *Organometallics*, 2006, **25**, 2806.

“Imido titanium ethylene polymerization catalysts containing triazacyclic ligands”, N. Adams, H. J. Arts, P. D. Bolton, D. Cowell, S. R. Dubberley, N. Friederichs, C. M. Grant, M. Kranenburg, A. J. Sealey, B. Wang, P. J. Wilson, M. Zuideveld, A. J. Blake, M. Schröder and P. Mountford, *Organometallics*, 2006, **25**, 3888.

“Synthesis and ethylene polymerization capability of metallocene-like imido titanium dialkyl compounds and their reactions with Al^tBu_3 ”, P. D. Bolton, N. Adams, E. Clot, A. R. Cowley, P. J. Wilson, M. Schröder and P. Mountford, *Organometallics*, 2006, **25**, 5549.

“ AlMe_3 and ZnMe_2 adducts of a titanium imido methyl cation: a combined crystallographic, spectroscopic and DFT study”, P. D. Bolton, E. Clot, A. R. Cowley and P. Mountford, *J. Am. Chem. Soc.*, 2006, **128**, 15005.

“Cyclopentadienyl titanium imido compounds and their ethylene polymerization capability: control of molecular weight distributions by imido N-substituents”, C. T. Owen, P. D. Bolton, A. R. Cowley, and P. Mountford, *Organometallics*, 2007, **26**, 83.

Conferences, Courses and Oral Presentations Presentation of DPhil research to Inorganic Chemistry department, University of Oxford at Graduate Symposium April 2005.

Research Council’s GRAD course, 14th – 18th March 2005.

XXIst International Conference on Organometallic Chemistry, Vancouver, July 2004 - presented poster.