

Christopher Whiteoak

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Education and Qualifications

2006-2010 **Ph.D Chemistry, Imperial College London, Catalysis and Advanced Materials Group.**

Title: Studies on Molybdenum, Iron and Ruthenium Complexes with Tetradentate Ligands as Oxidation Catalysts.

* Prof. Vernon Gibson and Dr. George Britovsek.

- Competent with air/ moisture sensitive manipulations using standard Schlenk techniques.
- Developed synthetic chemistry skills and was able to generate a synthetic route towards novel iron(II) *bis*-(aminophenolate) and derivative complexes for testing as oxidation catalysts.
- Synthesised molybdenum(VI) *cis*-dioxo *bis*-(aminophenolate) complexes for use as catalysts for oxygen atom transfer reactions.
- Synthesised and compared the properties of ruthenium(II) complexes bearing tripyridylamine and an unusual phosphine containing derivative ligand.
- Examined all novel materials synthesised with a wide range of analytical techniques including multinuclear NMR spectroscopy and electrochemistry amongst others.
- Communication of results to colleagues at regular group meetings and a wider audience at the Imperial College Postgraduate Symposium.
- Planned, wrote and submitted quarterly reports and a thesis to deadlines.
- Supervised within the undergraduate teaching labs, identifying and solving problems and also had the opportunity to present a lecture course to undergraduate students.
- Planned and oversaw work schemes for several undergraduate research students.
- Managed procurement of materials for the entire group.

2000-2004 **MChem. (Hons.) Chemistry (2.1), University of York.**

Dissertation project: Transition Metal Catalysed Pulp Bleaching.

- Lecture and lab courses in fundamental aspects of Inorganic, Physical and Organic chemistry.
- Industrial placement in the fourth year.
- Completed a dissertation containing a summary of the results obtained during the placement.

Career Details

2010- present **Post-doctoral Researcher, Laboratoire de Chimie et procédés de polymérisation, ESCPE Lyon, France.**

* Dr. Roger Spitz and Dr. Christophe Boisson.

- Project sponsored by Ineos Olefins and Polymers Europe.
- Working on a project to develop new activating supports for olefin polymerisation.
- Synthesis of silica supported compounds using standard Schlenk techniques and subsequent slurry phase polymerisation testing.

2004-2006 **Research Scientist, Unilever Research and Development Port Sunlight**

- Working within the laundry research category to improve the performance of current products.
- Identified and progressed new potential transition metal complexes for bleach catalysis towards development stage.

- Developed and implemented a new procedure for evaluation of potential catalysts.
- Generated and interpreted large amounts of data obtained from high-throughput experiments for catalyst optimisation.
- Provided structure reactivity relationships using electrochemistry, with results leading to design of second generation catalysts.
- Attended courses in areas such as business awareness, presentation skills and the Southampton University Electrochemistry Summer School.
- Established collaborations with academic and industrial partners.
- Results helped deliver four patent applications and one journal publication.
- Liaised between the group's different sites in the Netherlands and China.

2003-2004 Industrial Placement, Unilever Research and Development Vlaardingen, the Netherlands.

* Dr. Ronald Hage.

- Worked within the Laundry development team.
- Development of a novel use for an existing technology.
- Presented my findings to our industrial partners at a technology meeting in Helsinki.

Publications and Patents

Frantz, S.; Wendland, O.; Roduner, E. **Whiteoak, C. J.**; Batchelor, S.N.; Effect of Charge on Spin Probe Interaction and Dynamics in the Nanopores of Cotton, *J. Physical Chem. C*, **111**, 14514 (2007).

Helton, M. E.; Parry, M. L.; **Whiteoak, C. J.**; Woolfall, M. P.; Bleaching Composition, WO 2006133773(A1) (2007).

Helton, M. E.; Parry, M. L.; **Whiteoak, C. J.**; Woolfall, M. P.; Bleaching Composition, WO 2006133790(A1) (2007).

Batchelor, S. N.; Dixon, S.; **Whiteoak, C. J.**; Laundry Composition, WO 2007147698(A1) (2008).

Poster presentation at the International Symposium on Homogeneous Catalysis XVI, Florence – Electronic Effects in Oxo-transfer Reactions Catalysed by Molybdenum (VI) *cis*-dioxo Salan complexes (July 2008).

Whiteoak, C. J.; Britovsek, G. J. P.; Gibson, V. C.; White, A. J. P.; Electronic Effects in Oxo-Transfer Reactions Catalysed by Salan Molybdenum (VI) *cis*-dioxo Complexes, *Dalton Trans.*, 2337 (2009).

Batchelor, S. N.; Dixon, S.; Parry, M. L.; **Whiteoak, C. J.**; Shading Dye and Catalyst Composition, EP 2228429(A1) (2010).

Whiteoak, C. J.; Torres Martin De Rosales, R.; White, A. J. P.; Britovsek, G. J. P.; Iron(II) Complexes with Tetradentate *Bis*-(aminophenolate) Ligands: Synthesis and Characterization, Solution Behaviour and Reactivity with O₂, *Inorg. Chem.*, 49 (23), 11106, 2010.

Skills

Languages Learned basic Dutch whilst working in Holland and currently gaining experience in French.
Driving Licence Full clean UK licence.

Interests

Sport Enjoy playing squash and regularly play football. Keen swimmer and during my degree I worked as a part-time pool lifeguard.
Travel Have organised and budgeted many independent travel trips over the past few years.

References

Available upon request.
