

# Resume

# Dr. Christopher Wilson

Research Scholar – Department of Chemistry University of Pennsylvania

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## Objective

To contribute a strong background in synthetic chemistry and self-assembly to a highly motivated and successful multi disciplinary research group, and consequently undertake significant research to solve essential problems of importance both commercially and academically.

## Professional Profile

- Synthetic organic chemist with specific skills in organic methodology and rational design of biologically inspired complex systems in condensed matter.
- Skilled experimentalist with extensive knowledge of instrumentation essential to structural characterization, purity determination and investigation of self-organized complex systems.
- Resourceful and creative problem-solver with proven aptitude to design and implement appropriate and effective experimental procedures in result and solution driven environments.
- Articulate communicator with a passion to learn. Exceptional interpersonal skills adept at delivering essential information to audiences speaking the language of both people and technology.
- Proven excellence in teaching and evaluation of students with experience demonstrating essential skills in synthetic organic chemistry to classes of 50 students at undergraduate level and direct supervision of 8 masters level students.

## Experimental Expertise

- Synthetic organic methodology
- Synthetic organic chemistry
- Porphyrin and dipyrin synthesis
- Liquid crystalline materials
- Iterative synthesis dendron synthesis
- Semifluorinated dendron synthesis
- Inert atmosphere catalyst synthesis
- Nickel catalysed biaryl coupling
- Preparation of vesicles and micelles
- Basic tissue culture
- Cell viability
- Vesicle and micelle drug loading

## Instrumental Expertise

- NMR – Bruker; Jeol
- HPLC – Gillson; JASCO
- GPC – Viscotek; PerkinElmer
- GC – Agilent; Varian
- MALDI-TOF – Bruker; Perceptive Bio
- UV-Vis – Agilent
- DSC – PerkinElmer; Mettler; TA
- DLS/QELS – Viscotek; Malvern;
- MALS - Wyatt
- OPM
- Fluorescence - Amnico-Bowman; Jobin-Yvon
- SAXS/WAXS – MAR

## Professional Experience

- Referee: *Journal of Polymer Science Part A: Polymer Chemistry* 2008-2009.
- Research Scholar: University of Pennsylvania, PA, USA Prof Virgil Percec 2007-Present.
- PhD Student: University of Hull, UK Dr. Ross Boyle and Dr. Georg Mehl 2004-2007.  
Thesis: “*Design and investigation of porphyrin containing liquid crystals*”
- QA/QM Chemist: *Degussa Fine Organics*, Rotherham 2003

## Education and Training

- Doctoral Degree: PhD *Synthetic organic and materials chemistry*, University of Hull, UK
- Masters Degree: MChem *Drug Design and Toxicology*, University of Hull, UK
- Training Course: GPC and DLS *Viscotek*, Manchester, 2007
- Training in X-ray Diffraction of Soft Matter Prof. Paul Heiney University of Pennsylvania
- Post Graduate Training Scheme: PGCert, University of Hull, UK 2004-2007
- Associate member: Royal Society of Chemistry, 2004-2007

## Peer Reviewed Publications

- Neopentylglycolborylation of Aryl Mesylates and Tosylates catalyzed by Ni-Based Mixed Ligand Systems Activated with Zn. Wilson, D. A.; Wilson, C. J.; Moldoveanu, C.; Resmerita, AM.; Corcoran, P.; Hoang, L.; Rosen, B. M.; Percec, V. **J. Am. Chem. Soc** *In Press*
- Predicting the Structure of Supramolecular Dendrimers via the Analysis of Libraries of AB<sub>3</sub> and Constitutionally Isomeric AB<sub>2</sub> Biphenyl Propyl Ether Self-Assembling Dendrons. Rosen, B. M.; Wilson, D. A.; Wilson, C. J.; Peterca, M.; Won, B. C.; Huang, C.; Lipski, L. R.; Zeng, X.; Ungar G.; Heiney, P. A.; Percec, V. **J. Am. Chem. Soc.** 2009, 47, 17500-17521
- Neopentylglycolborylation of Aryl Chlorides Catalyzed by the Mixed Ligand System NiCl<sub>2</sub>(dppp)/dppf. Moldoveanu, C; Wilson, D. A.; Wilson, C. J.; Corcoran, P.; Rosen, B. M.; Percec, V. **Org. Lett.** 2009 11 4974-4977. **Highlighted in SynFacts** 2010, 1. 0084
- The Disproportionation of Cu(I)X Mediated by Ligand and Solvent into Cu(O) and (Cu(II)X<sub>2</sub>) and its Implications for SET-LRP. Rosen, B. M.; Jiang, X.; Wilson, C. J.; Nguyen, N. H.; Monteiro, M. J.; Percec, V. **J. Polym. Sci. Part A: Polym. Chem.** 2009 47, 5606-5628.
- Dendron Mediated Self-Assembly, Disassembly and Self-Organization of Complex Systems. Rosen, B. M.; Wilson, C. J.; Wilson, D. A.; Peterca, M.; Imam, M.; Percec, V. **Chem. Rev.** 2009 109, 6275-6540
- Two-Step, One-Pot Ni-Catalyzed Neopentylglycolborylation and Complementary Pd/Ni-Catalyzed Cross-Coupling with Aryl Halides, Mesylates, and Tosylates. Wilson, D. A.; Wilson, C. J.; Rosen, B. M.; Percec, V. **Org. Lett.** 2008, 10, 4879-4882. - **Highlighted in SynFacts** 2009, 2. 0191
- Mesogenic Dipyrins - Building Blocks for the Fabrication of Fluorescent and Metal-Containing Materials. Wilson, C. J.; James, L.; Mehl, G. H.; Boyle, R. W. **Chem. Commun.** 2008, 4582-4584.
- Synthesis and Structural Characterization of Novel Bimetallic Dipyrromethene Complexes: Rotational Locking of the 5-Aryl group. Sutton, J. M.; Rodgerson, E.; Wilson, C. J.; Sparke, A. E.; Boyle, R. W.; Archibald, S. J. **Chem. Commun.** 2004, 1328.

## Patents

Process for the Preparation of Biphenyl Compounds – **WO 2009 137322**.

Amphiphilic Janus-Dendrimers. **US Patent Pending Appl. No. 61/231,840**.

## Scholarships and Awards

- Wellcome Trust Scholarship: *Novel Cationic Porphyrins as Potential Photosensitizers*, 2002
- EU Post Graduate Scholarship: Presentation of PhD results *DENSOM*, Strasbourg, 2006