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Dr Paul Davies

Senior Lecturer in Synthesis and Catalysis

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About

Paul Davies is a Senior Lecturer who runs an active research group focused in the areas of synthesis and catalysis. For more information on his research, please visit the **Davies Group webpages (/research/activity/chemistry/Davies/index.aspx)** .

Qualifications

- PhD in Chemistry 2003, Bristol University
- MChem in Chemistry with Year In Industry 1999, University of Sheffield
- Member of the Royal Society of Chemistry (MRSC

Biography

After completing his PhD at Bristol in 2003 under the supervision of Professor Varinder Aggarwal (FRS), Paul then moved to the Max Planck-Institut für Kohlenforschung (Mülheim, Germany) working with Professor Alois Fürstner. In 2006, Paul was appointed Lecturer in Organic Chemistry at the University of Birmingham. He was promoted to Senior Lecturer in 2012.

Teaching

Paul teaches on core courses at all levels of the undergraduate BSc and MSc Chemistry programme in a variety of styles including small group tutorials, practical classes, medium sized workshops, full lectures and seminars, whole-group problem and feedback sessions as well as undergraduate teaching laboratory supervision.

- CHM1C3: Structure, Representation and Isomerism, Year 1 core module;
- CHM2C3: Synthesis and Mechanism; Reactive Intermediates; Year 2 core module;
- CHM3: Organic Chemistry Distance learning The Chemistry of Medicinally Active Compounds;
- CHM4M2-I: Total Synthesis of Natural Products; Transition-Metal Catalysis; Year 4 option module;

Postgraduate supervision

Paul has an active research group consisting of a vibrant multinational mixture of master and doctoral researchers alongside postdoctoral research fellows. Current members are from France, Germany, Greece, India, Nigeria, Spain and the UK.Paul is interested in supervising doctoral research students across the following broad areas:

- Catalysis based reaction discovery and development
- Design of functionalised catalysts
- Target applications of catalysis

For a full list of available Doctoral Research opportunities, please visit our **Doctoral Research programme listings (http://www.birmingham.ac.uk/students/courses/postgraduate/findaphd.aspx/)** .

Research

Research Interests

- Transition-Metal Catalysis [Au, Ag, Pt, Pd, Ru...]
- Organic Synthesis
- Cycloisomerisations
- Cascade Reactions
- Accessible Complexity
- Synthesis of Biologically Relevant Materials
- Organometallic Chemistry
- Molecular Recognition
- Organocatalysis

Our research activities are centred in synthetic organic chemistry and involve (i) the development of novel methodology, (ii) the design of new catalyst systems and (iii) the target driven synthesis of biologically relevant materials. By developing new transformations and more general reactions we aim to offer more efficient and elegant synthetic routes, thus reducing the time, effort, cost and waste associated with the preparation of complex molecules. With catalytic methods being ideally suited to the task of imparting novel reactivity and high selectivity under mild conditions their use is integral to our work. Projects involving organic synthesis, transition-metal catalysis, organocatalysis and organometallic chemistry are available.

Further information at the **Davies research group (/research/activity/chemistry/Davies/index.aspx)** web pages.

Other activities

- Member of the Young Chemists Panel, Society of Chemical Industry
- Member of the Royal Society of Chemistry

Publications

Selected Recent Publications

- **Intermolecular and Selective Synthesis of 2,4,5-Trisubstituted Oxazoles by a Gold-Catalysed Formal [3+2] Cycloaddition (http://dx.doi.org/10.1002/anie.201103563)** P. W. Davies,* A. Cremonesi, L. Dumitrescu, *Angew. Chem. Int. Ed.* **2011**, *38*, 8931-8935.
- **Site-specific introduction of gold-carbenoids by intermolecular oxidation of ynamides or ynol ethers (http://pubs.rsc.org/en/Content/ArticleLanding/2011/CC/C0CC02736G)** P. W. Davies,* A. Cremonesi, N. Martin, *Chem. Commun.* DOI: 10.1039/C0CC02736G
- **Gold or Platinum-Catalysed Synthesis of Sulfur Heterocycles: Access to Sulfur Ylides Without Using Sacrificial Functionality (http://www3.interscience.wiley.com/journal/122609617/abstract)** P. W. Davies,* S. J. C. Albrecht, *Angew. Chem. Int. Ed.* **2009**, *48*, 8372-8375.
- **Counterion Effects in a Gold-Catalysed Synthesis of Pyrroles from Alkynyl Aziridines (http://pubs.acs.org/doi/abs/10.1021/ol900609f)** P. W. Davies,* N. Martin, *Org. Lett.* **2009**, *11*, 2293-2296.
- **Alkynes as Masked Ylides: Gold-Catalysed Intermolecular Reactions of Propargylic Carboxylates with Sulfides (http://www.rsc.org/publishing/journals/CC/article.asp?doi=b714813e)** P. W. Davies,* S. J. C. Albrecht, *Chem. Commun.* **2008**, 238-240.
- **Catalytic Carbophilic Activation: Catalysis by Platinum and Gold Π-Acids (http://www3.interscience.wiley.com/journal/114209468/abstract)** A. Fürstner,* P. W. Davies,* *Angew. Chem. Int. Ed.* **2007**, *46*, 3410-3449

Expertise

The construction of organic molecules; use of catalysis to design new strategies to build molecules; pharmaceutical development.

Alternative contact number available for this expert: **contact the press office (http://www.birmingham.ac.uk/news/contacts/index.aspx)**

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