

Essential Catalysis

Practical Processes for Organic Synthesis

Who Should Attend?

Process Chemists wishing to maximise their knowledge and understanding of catalysis being applied in organic synthesis

Medicinal Chemists wishing to keep their contemporary synthetic chemistry know-how at the cutting edge

Production Chemists wishing to maintain their awareness of emerging catalytic chemical technologies

Analytical Chemists who wish to gain a broader appreciation of organic chemistry

Chemical Engineers wishing to maintain their awareness of emerging catalytic technologies

Experienced Chemists looking to refresh and/or augment their knowledge of catalytic organic synthesis

Students who are about to enter industry or post-graduate research and can obtain company sponsorship

Young Chemists who have just started work in industry as organic chemists

Managers who might benefit from an overview of the latest chemical technology available for use in the pharmaceutical, fine chemical and allied industries today

Outline

Introduction to Practical Catalysis

"Understanding the black box" : Tools for Organometallic Chemistry

Catalytic C-C bond Forming Processes for Organic Synthesis

Pd and Cu catalysed C-X Bond Forming Processes

Hydrogenation

Metathesis as a Practical Tool for Synthesis

The Catalytic Synthesis and Modification of Heterocycles

Biocatalysis as a Tool for Organic Synthesis

Organocatalysis

Emerging Areas in Catalysis for Organic Synthesis

Case Studies – Practical Applications of Catalysis in Industry

Problem sessions

Tutors

Christopher Frost received his BSc (Hons) degree from Loughborough University. In 1994 he was awarded a PhD for his thesis 'Novel Enantiopure Ligands for Asymmetric Palladium Catalysed Allylic Substitution Processes'. Following a post-doctoral fellowship at the University of Texas at Austin working towards the total synthesis of the anti-tumour drug Taxol, he returned to the UK to join the Chemistry Department at the University of Bath. Since then, he has built a research group with interests in the fields of catalysis applied to organic synthesis, specifically the development of the new C-C and C-X bond-forming processes. He has published over 50 papers and has presented more than 30 invited lectures at conferences, universities and companies in the UK, India, Singapore, Europe and the USA. He is a member of the editorial board of Bentham's Science Journal 'Mini-Reviews in Organic Chemistry' and is a UK representative to the management committee of COST Action D40 'Innovative Catalysis'. c.g.frost@bath.ac.uk

Joe Harrity obtained his BSc from the University of Strathclyde. Following a post-doctoral research fellowship at Boston College with Prof. Amir Hoveyda, he was appointed to a lectureship at the University of Sheffield in 1997 (promoted to Reader in 2007). His research interests are largely based around the development of synthetic methodology for the efficient synthesis of important or complex structural motifs. The group have been heavily involved in the development of new carbon-carbon bond forming reactions and the application of these techniques in natural

Practical Catalysis is a two-day course comprising lectures and problem sessions designed to illustrate how state-of-the-art catalytic methods can be applied to practical issues in small molecule synthesis.

The content will focus on problems and targets relevant to pharmaceutical and agrochemical interests. An emphasis will be placed on practical solutions.

Topics covered will include: Pd and Cu catalysed C-C and C-X bond forming processes; Rh catalysed conjugate additions; metathesis as a practical tool; catalysis in heterocycle modification and synthesis; emerging areas in catalysis.

Register 2 attendees and **SAVE 5%**
Register 3 or more attendees and **SAVE 15%**

product synthesis, for which he was awarded the Pfizer discovery Academic Award in 2004 and the AstraZeneca Award in 2006.

j.harrity@sheffield.ac.uk

Michael Willis obtained his first degree in 1992 from Imperial College of London. He then moved to the University of Cambridge to continue working with S.V. Ley on his PhD 'Studies Towards the Synthesis of Rapamycin'. He carried out post-doctoral studies with Prof. David Evans in the Department of Chemistry at Harvard University, where his research was concerned with new applications of chiral C₂-symmetric copper (II) Lewis acid catalysts. He was appointed to a lectureship at the University of Bath in November 1997 and from January 2007 has been based at the University of Oxford. He has been an EPSRC Advanced Research Fellow since October 2005. His research is focused on the development and application of catalytic processes to organic synthesis, and has included the development of enantioselective palladium catalysed coupling reactions, palladium catalysed heterocycle synthesis and new rhodium catalysed C-C bond forming processes.

michael.willis@chem.ox.ac.uk

Trevor Laird gained his PhD from London University in Organic Photochemistry and completed 3 years post doctoral studies with Professor W.D. Ollis at Sheffield on sigmatropic rearrangements. He spent 5 years at ICI Corporate Laboratory at Runcorn, designing organic molecules for use in electronics and solar energy,

whilst also acting as Safety Advisor. In 1977 he moved to ICI Organics in Manchester, examining new synthetic routes to Agrochemicals, followed by development, optimisation and scale-up to pilot plant and transfer to production facilities. In 1979 he moved to SmithKline French, Tonbridge (now part of GlaxoSmithKline) where he was eventually in charge of Process Development, being responsible for the design, development and scale-up of processes for the manufacture of SK & F's new drug candidates. In 1989 he left SK & F to set up Scientific Update.

He has published extensively and has contributed chapters to Comprehensive Organic Chemistry and to Open University texts. He has also completed a review of "Development and Scale-Up" for Comprehensive Medicinal Chemistry. He has been involved with conference organising for the Society of Chemical Industry. He is the editor of the ACS journal "Organic Process Research and Development", launched in 1997.

trevor@scientificupdate.co.uk

Fees

Fee includes lunch & refreshments, course dinner and course manual.

Accommodation

Scientific Update use high quality venues around the world. Preferential room rates including bed & breakfast are usually available.

Please check the Course Schedule on our website for venues, dates and availability.