Professor Guy C. LLOYD-JONES

Studies of the Mechanism of Metal-Mediated Reactions: Using Labels to Define What Goes Where and When

The Bristol Centre for Organometallic Catalysis, School of Chemistry, University of Bristol, Cantock's Close, Bristol, BS8 1TS, UK
Email: Guy.Lloyd-Jones@bristol.ac.uk

Organometallic chemistry – and especially transition metal catalysis – has revolutionised the practise of organic synthesis and is a field that continues to evolve at an astonishing rate. The huge variety of organometallic species, both in terms of structure and reactivity, is the very backbone that provides such a glittering array of organic transformations. Associated with this variety is a great diversity of reaction mechanism – much of which remains explored. At Bristol we have been interested in a number of transformations, such as allylic alkylation (W, Mo, Pd), cycloisomerisation (Pd, Ni, Rh, Ru), hydrosilyation and hydroboration (Rh, Pd), methathesis (Ru), arynegeneration (Li), cyclopropanation (In), epoxidation (Mn), and alkene diamination (Pd, Pt). Recent highlights from our investigations into some of these processes will be presented, with an emphasis on the use of stable isotopes to facilitate desymmetrisation and thus open a window for probing 'what goes where and when'.