

eNHChanting new chemistry with Cu and Zn

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N-heterocyclic carbene (NHC) ligands have changed the face of organometallic chemistry in the last 10-20 years. Although five-membered Arduengo-type ligands continue to be the NHCs of choice for most applications, there have been many efforts to prepare derivatives with different stereoelectronic properties. NHCs based on six- and seven-membered ring structures (so-called ring-expanded carbenes) offer a wider variation of both σ -donor/ π -acceptor properties and steric bulk, thereby allowing even more 'tuneability' of the coordination sphere of a metal centre. This talk will discuss how recent results on Ni has led onto studies with Cu and subsequently Zn that have illustrated some very unexpected properties of metal coordinated large ring carbenes.



Mike Whittlesey completed his D Phil in organometallic photochemistry at the University of York in 1991, before going on to post doctoral appointments at the Universities of Ottawa, Canada (1991-1993) in organic photochemistry and York (1993-1996) in synthetic transition metal chemistry. Following a position at the University of East Anglia, he moved to a Lectureship in Inorganic Chemistry at the University of Bath in 1999, progressing through the ranks to Senior Lecturer (2003), Reader (2008) and full Professor in 2011.

His research interests lie in the area of organometallic and coordination chemistry of the late transition metals (particularly Ru) with N-heterocyclic carbene (NHC) ligands. Over the last 12 years, his group has unearthed examples illustrating the ability of Ru-NHCs to participate in both intramolecular and intermolecular activation chemistry of inert C-C, C-H, C-N and C-F bonds. In the last few years, a new focus has been the chemistry of elements to the right of group 8 containing large-ring NHCs.