f-block complexes for multiple electron reductive activation; two metals are better than one

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The activation of small, traditionally inert molecules by metal complexes contributes to our fundamental understanding of metal-ligand bonding and can open up new areas of catalysis. We recently reported the first molecules that combine two strongly reducing U\textsuperscript{III} or Np\textsuperscript{III} centres in the same molecule, using pyrrole-based macrocycles. Here, we will present new 4f- and 5f-metal complexes of these, and their binding and reductive activation of small molecules. We will compare their reactivity and present new alternative O-donor systems that can support two-metal-based small molecule reactivity and homogeneous catalysis.

References