HETEROBIMETALLIC COMPLEXES OF RARE-EARTH AND LATE TRANSITION METALS

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The chemistry of complexes featuring both early and late transition metals provided insight into aspects such as metal-metal interaction and cooperative reactivity. In contrast to the early transition metals, the elements of the f-block have received significantly less attention. Previous examples were reported by the groups of Kempe, Roesky, Lu.[1-5]

In this contribution, our recent work on heterobimetallic complexes will be presented, in which we explored combinations of rare-earth with group 10 and 11 metals, respectively. Based on previous actinide/group 10 metal complexes using phosphino-aryloxide ligands, we investigated the metal-metal interaction observing situations ranging from electrostatic interaction to intermetallic bonding (Figure 1).[6] Furthermore, we explored the chemistry of heterobimetallic compounds based on our recently reported phosphine-functionalised indenly rare-earth metal complexes (Figure 1).[7] Here, we also investigated the catalytic activity of the heterobimetallic compounds. For instance, the catalytic oligomerisation of alkynes by rare-earth metal/nickel complexes.

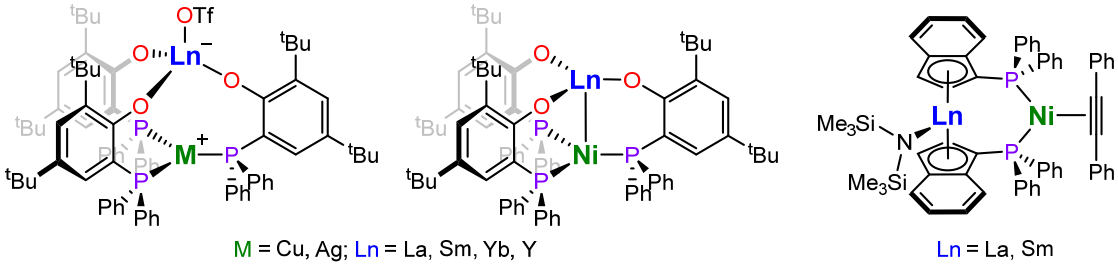

Figure 1: Selected examples of heterometallic rare-earth/transition metal complexes.

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