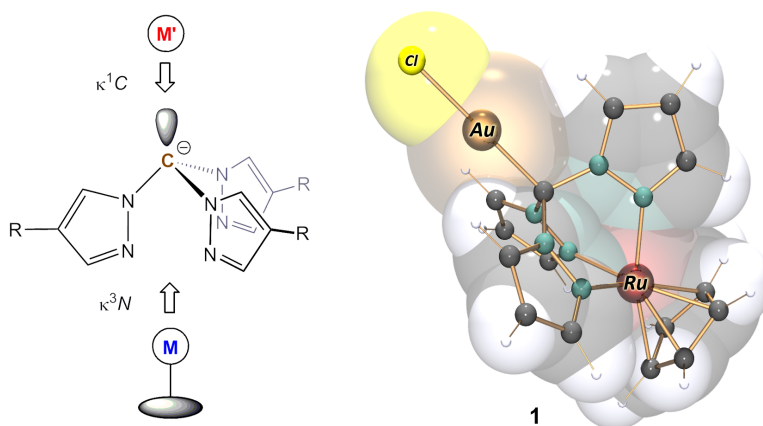


## Bimetallic Complexes with Ambidentate Tris(pyrazolyl)methanide Ligands

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There is a growing interest in multidentate ligand systems featuring dual functionality.<sup>[1]</sup> The modification of “classical” chelating ligands by implementing additional coordination sites furnished novel flexible ambidentate ligand systems. One of our research areas centre around the organometallic and coordination chemistry of ambidentate Janus-head type Tris(pyrazolyl)methanide ligands (<sup>R</sup>Tpmd).<sup>[2]</sup>



These ligands facilitate the syntheses of bimetallic complexes of the general formula  $[M'(\mu\text{-}^R\text{Tpmd})M]$  by employing two topologically distinguishable coordination sites. While the  $\kappa^3N$ -donor pocket of the ligand favours transition metals such as ruthenium(II),<sup>[3]</sup> the “soft” outward-pointing carbanion lone-pair of electrons preferably coordinates to late transition metal fragments such as  $[AuCl]$  (see **1**) in a  $\kappa^1C$  manner. These bimetallic systems are interesting for applications in homogeneous Au-catalysis. Our aim is to examine how the  $\kappa^3N$ -coordinated redox-active metal (*i.e.* Ru in **1**) influences and supports the activity and reactivity of the catalytically active gold atom. In particular, we are interested in fundamental aspects contributing to cooperative effects in bimetallic complexes.

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