Two chelating worlds combined – bimetallic complexes of d/f metal ions with PNP/PNC ligands and Schiff bases

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Bidentate PNP/PNC ligands are well-established in coordination chemistry, mainly because of their ability to form stable chelate rings and the possibility to vary chalcogen donor sites as well as organic substituents at P/C atoms.[1, 2] Similarly, multidentate salen-type ligands containing oxygen and nitrogen donor sites provide suitable coordination sphere and steric flexibility for binding transition metal ions.[3] We decided to combine these two realms of chelating ligands to prepare bimetallic compounds from transition metal and lanthanide ions. We present here structures and properties of the bimetallic complexes featuring various ligand combinations and stoichiometries.

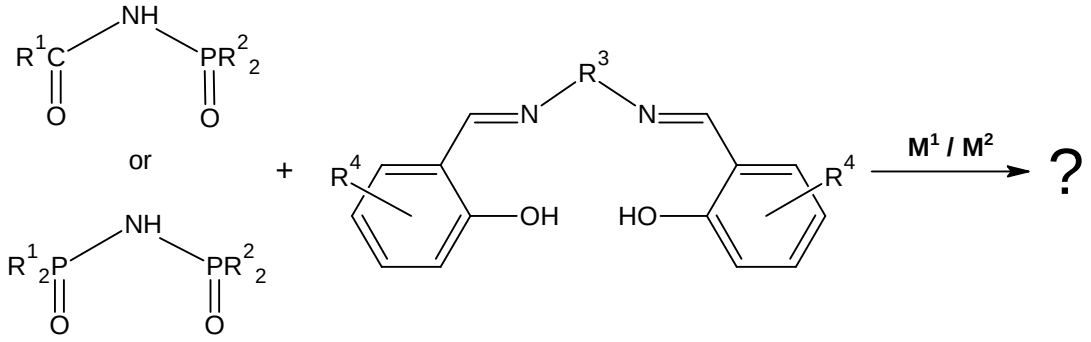

Figure 1. Synthesis of d/f complexes with PNP/PNC and salen-type ligands.

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References:

[1] Birdsall, D. J.; Slawin, A. M. Z.; Woollins, J. D., *Polyhedron*, **2001**, *18*, 125.

[2] Necas, M.; Foreman, M. R. J.; Marek, J.; Woollins, J. D.; Novosad, J., *New J. Chem.*, **2001**, *25*, 1256.

[3] Lam, F.; Xu, J.-X.; Chan, K. S., *J. Org. Chem.*, **1996**, *61*, 8414.