Rare-earth complexes for catalytic formation of C-C, C-N and C-P bonds

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Rare-earth complexes proved to be efficient catalysts for a wide range of conversions of unsaturated substrates (polymerization, hydroamination, hydrosilylation, hydroboration etc). Design of new ligand systems suitable for coordination to rare-earth metals and providing control of their reactivity, catalytic activity/selectivity and investigation of the structure-reactivity relationships are in the focus of our studies. The synthesis of alkyl, hydrido, amido rare-earth complexes supported by various N,N-, N,N,O-, N,N,P(O)-ligands and their catalytic activity in isoprene polymerization, olefin hydroamination and hydrophosphination will be reported.