NON-INNOCENT LIGANDS AS A REDOX SWITCH FOR COPOLYMERIZATION REACTIONS

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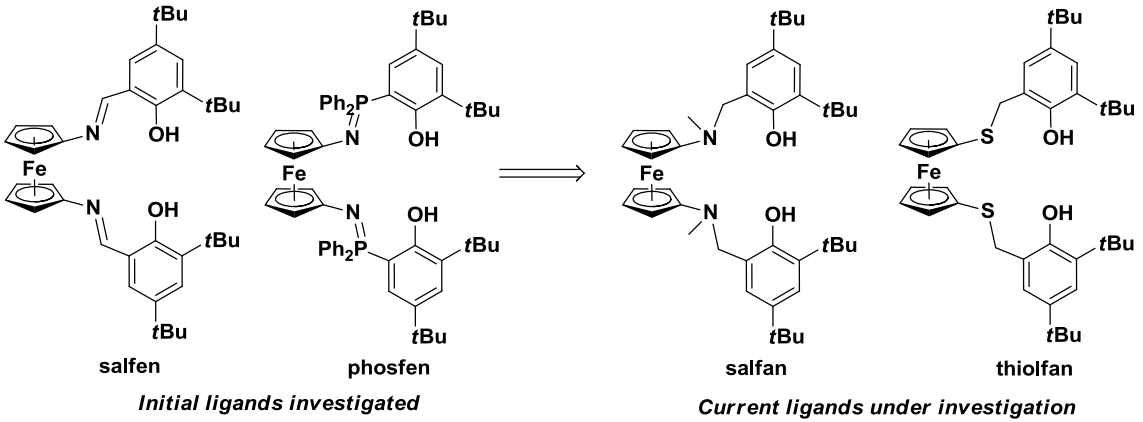
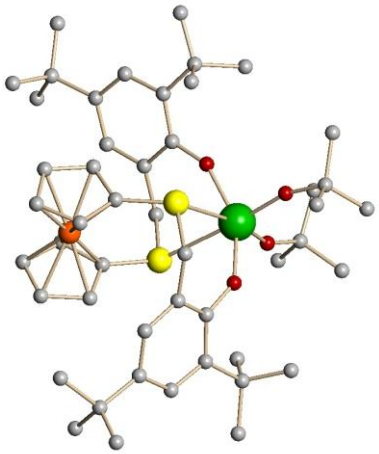
Development of new supporting ligands

Reported ferrocene-supported complexes suffer from poor activity in olefin polymerizations.



Initial ligands investigated

Current ligands under investigation



Proof of concept

Proof of concept was demonstrated for a Zr bis(*t*-butoxide) complex: the reduced-ferrocene complex polymerizes lactide, while the oxidized-ferrocene complex polymerized ethylene oxide. This activity is orthogonal, i.e. each catalyst reacts with only one monomer when both monomers are present.