

## Pentaphosphaferrocene – A Versatile Building Block

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Polypnictogen complexes are an important class of compounds. They are commonly synthesized by using white phosphorus or yellow arsenic and other sources as starting materials. Because of the lone pairs at the pnictogen atoms, they are able to self-assemble with Lewis-acidic transition metal moieties. Especially the five-fold symmetric  $P_5$  ring of the pentaphosphaferrocenes  $[Cp^RFe(\eta^5-P_5)]$  enables these complexes for unique supramolecular aggregations to form unprecedented giant spherical molecules (Figure 1, left).[1,2] Moreover, it represents a sandwich complex with a flexible redox and substitution behavior (Figure 1, right),[3] different from the one of the carbon-based analog ferrocene. Nucleophilic and/or electrophilic modifications of this five-membered ring enable this complex to become an extremely useful starting material for various preparative directions. Furthermore, the expansion of the applied synthetic concepts to other polypnictogen ligand complexes will be presented, especially the generation of aromatic *cyclo*- $E_nR$  ligand complexes ( $E = P, As$ ).[4]

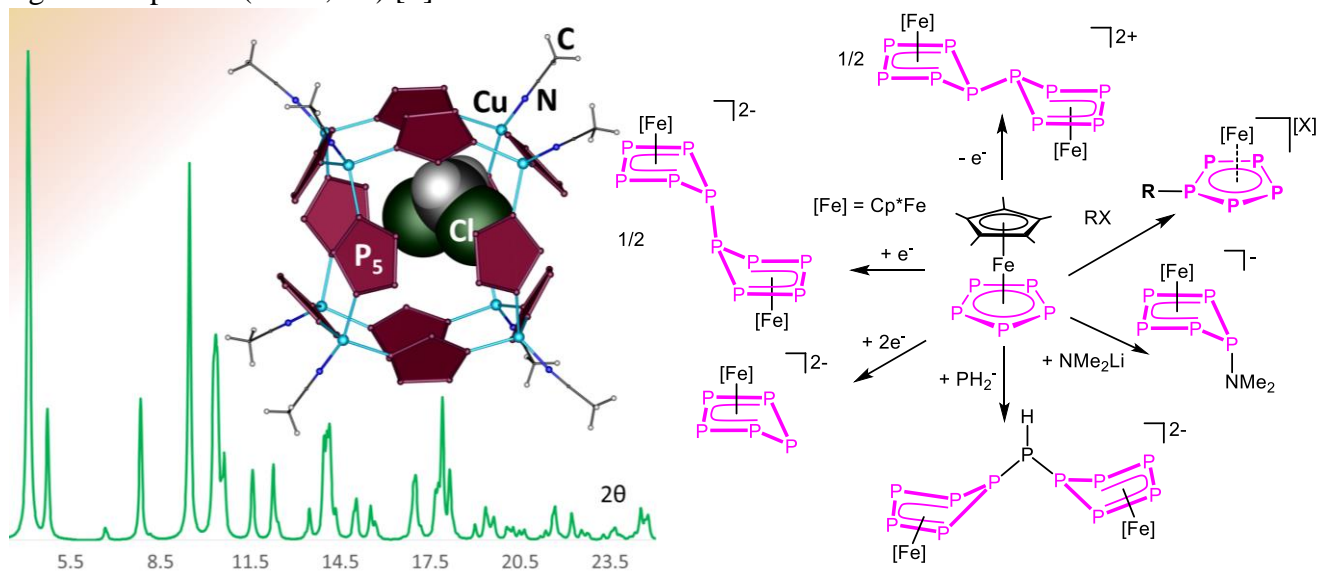


Figure 1. Versatile reactivity of  $[Cp^RFe(\eta^5-P_5)]$ : left) most metal-deficient supramolecule; right) redox reactions and products of nucleophilic and electrophilic attacks

### References

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