A Chiral Phosphorus-Containing O,C-Coordinating Ferrocene Ligand and its Organotin Derivatives: Synthesis and Reactivity

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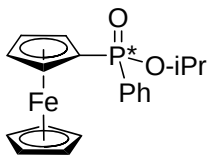
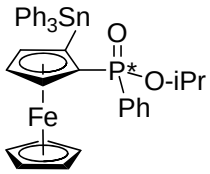
In context with our ongoing interest in phosphorus-containing donor ligands[1-3] we report the synthesis of the chiral ferrocene derivative **1**, as its racemate. This ferrocene ligand can easily be metallated by the reaction with *t*–BuLi/KO*t*Bu and, by reaction with triphenyltin chloride and diphenyltin dichloride, respectively, transformed into the organotin compounds **2** and **3**. Compound **2** was functionalized at the tin atom by the reaction with iodine to provide the corresponding organotin iodides **4** – **6**. Most remarkably, the reaction of compound **3** with iodine exclusively gave the trioganostannylium triodide **7** rather than the diorganotin diiodide $[FcP(O)R_2]_2SnI_2$.



1



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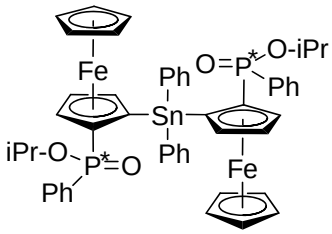

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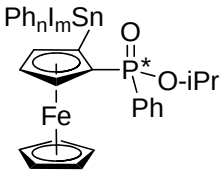
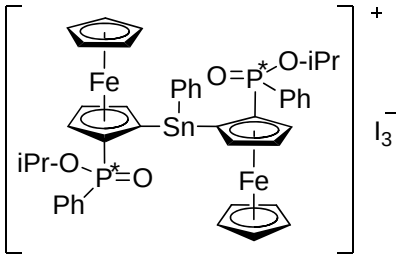


4: n=2, m=1
5: n=1, m=2
6: n=0, m=3



7

All compounds are characterized by *state of the art* analytical methods.

Literature

[1] Fischer, J., Schürmann, M., Mehring, M., Zachwieja, U., Jurkschat, K., *Organometallics*, **2006**, *25*, 2886. [2] Dannappel, K., Nienhaus, R., Schürmann, M., Costisella, B., Jurkschat, K., *Z. Anorg. Allg. Chem*, **2009**, *635*, 2126. [3] V. Deaky, M. Schürmann, K. Jurkschat, *Z. Anorg. Allg. Chem.*, **2009**, 635, 1380.