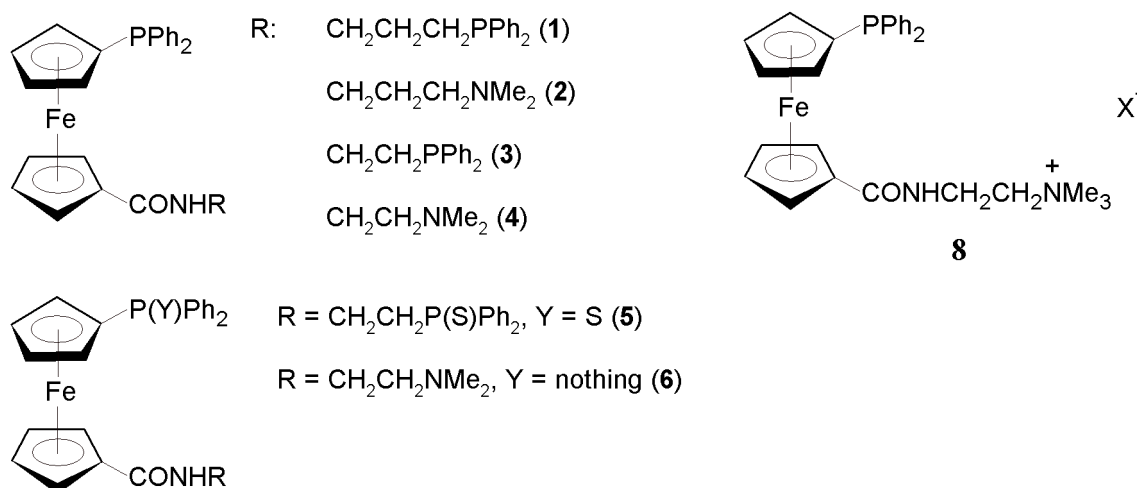


Abstract

Functionalized amides **3** and **4** were prepared by the reaction of 1'-(diphenylphosphino)ferrocene-1-carboxylic acid (Hdpf) with 2-(diphenylphosphino) ethylamine or 2-*N,N'*-(dimethylamino)ethylamine. The amides were converted to their respective phosphinsulfides **5** and **6**. Addition of MeI to the solution of **6** gave ammonium salt **7** which, after desulfuration with Raney nickel afforded ammonium salt **8**. Compounds **3-8** were characterized by NMR and IR spectroscopy and by MS spectrometry. Phosphine sulfides **6** and polar amides **7** and **8** were structurally characterized. Amides **3**, **4** and **8** were tested as ligands in Pd-catalyzed Suzuki-Miyaura coupling reaction of phenylboronic acid with 4-bromacetophenone in organic solvent, water and in biphasic system.

Amides **3** and **4** and the related amides 1'-(diphenylphosphanyl)-1-[N-{3-(diphenylphosphino)propyl} carbamoyl]ferrocene(**1**) and 1'-(diphenylphosphanyl)-1-[N-(3-dimethylaminopropyl)carbamoyl] ferrocene (**2**) were reacted with [(COD)PdCl₂] to afford palladium complexes of the general formula [(L)PdCl₂]. These compounds were characterized by NMR and IR spectroscopy and by MS spectrometry and, for selected representatives, also by X-ray diffraction analysis.



Keywords: ferrocene, phosphinoamides, palladium, coordination study, catalysis, Suzuki-Miyaura cross-coupling reaction.