

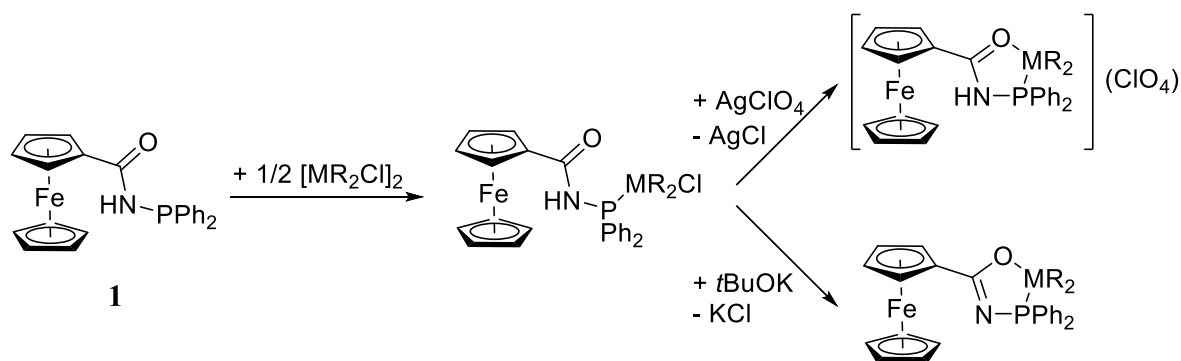
Title: Light platinum group metal complexes with a ferrocene N-phosphinoamide

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Abstract: The aim of this diploma thesis is the preparation of coordination compounds containing ferrocene phosphinoamide FcCONHPPh<sub>2</sub> (**1**, Fc = ferrocenyl), whose preparation was discussed in author's bachelor thesis. Twelve new complexes are described in this thesis, including their characterisation by NMR and infrared spectroscopy, elemental analysis and mass spectrometry. In all cases the crystal structure was determined.



Two palladium(II), one rhodium(III) and one ruthenium(II) precursors were used for the preparation of the complexes with each providing three new compounds. A reaction of the precursors with phosphinoamide **1** yielded complexes, in which the phosphinoamide was  $P$ -coordinated. This compound was a precursor for the other two complexes. The first one was obtained by a reaction with silver(I) perchlorate producing a cationic  $P,O$ -chelate. The other was obtained by a reaction with potassium *tert*-butoxide resulting in neutral  $P,O$ -chelate. All twelve complexes were prepared with optimised yields.

Keywords: ferrocene, amides, phosphines, palladium, rhodium, ruthenium, structure elucidation.