

Title: Cyclometallated platinum compounds with optically active ligands

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In this work, the synthesis of several platinum (II) cyclometallated compounds with bidentate ligands type [C,N] has been reported.

In order to carry out this synthesis, compound $K_2[PtCl_4]$ has been used to prepare the metal agent (**1a**) used in all cyclometallation reactions. One amine (**2a**) and three different imines (**2b-2c**), previously synthesized from amine **2a** and the corresponding aldehyde, have been used as ligands.

These ligands have been reacted with compound **1a** in toluene or in methanol to inquire which of these solvents is more optimal for the cyclometallation, thus obtaining cyclometallated compounds (**3a-3d**). The expected isomer for this synthesis is the *endo* configuration but depending on the solvent and the imine used different isomers such as *exo* configuration or even cyclometallated compounds with metallacycles containing more than five members might be obtained.

The latter were subsequently reacted with triphenylphosphane to form the corresponding derivatives (**4a-4d**) where the number of isomers has been reduced due to the stability given to the compound by triphenylphosphane.

The nature of the synthesised compounds has been studied by proton nuclear magnetic resonance spectroscopy and for some compounds also by mass spectrometry.

Keywords: Cyclometallated compounds, platinum, bidentate ligands, nuclear magnetic resonance spectroscopy, mass spectrometry, synthesis.