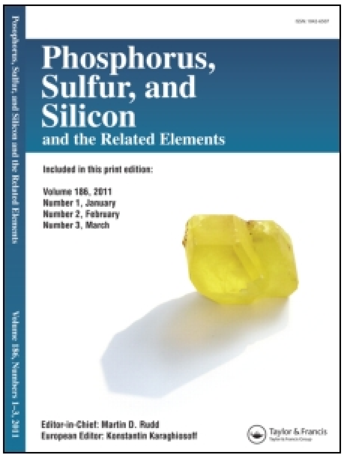

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RING OPENING OF FERROCENYL LAWESSONS AND WOOLLINS REAGENTS; SYNTHESIS OF NOVEL PHOSPHONODITHIOATO AND PHOSPHONODISELENOATO METAL COMPLEXES

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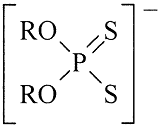
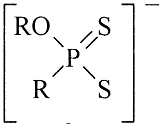
Keywords: Lawessons reagent; phosphonodiselenato complexes; phosphonodithiato complexes; Woollins reagent

There is a great deal of literature available detailing the synthesis, chemistry, and structural studies of the complexes of (**1**) and (**3**) ligands.[1] The same cannot be said for compounds of (**2**). Aragoni et al. have reported several monomeric structures involving two organodithiophosphonate ligands attached to a metal center (Ni^{2+}, Pd^{2+}, and Pt^{2+}) in a square planar conformation. They have achieved this via a ring opening reaction of the well known thionation compound Lawessons Reagent.[2] Here we report the synthesis of phosphonodithioate ligands and phosphodiselenoate ligands by the ring opening of Ferrocenyl Lawessons and Woollins reagents respectively. Reactions of these ligands were carried out with a variety of metal (2+) salts of the form MX_2 (where M = Ni, Pd, Pt, Cd, Zn, Hg, Pb, and Sn) forming metal complexes exhibiting a number of different structural motifs including square planar monomers, dimers, and even polymeric structures.



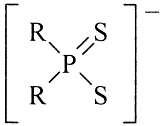
1

Phosph**oro**dithioate



2

Phosph**ono**dithioate



3

Phosph**ino**dithioate

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