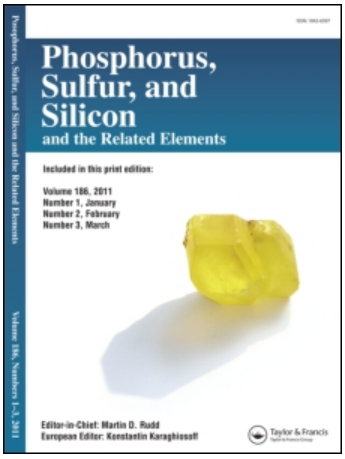

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HOMO AND HETERO BINUCLEAR COMPLEXES OF BRIDGING 1,8-NAPTHALENE DITHIOLATE LIGANDS

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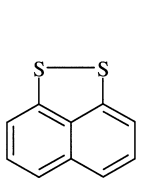
Naphthalene-1,8-dithiolate and related ligands represent a poorly studied set of ligands with this in mind we have embarked on a systematic study of the coordination chemistry of these ligand. The reaction of naphtha[1,8-*cd*][1,2]-dithiole **1** with an equimolar quantity of [{Ir(μ-Cl)(cod)}2] (cod = 1,5-cyclooctadiene) gave the dithiolate bridged dimer [{IrCl(cod)}$_2$(1,8-S_2-nap)] (1,8-S_2-nap = naphthalene-1,8-dithiolate) in good yield. Examples of neutral homo and hetero binuclear complexes have been prepared by the addition of various metal substrates to the metallo disulfur donor "ligand" [Pt(1,8-S_2-nap)(PPh_3)$_2$] **2** (which is prepared by oxidative addition of **1** to [Pt(PPh_3)$_4$]). Complexes of the general type [(PPh_3)$_2$Pt(μ^2-1,8-S_2-nap){ML_z}] (where ML_z = {$PtCl_2$}, {PtClMe}, {PtClPh}, {$PtMe_2$}, {$PtMe_3$I}, and {Mo(CO)$_4$}) have been prepared and fully characterized as have cationic complexes with the general formula [(PPh_3)$_2$Pt(μ^2-1,8-S_2-nap){ML_n}][X] (where {ML_n}[X] = {Pt(η^3-C_3H_5)}[ClO_4], {Pd(η^3-C_3H_5)}[ClO_4], {IrCl(η^5-C_5Me_5)}[ClO_4], RhCl(η^5-C_5Me_5)}[BF_4], {Pt(PMe_2Ph)$_2$}[ClO_4]$_2$, and {Rh(cod)}[ClO_4] were prepared by the addition of a halide abstractor such as Ag[BF_4] or Ag[ClO_4] to the metal



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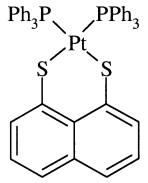

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chloride starting material to which was added [$(PPh_3)_2Pt(1,8\text{-}S_2\text{-nap})$] giving the appropriate cationic or di-cationic species.

Selected examples of both neutral and cationic complexes have been characterized by single crystal x-ray analysis.