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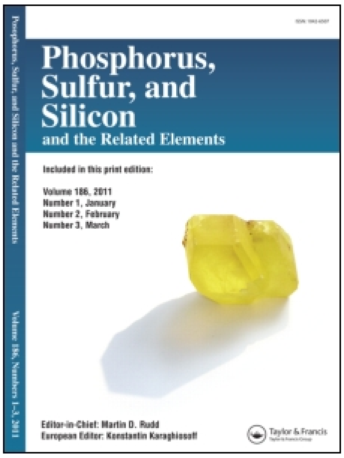

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Methylene Bridged P(III) and P (V) Phosphiniminato-Phosphanes: Versatile Ligands And Substituents for Metals and Metalloids

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METHYLENE BRIDGED P(III) AND P(V) PHOSPHINIMINATO-PHOSPHANES: VERSATILE LIGANDS AND SUBSTITUENTS FOR METALS AND METALLOIDS

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Recent studies[1] have shown that the mono oxidized phosphanoiminatophosphane $Me_3SiN{=}PPh_2CH_2PPh_2$ **1** is a versatile ligand for a variety of transition metals in high and low oxidation states. This heterodifunctional ligand may bind to metals via the "hard" (N) or the "soft"(P(III)) centres; the former favours high oxidation states and "early" transition metals, the latter, low oxidation states and "late" transition metals. Monodentate or bidentate complexation is observed and in the latter case chelation or bridging is possible. Elimination of Me_3SiCl from a metal halide or migration of Me_3Si group to a terminal oxygen atom leads to metal nitrogen sigma bond formation. To modify the basicity at nitrogen a variety of approaches have been employed. Metathetical elimination of Me_3SiX from activated halogenated aromatics leads to functionalisation at N. The R_3Sn and R_3Ge analogs of 1 have also been made by extensions of the Staudinger reaction. Reactions of 1 and its N-aromatic, N-Ge, and N-Sn analogs with a variety of metals wiil be described. In water, 1 produces the unstable parent imine which has been trapped as a coordination complex of Pd(II) and Pt(II) metals. The reactions of halides produces a variety of N substituted compounds of non metals (eg; =N-SePh) and metals (eg; $=N-TiR_3$) which demonstrate the important heterodifunctional character of the ligand system.

1. R. G. Cavell and K. V. Katti.; Phosphorus and Sulphur, in Press; Inorg Chem, in Press; Organometallics (1988), 7, 2236.